

Mobile-C

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Contents

1	MobileC	1
1.1	Introduction	1
2	Namespace Index	3
2.1	Namespace List	3
3	Data Structure Index	5
3.1	Data Structures	5
4	File Index	9
4.1	File List	9
5	Namespace Documentation	13
5.1	base64 Namespace Reference	13
5.1.1	Enumeration Type Documentation	13
5.1.1.1	base64_decodestep	13
5.1.1.2	base64_encodestep	14
5.1.2	Function Documentation	14
5.1.2.1	base64_decode_block	14
5.1.2.2	base64_decode_value	14
5.1.2.3	base64_encode_block	14
5.1.2.4	base64_encode_blockend	14
5.1.2.5	base64_encode_value	14
5.1.2.6	base64_init_decodestate	14
5.1.2.7	base64_init_encodestate	14
6	Data Structure Documentation	15
6.1	_hr_time Struct Reference	15
6.1.1	Detailed Description	15
6.1.2	Field Documentation	15

6.1.2.1	start	15
6.2	_ssl_context Struct Reference	16
6.2.1	Detailed Description	17
6.2.2	Field Documentation	17
6.2.2.1	authmode	17
6.2.2.2	ca_chain	17
6.2.2.3	ciphers	17
6.2.2.4	client_auth	18
6.2.2.5	ctx_dec	18
6.2.2.6	ctx_enc	18
6.2.2.7	dhm_ctx	18
6.2.2.8	do_crypt	18
6.2.2.9	endpoint	18
6.2.2.10	f_dbg	18
6.2.2.11	f_recv	19
6.2.2.12	f_rng	19
6.2.2.13	f_send	19
6.2.2.14	fin_md5	19
6.2.2.15	fin_sha1	19
6.2.2.16	hostname	19
6.2.2.17	hostname_len	19
6.2.2.18	in_ctr	20
6.2.2.19	in_hdr	20
6.2.2.20	in_hslen	20
6.2.2.21	in_left	20
6.2.2.22	in_msg	20
6.2.2.23	in_msrlen	20
6.2.2.24	in_msrtype	21
6.2.2.25	in_offt	21
6.2.2.26	iv_dec	21
6.2.2.27	iv_enc	21
6.2.2.28	ivlen	21
6.2.2.29	keylen	21
6.2.2.30	mac_dec	21
6.2.2.31	mac_enc	22
6.2.2.32	maclen	22

6.2.2.33	major_ver	22
6.2.2.34	max_major_ver	22
6.2.2.35	max_minor_ver	22
6.2.2.36	minlen	22
6.2.2.37	minor_ver	23
6.2.2.38	nb_zero	23
6.2.2.39	out_ctr	23
6.2.2.40	out_hdr	23
6.2.2.41	out_left	23
6.2.2.42	out_msg	23
6.2.2.43	out_msflen	24
6.2.2.44	out_msftype	24
6.2.2.45	own_cert	24
6.2.2.46	p_dbg	24
6.2.2.47	p_recv	24
6.2.2.48	p_rng	24
6.2.2.49	p_send	25
6.2.2.50	peer_cert	25
6.2.2.51	peer_cn	25
6.2.2.52	pmslen	25
6.2.2.53	premaster	25
6.2.2.54	randbytes	25
6.2.2.55	resume	25
6.2.2.56	rsa_key	26
6.2.2.57	s_get	26
6.2.2.58	s_set	26
6.2.2.59	session	26
6.2.2.60	state	26
6.2.2.61	timeout	27
6.2.2.62	verify_result	27
6.3	_ssl_session Struct Reference	28
6.3.1	Detailed Description	28
6.3.2	Field Documentation	28
6.3.2.1	cipher	28
6.3.2.2	id	28
6.3.2.3	length	28

6.3.2.4	master	28
6.3.2.5	next	29
6.3.2.6	start	29
6.4	_x509_buf Struct Reference	30
6.4.1	Detailed Description	30
6.4.2	Field Documentation	30
6.4.2.1	len	30
6.4.2.2	p	30
6.4.2.3	tag	30
6.5	_x509_cert Struct Reference	31
6.5.1	Detailed Description	31
6.5.2	Field Documentation	31
6.5.2.1	ca_istru	31
6.5.2.2	issuer	31
6.5.2.3	issuer_id	31
6.5.2.4	issuer_raw	32
6.5.2.5	max_pathlen	32
6.5.2.6	next	32
6.5.2.7	pk_oid	32
6.5.2.8	raw	32
6.5.2.9	rsa	32
6.5.2.10	serial	32
6.5.2.11	sig	32
6.5.2.12	sig_oid1	33
6.5.2.13	sig_oid2	33
6.5.2.14	subject	33
6.5.2.15	subject_id	33
6.5.2.16	subject_raw	33
6.5.2.17	tbs	33
6.5.2.18	v3_ext	33
6.5.2.19	valid_from	33
6.5.2.20	valid_to	33
6.5.2.21	version	34
6.6	_x509_name Struct Reference	35
6.6.1	Detailed Description	35
6.6.2	Field Documentation	35

6.6.2.1	next	35
6.6.2.2	oid	35
6.6.2.3	val	35
6.7	_x509_node Struct Reference	36
6.7.1	Detailed Description	36
6.7.2	Field Documentation	36
6.7.2.1	data	36
6.7.2.2	end	36
6.7.2.3	len	36
6.7.2.4	p	36
6.8	_x509_raw Struct Reference	37
6.8.1	Detailed Description	37
6.8.2	Field Documentation	37
6.8.2.1	issuer	37
6.8.2.2	raw	37
6.8.2.3	serial	37
6.8.2.4	sign	37
6.8.2.5	signalg	37
6.8.2.6	subject	37
6.8.2.7	subpubkey	38
6.8.2.8	tbs	38
6.8.2.9	tbs_signalg	38
6.8.2.10	validity	38
6.8.2.11	version	38
6.9	_x509_time Struct Reference	39
6.9.1	Detailed Description	39
6.9.2	Field Documentation	39
6.9.2.1	day	39
6.9.2.2	hour	39
6.9.2.3	min	39
6.9.2.4	mon	39
6.9.2.5	sec	39
6.9.2.6	year	40
6.10	aes_context Struct Reference	41
6.10.1	Detailed Description	41
6.10.2	Field Documentation	41

6.10.2.1	buf	41
6.10.2.2	nr	41
6.10.2.3	rk	41
6.11	agency_s Struct Reference	42
6.11.1	Detailed Description	42
6.11.2	Field Documentation	42
6.11.2.1	agentInitCallback	42
6.11.2.2	agentInitUserData	42
6.11.2.3	bluetooth	42
6.11.2.4	client	43
6.11.2.5	default_agentstatus	43
6.11.2.6	enable_security	43
6.11.2.7	filename	43
6.11.2.8	hostName	43
6.11.2.9	initInterps	43
6.11.2.10	known_host_filename	43
6.11.2.11	last_error	43
6.11.2.12	mc_platform	44
6.11.2.13	portno	44
6.11.2.14	portnoc	44
6.11.2.15	priv_key_filename	44
6.11.2.16	server	44
6.11.2.17	stack_size	44
6.11.2.18	threads	45
6.12	agent_datastate_s Struct Reference	46
6.12.1	Detailed Description	46
6.12.2	Field Documentation	46
6.12.2.1	agent_code	46
6.12.2.2	agent_code_ids	46
6.12.2.3	agent_codes	46
6.12.2.4	init_agent_status	47
6.12.2.5	number_of_tasks	47
6.12.2.6	persistent	47
6.12.2.7	progress_modifier	47
6.12.2.8	return_data	47
6.12.2.9	task_progress	47

6.12.2.10 tasks	47
6.12.2.11 xml_agent_root	48
6.12.2.12 xml_root	48
6.13 agent_file_data_s Struct Reference	49
6.13.1 Detailed Description	49
6.13.2 Field Documentation	49
6.13.2.1 data	49
6.13.2.2 name	49
6.14 agent_s Struct Reference	50
6.14.1 Detailed Description	50
6.14.2 Field Documentation	50
6.14.2.1 agent_address	50
6.14.2.2 agent_interp	51
6.14.2.3 agent_persistent	51
6.14.2.4 agent_pipe_active	51
6.14.2.5 agent_pipe_ready_to_read	51
6.14.2.6 agent_ready_to_send	51
6.14.2.7 agent_script_ready	51
6.14.2.8 agent_status	51
6.14.2.9 agent_status_cond	51
6.14.2.10 agent_status_lock	52
6.14.2.11 agent_thread	52
6.14.2.12 agent_thread_id	52
6.14.2.13 agent_type	52
6.14.2.14 arrival_time	52
6.14.2.15 binary	52
6.14.2.16 connect_id	52
6.14.2.17 datastate	53
6.14.2.18 home	53
6.14.2.19 home_port	53
6.14.2.20 id	53
6.14.2.21 lock	53
6.14.2.22 mailbox	53
6.14.2.23 mc_platform	54
6.14.2.24 name	54
6.14.2.25 orphan	54

6.14.2.26 owner	54
6.14.2.27 return_data	54
6.14.2.28 run_lock	54
6.14.2.29 sender	54
6.14.2.30 wg_code	55
6.15 agent_task_s Struct Reference	56
6.15.1 Detailed Description	56
6.15.2 Field Documentation	56
6.15.2.1 agent_file_list	56
6.15.2.2 agent_return_data	56
6.15.2.3 agent_variable_list	56
6.15.2.4 code_id	57
6.15.2.5 init_agent_status	57
6.15.2.6 num_saved_variables	57
6.15.2.7 number_of_elements	57
6.15.2.8 persistent	57
6.15.2.9 saved_variables	57
6.15.2.10 server_name	57
6.15.2.11 size_of_element_array	57
6.15.2.12 var_name	58
6.16 arc4_context Struct Reference	59
6.16.1 Detailed Description	59
6.16.2 Field Documentation	59
6.16.2.1 m	59
6.16.2.2 x	59
6.16.2.3 y	59
6.17 barrier_node_s Struct Reference	60
6.17.1 Detailed Description	60
6.17.2 Field Documentation	60
6.17.2.1 cond	60
6.17.2.2 id	60
6.17.2.3 lock	60
6.17.2.4 num_registered	60
6.17.2.5 num_waiting	60
6.18 barrier_queue_s Struct Reference	62
6.18.1 Detailed Description	62

6.18.2 Field Documentation	62
6.18.2.1 list	62
6.18.2.2 lock	62
6.18.2.3 size	62
6.19 base64_decodestate Struct Reference	63
6.19.1 Detailed Description	63
6.19.2 Field Documentation	63
6.19.2.1 plainchar	63
6.19.2.2 step	63
6.20 base64::base64_decodestate Struct Reference	64
6.20.1 Detailed Description	64
6.20.2 Field Documentation	64
6.20.2.1 plainchar	64
6.20.2.2 step	64
6.21 base64_encodestate Struct Reference	65
6.21.1 Detailed Description	65
6.21.2 Field Documentation	65
6.21.2.1 result	65
6.21.2.2 step	65
6.21.2.3 stepcount	65
6.22 base64::base64_encodestate Struct Reference	66
6.22.1 Detailed Description	66
6.22.2 Field Documentation	66
6.22.2.1 result	66
6.22.2.2 step	66
6.22.2.3 stepcount	66
6.23 cmd_prompt_s Struct Reference	67
6.23.1 Detailed Description	67
6.23.2 Field Documentation	67
6.23.2.1 thread	67
6.24 command_s Struct Reference	68
6.24.1 Detailed Description	68
6.24.2 Field Documentation	68
6.24.2.1 args	68
6.24.2.2 index	68
6.24.2.3 num_args	68

6.25	connection_s Struct Reference	69
6.25.1	Detailed Description	69
6.25.2	Field Documentation	69
6.25.2.1	addr	69
6.25.2.2	AES_key	69
6.25.2.3	clientfd	69
6.25.2.4	connect_id	69
6.25.2.5	nonce	69
6.25.2.6	remote_hostname	70
6.25.2.7	serverfd	70
6.26	fipa_expression_s::content_u Union Reference	71
6.26.1	Detailed Description	71
6.26.2	Field Documentation	71
6.26.2.1	datetime	71
6.26.2.2	expression	71
6.26.2.3	number	71
6.26.2.4	string	71
6.26.2.5	word	71
6.27	base64::decoder Struct Reference	73
6.27.1	Detailed Description	73
6.27.2	Constructor & Destructor Documentation	73
6.27.2.1	decoder	73
6.27.3	Member Function Documentation	73
6.27.3.1	decode	73
6.27.3.2	decode	73
6.27.3.3	decode	73
6.27.4	Field Documentation	74
6.27.4.1	_buffersize	74
6.27.4.2	_state	74
6.28	des3_context Struct Reference	75
6.28.1	Detailed Description	75
6.28.2	Field Documentation	75
6.28.2.1	mode	75
6.28.2.2	sk	75
6.29	des_context Struct Reference	76
6.29.1	Detailed Description	76

6.29.2 Field Documentation	76
6.29.2.1 mode	76
6.29.2.2 sk	76
6.30 dhm_context Struct Reference	77
6.30.1 Detailed Description	77
6.30.2 Field Documentation	77
6.30.2.1 G	77
6.30.2.2 GX	77
6.30.2.3 GY	77
6.30.2.4 K	78
6.30.2.5 len	78
6.30.2.6 P	78
6.30.2.7 RP	78
6.30.2.8 X	78
6.31 dynstring_s Struct Reference	79
6.31.1 Detailed Description	79
6.31.2 Field Documentation	79
6.31.2.1 len	79
6.31.2.2 message	79
6.31.2.3 size	79
6.32 base64::encoder Struct Reference	80
6.32.1 Detailed Description	80
6.32.2 Constructor & Destructor Documentation	80
6.32.2.1 encoder	80
6.32.3 Member Function Documentation	80
6.32.3.1 encode	80
6.32.3.2 encode	80
6.32.3.3 encode	80
6.32.3.4 encode_end	80
6.32.4 Field Documentation	81
6.32.4.1 _buffersize	81
6.32.4.2 _state	81
6.33 fipa_acl_envelope_Received_s Struct Reference	82
6.33.1 Detailed Description	82
6.33.2 Field Documentation	82
6.33.2.1 received_by	82

6.33.2.2	received_date	82
6.33.2.3	received_from	82
6.33.2.4	received_id	82
6.33.2.5	received_via	82
6.34	fipa_acl_envelope_s Struct Reference	84
6.34.1	Detailed Description	84
6.34.2	Field Documentation	84
6.34.2.1	num_params	84
6.34.2.2	params	84
6.35	fipa_acl_message_s Struct Reference	85
6.35.1	Detailed Description	85
6.35.2	Field Documentation	85
6.35.2.1	content	85
6.35.2.2	conversation_id	85
6.35.2.3	encoding	85
6.35.2.4	in_reply_to	86
6.35.2.5	language	86
6.35.2.6	ontology	86
6.35.2.7	performative	86
6.35.2.8	protocol	86
6.35.2.9	receiver	86
6.35.2.10	receiver_num	86
6.35.2.11	reply_by	87
6.35.2.12	reply_to	87
6.35.2.13	reply_with	87
6.35.2.14	sender	87
6.36	fipa_acl_Param_s Struct Reference	88
6.36.1	Detailed Description	88
6.36.2	Field Documentation	88
6.36.2.1	acl_representation	88
6.36.2.2	comments	88
6.36.2.3	date	88
6.36.2.4	from	88
6.36.2.5	intended_receiver	89
6.36.2.6	payload_encoding	89
6.36.2.7	payload_length	89

6.36.2.8	received	89
6.36.2.9	to	89
6.37	fipa_agent_identifier_s Struct Reference	90
6.37.1	Detailed Description	90
6.37.2	Field Documentation	90
6.37.2.1	addresses	90
6.37.2.2	name	90
6.37.2.3	resolvers	90
6.38	fipa_agent_identifier_set_s Struct Reference	91
6.38.1	Detailed Description	91
6.38.2	Field Documentation	91
6.38.2.1	fipa_agent_identifiers	91
6.38.2.2	num	91
6.38.2.3	retain_order	91
6.39	fipa_comm_action_t Struct Reference	92
6.39.1	Detailed Description	92
6.39.2	Field Documentation	92
6.39.2.1	callback	92
6.39.2.2	check_list	92
6.39.2.3	next	92
6.39.2.4	reply	92
6.39.2.5	type	92
6.40	fipa_comm_message_check_t Struct Reference	93
6.40.1	Detailed Description	93
6.40.2	Field Documentation	93
6.40.2.1	macro	93
6.40.2.2	next	93
6.40.2.3	type	93
6.41	fipa_comm_performative_t Struct Reference	94
6.41.1	Detailed Description	94
6.41.2	Field Documentation	94
6.41.2.1	action_list	94
6.41.2.2	default_reply	94
6.42	fipa_comm_protocol_cn_t Struct Reference	95
6.42.1	Detailed Description	95
6.42.2	Field Documentation	95

6.42.2.1	cfp_request	95
6.42.2.2	contract_func	95
6.42.2.3	proposal_func	95
6.42.2.4	queue	95
6.42.2.5	replies	95
6.42.2.6	require_inform	95
6.42.2.7	time_out	96
6.43	fipa_comm_protocol_t Struct Reference	97
6.43.1	Detailed Description	97
6.43.2	Field Documentation	97
6.43.2.1	conversation_id	97
6.43.2.2	error	97
6.43.2.3	info	97
6.43.2.4	network	97
6.43.2.5	next	97
6.43.2.6	state	97
6.43.2.7	type	98
6.44	fipa_comm_reply_t Struct Reference	99
6.44.1	Detailed Description	99
6.44.2	Field Documentation	99
6.44.2.1	content	99
6.44.2.2	type	99
6.45	fipa_comm_t Struct Reference	100
6.45.1	Detailed Description	100
6.45.2	Field Documentation	100
6.45.2.1	agent	100
6.45.2.2	agent_address	100
6.45.2.3	agent_name	100
6.45.2.4	debug	100
6.45.2.5	default_reply	100
6.45.2.6	error	100
6.45.2.7	pCallbacks	101
6.45.2.8	performative	101
6.45.2.9	protocol	101
6.46	fipa_DateTime_s Struct Reference	102
6.46.1	Detailed Description	102

6.46.2	Field Documentation	102
6.46.2.1	day	102
6.46.2.2	hour	102
6.46.2.3	is_utc	102
6.46.2.4	millisecond	102
6.46.2.5	minute	102
6.46.2.6	month	103
6.46.2.7	second	103
6.46.2.8	sign	103
6.46.2.9	year	103
6.47	fipa_expression_s Struct Reference	104
6.47.1	Detailed Description	104
6.47.2	Field Documentation	104
6.47.2.1	content	104
6.47.2.2	type	104
6.48	fipa_list_t Struct Reference	105
6.48.1	Detailed Description	105
6.48.2	Field Documentation	105
6.48.2.1	data	105
6.48.2.2	next	105
6.49	fipa_message_string_s Struct Reference	106
6.49.1	Detailed Description	106
6.49.2	Field Documentation	106
6.49.2.1	message	106
6.49.2.2	parse	106
6.50	fipa_number_s Struct Reference	107
6.50.1	Detailed Description	107
6.50.2	Field Documentation	107
6.50.2.1	str	107
6.51	fipa_string_s Struct Reference	108
6.51.1	Detailed Description	108
6.51.2	Field Documentation	108
6.51.2.1	content	108
6.52	fipa_url_s Struct Reference	109
6.52.1	Detailed Description	109
6.52.2	Field Documentation	109

6.52.2.1	str	109
6.53	fipa_url_sequence_s Struct Reference	110
6.53.1	Detailed Description	110
6.53.2	Field Documentation	110
6.53.2.1	num	110
6.53.2.2	urls	110
6.54	fipa_word_s Struct Reference	111
6.54.1	Detailed Description	111
6.54.2	Field Documentation	111
6.54.2.1	content	111
6.55	foo_c Class Reference	112
6.55.1	Detailed Description	112
6.55.2	Constructor & Destructor Documentation	112
6.55.2.1	foo_c	112
6.55.2.2	~foo_c	112
6.55.3	Member Function Documentation	112
6.55.3.1	get_bar	112
6.55.3.2	get_barfoo	113
6.55.3.3	get_foo	113
6.55.3.4	get_global	113
6.55.3.5	set_bar	113
6.55.3.6	set_foo	113
6.55.3.7	set_foobar	113
6.55.4	Field Documentation	113
6.55.4.1	bar	113
6.55.4.2	barfoo	113
6.55.4.3	foo	114
6.55.4.4	global	114
6.56	foo_s Struct Reference	115
6.56.1	Detailed Description	115
6.56.2	Constructor & Destructor Documentation	115
6.56.2.1	foo_s	115
6.56.2.2	~foo_s	115
6.56.3	Member Function Documentation	115
6.56.3.1	get_bar	115
6.56.3.2	get_foo	115

6.56.3.3	set_bar	116
6.56.3.4	set_foo	116
6.56.4	Field Documentation	116
6.56.4.1	bar	116
6.56.4.2	foo	116
6.57	havege_state Struct Reference	117
6.57.1	Detailed Description	117
6.57.2	Field Documentation	117
6.57.2.1	offset	117
6.57.2.2	pool	117
6.57.2.3	PT1	117
6.57.2.4	PT2	117
6.57.2.5	WALK	117
6.58	host_id_s Struct Reference	119
6.58.1	Detailed Description	119
6.58.2	Field Documentation	119
6.58.2.1	hostname	119
6.58.2.2	port	119
6.59	hr_time Struct Reference	120
6.59.1	Detailed Description	120
6.59.2	Field Documentation	120
6.59.2.1	opaque	120
6.60	interpreter_variable_data_s Struct Reference	121
6.60.1	Detailed Description	121
6.60.2	Field Documentation	121
6.60.2.1	array_dim	121
6.60.2.2	array_extent	121
6.60.2.3	data	121
6.60.2.4	data_type	122
6.60.2.5	name	122
6.60.2.6	size	122
6.61	list_s Struct Reference	123
6.61.1	Detailed Description	123
6.61.2	Field Documentation	123
6.61.2.1	listhead	123
6.61.2.2	rwlock	123

6.61.2.3	size	123
6.62	listNode_s Struct Reference	124
6.62.1	Detailed Description	124
6.62.2	Field Documentation	124
6.62.2.1	next	124
6.62.2.2	node_data	124
6.63	mc_platform_s Struct Reference	125
6.63.1	Detailed Description	125
6.63.2	Field Documentation	126
6.63.2.1	acc	126
6.63.2.2	agency	126
6.63.2.3	agent_processing	126
6.63.2.4	agent_queue	126
6.63.2.5	ams	126
6.63.2.6	asm_message_queue	126
6.63.2.7	barrier_queue	127
6.63.2.8	bluetooth	127
6.63.2.9	client_thread_arg	127
6.63.2.10	cmd_prompt	127
6.63.2.11	connection_queue	127
6.63.2.12	default_agentstatus	127
6.63.2.13	df	127
6.63.2.14	err	127
6.63.2.15	giant	128
6.63.2.16	giant_cond	128
6.63.2.17	giant_lock	128
6.63.2.18	hostname	128
6.63.2.19	initInterps	128
6.63.2.20	interp_options	128
6.63.2.21	interpreter_queue	128
6.63.2.22	listen_thread_arg	128
6.63.2.23	MC_signal	129
6.63.2.24	MC_signal_cond	129
6.63.2.25	MC_signal_lock	129
6.63.2.26	MC_steer_command	129
6.63.2.27	MC_steer_cond	129

6.63.2.28 MC_steer_lock	129
6.63.2.29 MC_sync_cond	129
6.63.2.30 MC_sync_lock	129
6.63.2.31 message_queue	130
6.63.2.32 port	130
6.63.2.33 private_key	130
6.63.2.34 quit	130
6.63.2.35 quit_cond	130
6.63.2.36 quit_lock	130
6.63.2.37 sockfd	130
6.63.2.38 stack_size	131
6.63.2.39 syncList	131
6.64 mc_rwlock_s Struct Reference	132
6.64.1 Detailed Description	132
6.64.2 Field Documentation	132
6.64.2.1 cond	132
6.64.2.2 lock	132
6.64.2.3 num_readers	132
6.64.2.4 write_flag	132
6.64.2.5 write_request	132
6.65 MCAgencyOptions_s Struct Reference	134
6.65.1 Detailed Description	134
6.65.2 Field Documentation	134
6.65.2.1 bluetooth	134
6.65.2.2 ch_options	134
6.65.2.3 default_agent_status	134
6.65.2.4 enable_security	135
6.65.2.5 initialized	135
6.65.2.6 initInterps	135
6.65.2.7 known_host_filename	135
6.65.2.8 modified	135
6.65.2.9 passphrase	135
6.65.2.10 priv_key_filename	135
6.65.2.11 stack_size	135
6.65.2.12 threads	136
6.66 md2_context Struct Reference	137

6.66.1	Detailed Description	137
6.66.2	Field Documentation	137
6.66.2.1	buffer	137
6.66.2.2	cksum	137
6.66.2.3	ipad	137
6.66.2.4	left	137
6.66.2.5	opad	137
6.66.2.6	state	138
6.67	md4_context Struct Reference	139
6.67.1	Detailed Description	139
6.67.2	Field Documentation	139
6.67.2.1	buffer	139
6.67.2.2	ipad	139
6.67.2.3	opad	139
6.67.2.4	state	139
6.67.2.5	total	139
6.68	md5_context Struct Reference	141
6.68.1	Detailed Description	141
6.68.2	Field Documentation	141
6.68.2.1	buffer	141
6.68.2.2	ipad	141
6.68.2.3	opad	141
6.68.2.4	state	141
6.68.2.5	total	142
6.69	message_s Struct Reference	143
6.69.1	Detailed Description	143
6.69.2	Field Documentation	143
6.69.2.1	addr	143
6.69.2.2	agent_xml_flag	143
6.69.2.3	connect_id	143
6.69.2.4	from_address	144
6.69.2.5	http_type	144
6.69.2.6	isHTTP	144
6.69.2.7	message_body	144
6.69.2.8	message_id	144
6.69.2.9	message_type	144

6.69.2.10	sending_agent_name	144
6.69.2.11	target	144
6.69.2.12	to_address	145
6.69.2.13	update_name	145
6.69.2.14	update_num	145
6.69.2.15	xml_payload	145
6.69.2.16	xml_root	145
6.70	message_send_arg_s Struct Reference	146
6.70.1	Detailed Description	146
6.70.2	Field Documentation	146
6.70.2.1	mc_platform	146
6.70.2.2	message	146
6.70.2.3	privatekey	146
6.71	mpi Struct Reference	147
6.71.1	Detailed Description	147
6.71.2	Field Documentation	147
6.71.2.1	n	147
6.71.2.2	p	147
6.71.2.3	s	147
6.72	mtp_http_content_s Struct Reference	149
6.72.1	Detailed Description	149
6.72.2	Field Documentation	149
6.72.2.1	content_type	149
6.72.2.2	data	149
6.73	mtp_http_s Struct Reference	150
6.73.1	Detailed Description	150
6.73.2	Field Documentation	150
6.73.2.1	accept_ranges	150
6.73.2.2	boundary	150
6.73.2.3	cache_control	150
6.73.2.4	connection	151
6.73.2.5	content	151
6.73.2.6	content_length	151
6.73.2.7	content_type	151
6.73.2.8	date	151
6.73.2.9	header_length	151

6.73.2.10 host	151
6.73.2.11 http_performative	151
6.73.2.12 http_status_code	152
6.73.2.13 http_version	152
6.73.2.14 message_parts	152
6.73.2.15 mime_version	152
6.73.2.16 response_code	152
6.73.2.17 response_string	152
6.73.2.18 return_code	152
6.73.2.19 server	152
6.73.2.20 target	152
6.73.2.21 user_agent	153
6.74 mxml_attr_s Struct Reference	154
6.74.1 Detailed Description	154
6.74.2 Field Documentation	154
6.74.2.1 name	154
6.74.2.2 value	154
6.75 mxml_custom_s Struct Reference	155
6.75.1 Detailed Description	155
6.75.2 Field Documentation	155
6.75.2.1 data	155
6.75.2.2 destroy	155
6.76 mxml_fdbuf_s Struct Reference	156
6.76.1 Detailed Description	156
6.76.2 Field Documentation	156
6.76.2.1 buffer	156
6.76.2.2 current	156
6.76.2.3 end	156
6.76.2.4 fd	156
6.77 mxml_index_s Struct Reference	157
6.77.1 Detailed Description	157
6.77.2 Field Documentation	157
6.77.2.1 alloc_nodes	157
6.77.2.2 attr	157
6.77.2.3 cur_node	157
6.77.2.4 nodes	157

6.77.2.5	num_nodes	157
6.78	mxml_node_s Struct Reference	159
6.78.1	Detailed Description	159
6.78.2	Field Documentation	159
6.78.2.1	child	159
6.78.2.2	last_child	159
6.78.2.3	next	159
6.78.2.4	parent	159
6.78.2.5	prev	160
6.78.2.6	type	160
6.78.2.7	value	160
6.79	mxml_text_s Struct Reference	161
6.79.1	Detailed Description	161
6.79.2	Field Documentation	161
6.79.2.1	string	161
6.79.2.2	whitespace	161
6.80	mxml_value_s Struct Reference	162
6.80.1	Detailed Description	162
6.80.2	Field Documentation	162
6.80.2.1	attrs	162
6.80.2.2	name	162
6.80.2.3	numAttrs	162
6.81	mxml_value_u Union Reference	163
6.81.1	Detailed Description	163
6.81.2	Field Documentation	163
6.81.2.1	custom	163
6.81.2.2	element	163
6.81.2.3	integer	163
6.81.2.4	opaque	163
6.81.2.5	real	163
6.81.2.6	text	164
6.82	options Struct Reference	165
6.82.1	Detailed Description	165
6.82.2	Field Documentation	165
6.82.2.1	buffer_size	165
6.82.2.2	command	165

6.82.2.3 conn_timeout	165
6.82.2.4 debug_level	165
6.82.2.5 force_cipher	166
6.82.2.6 iomode	166
6.82.2.7 max_bytes	166
6.82.2.8 max_connections	166
6.82.2.9 opmode	166
6.82.2.10 server_name	166
6.82.2.11 server_port	166
6.82.2.12 session_lifetime	166
6.82.2.13 session_reuse	166
6.83 rsa_context Struct Reference	168
6.83.1 Detailed Description	168
6.83.2 Field Documentation	168
6.83.2.1 D	168
6.83.2.2 DP	168
6.83.2.3 DQ	169
6.83.2.4 E	169
6.83.2.5 f_rng	169
6.83.2.6 hash_id	169
6.83.2.7 len	169
6.83.2.8 N	169
6.83.2.9 P	170
6.83.2.10 p_rng	170
6.83.2.11 padding	170
6.83.2.12 Q	170
6.83.2.13 QP	170
6.83.2.14 RN	170
6.83.2.15 RP	171
6.83.2.16 RQ	171
6.83.2.17 ver	171
6.84 rwlock_s Struct Reference	172
6.84.1 Detailed Description	172
6.84.2 Field Documentation	172
6.84.2.1 lock	172
6.84.2.2 reader_cond	172

6.84.2.3	readers	172
6.84.2.4	writer_cond	172
6.85	sha1_context Struct Reference	173
6.85.1	Detailed Description	173
6.85.2	Field Documentation	173
6.85.2.1	buffer	173
6.85.2.2	ipad	173
6.85.2.3	opad	173
6.85.2.4	state	173
6.85.2.5	total	174
6.86	sha2_context Struct Reference	175
6.86.1	Detailed Description	175
6.86.2	Field Documentation	175
6.86.2.1	buffer	175
6.86.2.2	ipad	175
6.86.2.3	is224	175
6.86.2.4	opad	175
6.86.2.5	state	176
6.86.2.6	total	176
6.87	sha4_context Struct Reference	177
6.87.1	Detailed Description	177
6.87.2	Field Documentation	177
6.87.2.1	buffer	177
6.87.2.2	ipad	177
6.87.2.3	is384	177
6.87.2.4	opad	177
6.87.2.5	state	178
6.87.2.6	total	178
6.88	stationary_agent_info_s Struct Reference	179
6.88.1	Detailed Description	179
6.88.2	Field Documentation	179
6.88.2.1	agency	179
6.88.2.2	agent	179
6.88.2.3	args	179
6.88.2.4	attr	179
6.88.2.5	thread	179

6.89 syncListNode_s Struct Reference	180
6.89.1 Detailed Description	180
6.89.2 Field Documentation	180
6.89.2.1 cond	180
6.89.2.2 id	180
6.89.2.3 lock	180
6.89.2.4 sem	180
6.89.2.5 signalled	180
7 File Documentation	183
7.1 /home/dko/Projects/mobilec/src/acc.c File Reference	183
7.1.1 Define Documentation	185
7.1.1.1 BACKLOG	185
7.1.1.2 BUflen	185
7.1.1.3 Conn_Threads	185
7.1.1.4 Connect_Thread_Exit	185
7.1.1.5 UDPPORT	185
7.1.2 Function Documentation	185
7.1.2.1 acc_Connection_Thread	185
7.1.2.2 acc_Destroy	186
7.1.2.3 acc_Initialize	186
7.1.2.4 acc_MessageHandlerThread	186
7.1.2.5 acc_Start	186
7.1.2.6 acc_Thread	187
7.1.2.7 auth_conn_rece_key	187
7.1.2.8 listen_Thread	187
7.1.2.9 udplisten_Thread	187
7.2 /home/dko/Projects/mobilec/src/agent.c File Reference	188
7.2.1 Function Documentation	188
7.2.1.1 agent_AddPersistentVariable	188
7.2.1.2 agent_ChScriptInitVar	188
7.2.1.3 agent_CmpID	189
7.2.1.4 agent_CmpName	189
7.2.1.5 agent_Copy	189
7.2.1.6 agent_Destroy	190
7.2.1.7 agent_Initialize	190
7.2.1.8 agent_New	190

7.2.1.9	agent_NewBinary	190
7.2.1.10	agent_Print	191
7.2.1.11	agent_RunChScript	191
7.2.1.12	agent_RunChScriptThread	191
7.3	/home/dko/Projects/mobilec/src/agent_datastate.c File Reference	192
7.3.1	Function Documentation	192
7.3.1.1	agent_datastate_Copy	192
7.3.1.2	agent_datastate_Destroy	192
7.3.1.3	agent_datastate_New	192
7.4	/home/dko/Projects/mobilec/src/agent_file_data.c File Reference	193
7.4.1	Function Documentation	193
7.4.1.1	agent_file_data_CmpName	193
7.4.1.2	agent_file_data_Copy	193
7.4.1.3	agent_file_data_Destroy	193
7.4.1.4	agent_file_data_Encode	193
7.4.1.5	agent_file_data_InitializeFromFilename	194
7.4.1.6	agent_file_data_New	194
7.4.1.7	agent_file_data_NewWithData	194
7.5	/home/dko/Projects/mobilec/src/agent_return_data.c File Reference	195
7.5.1	Function Documentation	195
7.5.1.1	interpreter_variable_data_CmpName	195
7.5.1.2	interpreter_variable_data_Copy	195
7.5.1.3	interpreter_variable_data_Destroy	195
7.5.1.4	interpreter_variable_data_Initialize	196
7.5.1.5	interpreter_variable_data_InitializeFromAgent	196
7.5.1.6	interpreter_variable_data_New	196
7.6	/home/dko/Projects/mobilec/src/agent_task.c File Reference	197
7.6.1	Function Documentation	197
7.6.1.1	agent_task_Copy	197
7.6.1.2	agent_task_Destroy	197
7.6.1.3	agent_task_New	198
7.7	/home/dko/Projects/mobilec/src/ams.c File Reference	199
7.7.1	Function Documentation	199
7.7.1.1	ams_Destroy	199
7.7.1.2	ams_Initialize	199
7.7.1.3	ams_ManageAgentList	199

7.7.1.4	ams_Print	200
7.7.1.5	ams_Start	200
7.7.1.6	ams_Thread	200
7.8	/home/dko/Projects/mobilec/src/barrier.c File Reference	201
7.8.1	Function Documentation	201
7.8.1.1	barrier_node_CmpID	201
7.8.1.2	barrier_node_Destroy	201
7.8.1.3	barrier_node_Initialize	201
7.9	/home/dko/Projects/mobilec/src/cmd_prompt.c File Reference	202
7.9.1	Function Documentation	202
7.9.1.1	cmd_prompt_Destroy	202
7.9.1.2	cmd_prompt_Initialize	202
7.9.1.3	cmd_prompt_Start	203
7.9.1.4	cmd_prompt_Thread	203
7.9.1.5	dealloc_command	203
7.9.1.6	exec_command	203
7.9.1.7	handler_COMPOSE_SEND	203
7.9.1.8	handler_FLUSH_AGENTS	203
7.9.1.9	handler_HELP	203
7.9.1.10	handler_PRINT_CONNECTLIST	204
7.9.1.11	handler_PRINTLIST_AGENTS	204
7.9.1.12	handler_PRINTLIST_MESSAGE	204
7.9.1.13	handler_QUIT	204
7.9.1.14	handler_SEND	204
7.9.1.15	process_command	204
7.9.1.16	split_string	204
7.10	/home/dko/Projects/mobilec/src/connection.c File Reference	205
7.10.1	Function Documentation	205
7.10.1.1	connection_Copy	205
7.10.1.2	connection_Destroy	205
7.10.1.3	connection_New	205
7.10.1.4	connection_Print	205
7.11	/home/dko/Projects/mobilec/src/df.c File Reference	206
7.11.1	Define Documentation	206
7.11.1.1	REQUEST	206
7.11.2	Function Documentation	207

7.11.2.1	df_Add	207
7.11.2.2	df_AddRequest	207
7.11.2.3	df_Destroy	207
7.11.2.4	df_Initialize	207
7.11.2.5	df_node_Destroy	207
7.11.2.6	df_ProcessRequest	207
7.11.2.7	df_request_list_Destroy	208
7.11.2.8	df_request_list_node_Destroy	208
7.11.2.9	df_request_list_node_New	208
7.11.2.10	df_request_search_Destroy	208
7.11.2.11	df_request_search_New	208
7.11.2.12	df_SearchForService	208
7.11.2.13	df_Start	209
7.11.2.14	df_Thread	209
7.11.2.15	request_handler_DEREGISTER	209
7.11.2.16	request_handler_REGISTER	209
7.11.2.17	request_handler_SEARCH	209
7.11.2.18	request_handler_SUBSCRIBE	209
7.12	/home/dko/Projects/mobilec/src/dynstring.c File Reference	210
7.12.1	Function Documentation	210
7.12.1.1	dynstring_Append	210
7.12.1.2	dynstring_Destroy	210
7.12.1.3	dynstring_New	210
7.13	/home/dko/Projects/mobilec/src/fipa_acl.c File Reference	211
7.13.1	Define Documentation	212
7.13.1.1	FREEMEM	212
7.13.2	Function Documentation	213
7.13.2.1	fipa_acl_Compose	213
7.13.2.2	fipa_acl_message_Copy	213
7.13.2.3	fipa_acl_message_Destroy	213
7.13.2.4	fipa_acl_message_New	213
7.13.2.5	fipa_acl_Parse	213
7.13.2.6	fipa_agent_identifier_Compose	214
7.13.2.7	fipa_agent_identifier_Copy	214
7.13.2.8	fipa_agent_identifier_Destroy	214
7.13.2.9	fipa_agent_identifier_New	214

7.13.2.10 fipa_agent_identifier_Parse	214
7.13.2.11 fipa_agent_identifier_set_Compose	215
7.13.2.12 fipa_agent_identifier_set_Copy	215
7.13.2.13 fipa_agent_identifier_set_Destroy	215
7.13.2.14 fipa_agent_identifier_set_New	215
7.13.2.15 fipa_agent_identifier_set_Parse	215
7.13.2.16 fipa_CheckNextToken	215
7.13.2.17 fipa_DateTime_Compose	216
7.13.2.18 fipa_DateTime_Copy	216
7.13.2.19 fipa_DateTime_Destroy	216
7.13.2.20 fipa_DateTime_New	216
7.13.2.21 fipa_datetime_Parse	216
7.13.2.22 fipa_expression_Compose	216
7.13.2.23 fipa_expression_Copy	217
7.13.2.24 fipa_expression_Destroy	217
7.13.2.25 fipa_expression_New	217
7.13.2.26 fipa_expression_Parse	217
7.13.2.27 fipa_GetAtom	217
7.13.2.28 fipa_GetNextWord	217
7.13.2.29 fipa_GetWholeToken	218
7.13.2.30 fipa_message_parameter_Parse	218
7.13.2.31 fipa_message_string_Copy	218
7.13.2.32 fipa_message_string_Destroy	218
7.13.2.33 fipa_message_string_New	218
7.13.2.34 fipa_message_type_Parse	218
7.13.2.35 fipa_number_Compose	219
7.13.2.36 fipa_number_Copy	219
7.13.2.37 fipa_number_Destroy	219
7.13.2.38 fipa_number_New	219
7.13.2.39 fipa_performative_Compose	219
7.13.2.40 fipa_protocol_Compose	219
7.13.2.41 fipa_protocol_type_Parse	220
7.13.2.42 fipa_Reply	220
7.13.2.43 fipa_string_Compose	220
7.13.2.44 fipa_string_Copy	220
7.13.2.45 fipa_string_Destroy	220

7.13.2.46 fipa_string_New	221
7.13.2.47 fipa_string_Parse	221
7.13.2.48 fipa_url_Compose	221
7.13.2.49 fipa_url_Copy	221
7.13.2.50 fipa_url_Destroy	221
7.13.2.51 fipa_url_New	221
7.13.2.52 fipa_url_Parse	221
7.13.2.53 fipa_url_sequence_Compose	222
7.13.2.54 fipa_url_sequence_Copy	222
7.13.2.55 fipa_url_sequence_Destroy	222
7.13.2.56 fipa_url_sequence_New	222
7.13.2.57 fipa_url_sequence_Parse	222
7.13.2.58 fipa_word_Compose	222
7.13.2.59 fipa_word_Copy	222
7.13.2.60 fipa_word_Destroy	223
7.13.2.61 fipa_word_New	223
7.13.2.62 fipa_word_Parse	223
7.14 /home/dko/Projects/mobilec/src/fipa_envelope.c File Reference	224
7.14.1 Function Documentation	225
7.14.1.1 fipa_acl_envelope_Copy	225
7.14.1.2 fipa_acl_envelope_Destroy	225
7.14.1.3 fipa_acl_envelope_New	225
7.14.1.4 fipa_acl_envelope_Received_Copy	225
7.14.1.5 fipa_acl_envelope_Received_Destroy	225
7.14.1.6 fipa_acl_envelope_Received_New	226
7.14.1.7 fipa_acl_Param_Copy	226
7.14.1.8 fipa_acl_Param_Destroy	226
7.14.1.9 fipa_acl_Param_New	226
7.14.1.10 fipa_envelope_Compose	226
7.14.1.11 fipa_envelope_Compose_acl_representation	227
7.14.1.12 fipa_envelope_Compose_date	227
7.14.1.13 fipa_envelope_Compose_envelope	227
7.14.1.14 fipa_envelope_Compose_from	227
7.14.1.15 fipa_envelope_Compose_intended_receiver	227
7.14.1.16 fipa_envelope_Compose_params	227
7.14.1.17 fipa_envelope_Compose_payload_encoding	228

7.14.1.18 fipa_envelope_Compose_to	228
7.14.1.19 fipa_envelope_HandleAclRepresentation	228
7.14.1.20 fipa_envelope_HandleComments	228
7.14.1.21 fipa_envelope_HandleDate	228
7.14.1.22 fipa_envelope_HandleEnvelope	229
7.14.1.23 fipa_envelope_HandleFrom	229
7.14.1.24 fipa_envelope_HandleIntendedReceiver	229
7.14.1.25 fipa_envelope_HandleParams	229
7.14.1.26 fipa_envelope_HandlePayloadEncoding	229
7.14.1.27 fipa_envelope_HandlePayloadLength	230
7.14.1.28 fipa_envelope_HandleReceived	230
7.14.1.29 fipa_envelope_HandleTo	230
7.14.1.30 fipa_envelope_Parse	230
7.14.1.31 fipa_envelope_ParseAddresses	230
7.14.1.32 fipa_envelope_ParseAgentIdentifier	231
7.14.1.33 fipa_envelope_ParseResolvers	231
7.15 /home/dko/Projects/mobilec/src/include/acc.h File Reference	232
7.15.1 Function Documentation	232
7.15.1.1 acc_connection_Thread	232
7.15.1.2 acc_Destroy	233
7.15.1.3 acc_MessageHandlerThread	233
7.15.1.4 acc_Start	233
7.15.1.5 acc_Thread	233
7.15.1.6 listen_Thread	233
7.15.1.7 STRUCT	234
7.15.1.8 STRUCT	234
7.15.1.9 udplisten_Thread	234
7.15.2 Variable Documentation	234
7.15.2.1 addr	234
7.15.2.2 client_fd	234
7.15.2.3 port	234
7.15.2.4 server_fd	234
7.16 /home/dko/Projects/mobilec/src/include/agent.h File Reference	235
7.16.1 Typedef Documentation	235
7.16.1.1 agent_p	235
7.16.1.2 agent_t	235

7.16.1.3	MCAGent_t	235
7.16.2	Function Documentation	236
7.16.2.1	agent_AddPersistentVariable	236
7.16.2.2	agent_ChScriptInitVar	236
7.16.2.3	agent_CmpID	236
7.16.2.4	agent_CmpName	236
7.16.2.5	agent_Copy	237
7.16.2.6	agent_Destroy	237
7.16.2.7	agent_Initialize	237
7.16.2.8	agent_New	238
7.16.2.9	agent_NewBinary	238
7.16.2.10	agent_Print	238
7.16.2.11	agent_RunChScript	238
7.16.2.12	agent_RunChScriptThread	238
7.17	/home/dko/Projects/mobilec/src/include/agent_datastate.h File Reference	239
7.17.1	Typedef Documentation	239
7.17.1.1	agent_datastate_p	239
7.17.1.2	agent_datastate_t	239
7.17.2	Function Documentation	239
7.17.2.1	agent_datastate_Copy	239
7.17.2.2	agent_datastate_Destroy	239
7.17.2.3	agent_datastate_New	240
7.18	/home/dko/Projects/mobilec/src/include/agent_file_data.h File Reference	241
7.18.1	Typedef Documentation	241
7.18.1.1	agent_file_data_p	241
7.18.1.2	agent_file_data_t	241
7.18.2	Function Documentation	241
7.18.2.1	agent_file_data_CmpName	241
7.18.2.2	agent_file_data_Copy	241
7.18.2.3	agent_file_data_Destroy	242
7.18.2.4	agent_file_data_Encode	242
7.18.2.5	agent_file_data_InitializeFromFilename	242
7.18.2.6	agent_file_data_New	242
7.18.2.7	agent_file_data_NewWithData	242
7.18.2.8	agent_file_data_SaveToFile	242
7.19	/home/dko/Projects/mobilec/src/include/agent_lib.h File Reference	243

7.19.1.1 MC_AclAddReceiver_chdl	244
7.19.1.2 MC_AclAddReplyTo_chdl	244
7.19.1.3 MC_AclDestroy_chdl	244
7.19.1.4 MC_AclGetContent_chdl	245
7.19.1.5 MC_AclGetConversationID_chdl	245
7.19.1.6 MC_AclGetPerformative_chdl	245
7.19.1.7 MC_AclGetProtocol_chdl	245
7.19.1.8 MC_AclGetSender_chdl	245
7.19.1.9 MC_AclNew_chdl	245
7.19.1.10 MC_AclPost_chdl	245
7.19.1.11 MC_AclReply_chdl	246
7.19.1.12 MC_AclRetrieve_chdl	246
7.19.1.13 MC_AclSend_chdl	246
7.19.1.14 MC_AclSetContent_chdl	246
7.19.1.15 MC_AclSetConversationID_chdl	246
7.19.1.16 MC_AclSetPerformative_chdl	246
7.19.1.17 MC_AclSetProtocol_chdl	246
7.19.1.18 MC_AclSetSender_chdl	247
7.19.1.19 MC_AclWaitRetrieve_chdl	247
7.19.1.20 MC_AddAgent_chdl	247
7.19.1.21 MC_AgentAddTask_chdl	247
7.19.1.22 MC_AgentAttachFile_chdl	247
7.19.1.23 MC_AgentListFiles_chdl	247
7.19.1.24 MC_AgentRetrieveFile_chdl	247
7.19.1.25 MC_AgentVariableRetrieve_chdl	248
7.19.1.26 MC_AgentVariableSave_chdl	248
7.19.1.27 MC_BARRIER_chdl	248
7.19.1.28 MC_BarrierDelete_chdl	248
7.19.1.29 MC_BarrierInit_chdl	248
7.19.1.30 MC_CallAgentFunc_chdl	248
7.19.1.31 MC_ComposeAgent_chdl	248
7.19.1.32 MC_ComposeAgentFromFile_chdl	249
7.19.1.33 MC_ComposeAgentFromFileWithWorkgroup_chdl	249
7.19.1.34 MC_ComposeAgentWithWorkgroup_chdl	249
7.19.1.35 MC_CondBroadcast_chdl	249

7.19.1.36 MC_CondReset_chdl	249
7.19.1.37 MC_CondSignal_chdl	249
7.19.1.38 MC_CondWait_chdl	249
7.19.1.39 MC_DeleteAgent_chdl	250
7.19.1.40 MC_DeleteAgentWG_chdl	250
7.19.1.41 MC_DeregisterService_chdl	250
7.19.1.42 MC_DestroyServiceSearchResult_chdl	250
7.19.1.43 MC_End_chdl	250
7.19.1.44 MC_FindAgentByID_chdl	250
7.19.1.45 MC_FindAgentByName_chdl	250
7.19.1.46 MC_GetAgentID_chdl	251
7.19.1.47 MC_GetAgentName_chdl	251
7.19.1.48 MC_GetAgentNumTasks_chdl	251
7.19.1.49 MC_GetAgentStatus_chdl	251
7.19.1.50 MC_GetAgentXMLString_chdl	251
7.19.1.51 MC_GetTimeOfDay_chdl	251
7.19.1.52 MC_HaltAgency_chdl	251
7.19.1.53 MC_MigrateAgent_chdl	251
7.19.1.54 MC_MutexLock_chdl	252
7.19.1.55 MC_MutexUnlock_chdl	252
7.19.1.56 MC_PrintAgentCode_chdl	252
7.19.1.57 MC_RegisterService_chdl	252
7.19.1.58 MC_ResumeAgency_chdl	252
7.19.1.59 MC_RetrieveAgent_chdl	252
7.19.1.60 MC_RetrieveAgentCode_chdl	252
7.19.1.61 MC_SaveData_chdl	253
7.19.1.62 MC_SearchForService_chdl	253
7.19.1.63 MC_SemaphorePost_chdl	253
7.19.1.64 MC_SemaphoreWait_chdl	253
7.19.1.65 MC_SendAgentMigrationMessage_chdl	253
7.19.1.66 MC_SendAgentMigrationMessageFile_chdl	253
7.19.1.67 MC_SendSteerCommand_chdl	254
7.19.1.68 MC_SetAgentStatus_chdl	254
7.19.1.69 MC_SetDefaultAgentStatus_chdl	254
7.19.1.70 MC_SyncDelete_chdl	254
7.19.1.71 MC_SyncInit_chdl	254

7.19.1.72 MC_TerminateAgent_chdl	254
7.19.1.73 MC_TerminateAgentWG_chdl	254
7.20 /home/dko/Projects/mobilec/src/include/agent_task.h File Reference	255
7.20.1 Typedef Documentation	255
7.20.1.1 agent_task_p	255
7.20.1.2 agent_task_t	255
7.20.2 Function Documentation	255
7.20.2.1 agent_task_Copy	255
7.20.2.2 agent_task_Destroy	255
7.20.2.3 agent_task_New	256
7.21 /home/dko/Projects/mobilec/src/include/ams.h File Reference	257
7.21.1 Function Documentation	257
7.21.1.1 ams_Destroy	257
7.21.1.2 ams_ManageAgentList	257
7.21.1.3 ams_Print	257
7.21.1.4 ams_RemoveFinishedAgents	258
7.21.1.5 ams_Start	258
7.21.1.6 ams_Thread	258
7.21.1.7 STRUCT	258
7.22 /home/dko/Projects/mobilec/src/include/barrier.h File Reference	259
7.22.1 Typedef Documentation	259
7.22.1.1 barrier_node_p	259
7.22.1.2 barrier_node_t	259
7.22.1.3 barrier_queue_p	259
7.22.1.4 barrier_queue_t	259
7.22.2 Function Documentation	259
7.22.2.1 barrier_node_CmpID	259
7.22.2.2 barrier_node_Destroy	260
7.22.2.3 barrier_node_Initialize	260
7.23 /home/dko/Projects/mobilec/src/include/cmd_prompt.h File Reference	261
7.23.1 Define Documentation	261
7.23.1.1 CMDLINE_SIZE	261
7.23.2 Typedef Documentation	261
7.23.2.1 cmd_prompt_p	261
7.23.2.2 cmd_prompt_t	262
7.23.2.3 command_p	262

7.23.2.4	command_t	262
7.23.3	Function Documentation	262
7.23.3.1	cmd_prompt_Destroy	262
7.23.3.2	cmd_prompt_Initialize	262
7.23.3.3	cmd_prompt_Start	262
7.23.3.4	cmd_prompt_Thread	262
7.23.3.5	dealloc_command	262
7.23.3.6	exec_command	262
7.23.3.7	process_command	262
7.23.3.8	split_string	262
7.24	/home/dko/Projects/mobilec/src/include/commands.h File Reference	263
7.24.1	Define Documentation	263
7.24.1.1	COMMAND	263
7.24.1.2	COMMAND	264
7.24.1.3	COMMAND	264
7.24.1.4	COMMAND	264
7.24.1.5	COMMAND	264
7.24.2	Typedef Documentation	264
7.24.2.1	cmd_handler_t	264
7.24.3	Enumeration Type Documentation	264
7.24.3.1	command_indices_e	264
7.24.4	Function Documentation	264
7.24.4.1	COMMAND	264
7.24.4.2	COMMAND	264
7.24.4.3	COMMAND	265
7.24.5	Variable Documentation	265
7.24.5.1	cmd_handlers	265
7.24.5.2	command_cmds	265
7.24.5.3	command_descriptions	265
7.25	/home/dko/Projects/mobilec/src/include/commands.x.h File Reference	266
7.25.1	Function Documentation	266
7.25.1.1	COMMAND	266
7.25.1.2	COMMAND	266
7.25.1.3	COMMAND	267
7.25.2	Variable Documentation	267
7.25.2.1	compose_send	267

7.25.2.2	help	267
7.25.2.3	is	267
7.25.2.4	print_connectlist	267
7.25.2.5	printlist_agents	267
7.25.2.6	send	267
7.26	/home/dko/Projects/mobilec/src/include/connection.h File Reference	268
7.26.1	Typedef Documentation	268
7.26.1.1	connection_p	268
7.26.1.2	connection_t	268
7.26.2	Function Documentation	268
7.26.2.1	connection_Close	268
7.26.2.2	connection_Copy	268
7.26.2.3	connection_CreateMessage	269
7.26.2.4	connection_Destroy	269
7.26.2.5	connection_New	269
7.26.2.6	connection_Print	269
7.26.2.7	connection_RecvFromConnection	269
7.26.2.8	connection_SendtoConnection	269
7.26.2.9	connection_SetHosts	269
7.27	/home/dko/Projects/mobilec/src/include/df.h File Reference	270
7.27.1	Define Documentation	271
7.27.1.1	REQUEST	271
7.27.1.2	REQUEST	271
7.27.2	Enumeration Type Documentation	271
7.27.2.1	df_request_list_index_e	271
7.27.2.2	service_types_e	271
7.27.3	Function Documentation	272
7.27.3.1	df_Add	272
7.27.3.2	df_AddRequest	272
7.27.3.3	df_Destroy	272
7.27.3.4	df_Initialize	272
7.27.3.5	df_node_Destroy	272
7.27.3.6	df_ProcessRequest	272
7.27.3.7	df_request_list_Destroy	272
7.27.3.8	df_request_list_node_Destroy	273
7.27.3.9	df_request_list_node_New	273

7.27.3.10 df_request_search_Destroy	273
7.27.3.11 df_request_search_New	273
7.27.3.12 df_SearchForService	273
7.27.3.13 df_Start	273
7.27.3.14 df_Thread	273
7.27.3.15 REQUEST	274
7.27.3.16 REQUEST	274
7.27.3.17 STRUCT	274
7.27.3.18 STRUCT	274
7.27.3.19 STRUCT	274
7.27.4 Variable Documentation	274
7.27.4.1 agent_id	274
7.27.4.2 agent_ids	274
7.27.4.3 agent_name	274
7.27.4.4 agent_names	274
7.27.4.5 lock	274
7.27.4.6 num_results	274
7.27.4.7 num_services	275
7.27.4.8 service_name	275
7.27.4.9 service_names	275
7.27.4.10 service_types	275
7.28 /home/dko/Projects/mobilec/src/include/df_request.x.h File Reference	276
7.28.1 Function Documentation	276
7.28.1.1 REQUEST	276
7.28.1.2 REQUEST	276
7.28.2 Variable Documentation	276
7.28.2.1 register	276
7.28.2.2 search	276
7.29 /home/dko/Projects/mobilec/src/include/dynstring.h File Reference	277
7.29.1 Define Documentation	277
7.29.1.1 COMPOSE_BLOCKSIZE	277
7.29.2 Typedef Documentation	277
7.29.2.1 dynstring_p	277
7.29.2.2 dynstring_t	277
7.29.3 Function Documentation	277
7.29.3.1 dynstring_Append	277

7.29.3.2	dynstring_Destroy	278
7.29.3.3	dynstring_New	278
7.30	/home/dko/Projects/mobilec/src/include/fipa_acl.h File Reference	279
7.30.1	Typedef Documentation	282
7.30.1.1	fipa_acl_message_p	282
7.30.1.2	fipa_acl_message_t	282
7.30.1.3	fipa_agent_identifier_p	282
7.30.1.4	fipa_agent_identifier_set_p	282
7.30.1.5	fipa_agent_identifier_set_t	282
7.30.1.6	fipa_agent_identifier_t	282
7.30.1.7	fipa_DateTime_p	282
7.30.1.8	fipa_DateTime_t	282
7.30.1.9	fipa_expression_p	282
7.30.1.10	fipa_expression_t	282
7.30.1.11	fipa_expression_type_t	282
7.30.1.12	fipa_message_string_p	282
7.30.1.13	fipa_message_string_t	282
7.30.1.14	fipa_number_p	282
7.30.1.15	fipa_number_t	282
7.30.1.16	fipa_string_p	282
7.30.1.17	fipa_string_t	283
7.30.1.18	fipa_url_p	283
7.30.1.19	fipa_url_sequence_p	283
7.30.1.20	fipa_url_sequence_t	283
7.30.1.21	fipa_url_t	283
7.30.1.22	fipa_word_p	283
7.30.1.23	fipa_word_t	283
7.30.2	Enumeration Type Documentation	283
7.30.2.1	fipa_expression_type_e	283
7.30.2.2	fipa_performative_e	283
7.30.2.3	fipa_protocol_e	285
7.30.3	Function Documentation	285
7.30.3.1	fipa_acl_Compose	285
7.30.3.2	fipa_acl_message_Copy	285
7.30.3.3	fipa_acl_message_Destroy	286
7.30.3.4	fipa_acl_message_New	286

7.30.3.5 fipa_acl_Parse	286
7.30.3.6 fipa_agent_identifier_Compose	286
7.30.3.7 fipa_agent_identifier_Copy	286
7.30.3.8 fipa_agent_identifier_Destroy	286
7.30.3.9 fipa_agent_identifier_New	286
7.30.3.10 fipa_agent_identifier_Parse	287
7.30.3.11 fipa_agent_identifier_set_Compose	287
7.30.3.12 fipa_agent_identifier_set_Copy	287
7.30.3.13 fipa_agent_identifier_set_Destroy	287
7.30.3.14 fipa_agent_identifier_set_New	287
7.30.3.15 fipa_agent_identifier_set_Parse	288
7.30.3.16 fipa_CheckNextToken	288
7.30.3.17 fipa_DateTime_Compose	288
7.30.3.18 fipa_DateTime_Copy	288
7.30.3.19 fipa_DateTime_Destroy	288
7.30.3.20 fipa_DateTime_New	288
7.30.3.21 fipa_datetime_Parse	288
7.30.3.22 fipa_expression_Compose	289
7.30.3.23 fipa_expression_Copy	289
7.30.3.24 fipa_expression_Destroy	289
7.30.3.25 fipa_expression_New	289
7.30.3.26 fipa_expression_Parse	290
7.30.3.27 fipa_GetAtom	290
7.30.3.28 fipa_GetNextWord	290
7.30.3.29 fipa_GetWholeToken	290
7.30.3.30 fipa_message_parameter_Parse	290
7.30.3.31 fipa_message_string_Copy	290
7.30.3.32 fipa_message_string_Destroy	290
7.30.3.33 fipa_message_string_New	290
7.30.3.34 fipa_message_type_Parse	291
7.30.3.35 fipa_number_Compose	291
7.30.3.36 fipa_number_Copy	291
7.30.3.37 fipa_number_Destroy	291
7.30.3.38 fipa_number_New	291
7.30.3.39 fipa_performative_Compose	291
7.30.3.40 fipa_protocol_Compose	292

7.30.3.41 fipa_protocol_type_Parse	292
7.30.3.42 fipa_Reply	292
7.30.3.43 fipa_string_Compose	292
7.30.3.44 fipa_string_Copy	293
7.30.3.45 fipa_string_Destroy	293
7.30.3.46 fipa_string_New	293
7.30.3.47 fipa_string_Parse	293
7.30.3.48 fipa_url_Compose	293
7.30.3.49 fipa_url_Copy	293
7.30.3.50 fipa_url_Destroy	293
7.30.3.51 fipa_url_New	294
7.30.3.52 fipa_url_Parse	294
7.30.3.53 fipa_url_sequence_Compose	294
7.30.3.54 fipa_url_sequence_Copy	294
7.30.3.55 fipa_url_sequence_Destroy	294
7.30.3.56 fipa_url_sequence_New	294
7.30.3.57 fipa_url_sequence_Parse	294
7.30.3.58 fipa_word_Compose	295
7.30.3.59 fipa_word_Copy	295
7.30.3.60 fipa_word_Destroy	295
7.30.3.61 fipa_word_New	295
7.30.3.62 fipa_word_Parse	295
7.31 /home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h File Reference	296
7.31.1 Typedef Documentation	297
7.31.1.1 fipa_acl_envelope_p	297
7.31.1.2 fipa_acl_envelope_Received_t	297
7.31.1.3 fipa_acl_envelope_t	297
7.31.1.4 fipa_acl_Param_t	297
7.31.2 Function Documentation	297
7.31.2.1 fipa_acl_envelope_Copy	297
7.31.2.2 fipa_acl_envelope_Destroy	297
7.31.2.3 fipa_acl_envelope_New	298
7.31.2.4 fipa_acl_envelope_Received_Copy	298
7.31.2.5 fipa_acl_envelope_Received_Destroy	298
7.31.2.6 fipa_acl_envelope_Received_New	298
7.31.2.7 fipa_acl_Param_Copy	298

7.31.2.8 fipa_acl_Param_Destroy	298
7.31.2.9 fipa_acl_Param_New	299
7.31.2.10 fipa_envelope_Compose	299
7.31.2.11 fipa_envelope_Compose_acl_representation	299
7.31.2.12 fipa_envelope_Compose_date	299
7.31.2.13 fipa_envelope_Compose_envelope	299
7.31.2.14 fipa_envelope_Compose_from	299
7.31.2.15 fipa_envelope_Compose_intended_receiver	300
7.31.2.16 fipa_envelope_Compose_params	300
7.31.2.17 fipa_envelope_Compose_payload_encoding	300
7.31.2.18 fipa_envelope_Compose_to	300
7.31.2.19 fipa_envelope_HandleAclRepresentation	300
7.31.2.20 fipa_envelope_HandleComments	301
7.31.2.21 fipa_envelope_HandleDate	301
7.31.2.22 fipa_envelope_HandleEnvelope	301
7.31.2.23 fipa_envelope_HandleFrom	301
7.31.2.24 fipa_envelope_HandleIntendedReceiver	301
7.31.2.25 fipa_envelope_HandleParams	302
7.31.2.26 fipa_envelope_HandlePayloadEncoding	302
7.31.2.27 fipa_envelope_HandlePayloadLength	302
7.31.2.28 fipa_envelope_HandleReceived	302
7.31.2.29 fipa_envelope_HandleTo	302
7.31.2.30 fipa_envelope_Parse	303
7.31.2.31 fipa_envelope_ParseAddresses	303
7.31.2.32 fipa_envelope_ParseAgentIdentifier	303
7.31.2.33 fipa_envelope_ParseResolvers	303
7.32 /home/dko/Projects/mobilec/src/include/fipa_comm.h File Reference	304
7.32.1 Define Documentation	306
7.32.1.1 false	306
7.32.1.2 MC_NUM_PERFORMATIVES	306
7.32.2 Typedef Documentation	306
7.32.2.1 fipa_comm_action_p	306
7.32.2.2 fipa_comm_action_s	306
7.32.2.3 fipa_comm_callback	306
7.32.2.4 fipa_comm_message_check_p	306
7.32.2.5 fipa_comm_message_check_s	306

7.32.2.6 fipa_comm_p	306
7.32.2.7 fipa_comm_performative_p	306
7.32.2.8 fipa_comm_performative_s	307
7.32.2.9 fipa_comm_protocol_cn_p	307
7.32.2.10 fipa_comm_protocol_cn_s	307
7.32.2.11 fipa_comm_protocol_p	307
7.32.2.12 fipa_comm_protocol_s	307
7.32.2.13 fipa_comm_reply_p	307
7.32.2.14 fipa_comm_reply_s	307
7.32.2.15 fipa_comm_s	307
7.32.2.16 fipa_list_p	307
7.32.2.17 fipa_list_s	307
7.32.2.18 MCFIPAComm_p	307
7.32.2.19 MCFIPAComm_s	308
7.32.2.20 protocol_contract_net_callback	308
7.32.3 Enumeration Type Documentation	308
7.32.3.1 fipa_comm_action_type_e	308
7.32.3.2 fipa_comm_check_type_e	308
7.32.3.3 fipa_comm_logic_type_e	308
7.32.3.4 fipa_comm_protocol_cn_state_e	309
7.32.3.5 fipa_comm_type_e	309
7.32.4 Function Documentation	311
7.32.4.1 fipa_comm_protocol_info_COPY	311
7.32.4.2 fipa_list_Add	311
7.32.4.3 mc_FIPAComm_AddNewProtocol	311
7.32.4.4 mc_FIPAComm_DeregisterPerformative	311
7.32.4.5 mc_FIPAComm_Destroy	311
7.32.4.6 mc_FIPAComm_FSM_CN	311
7.32.4.7 mc_FIPAComm_HandleMessage	311
7.32.4.8 mc_FIPAComm_HandleMessageOnce	311
7.32.4.9 mc_FIPAComm_HandleMessageWait	311
7.32.4.10 mc_FIPAComm_HandleProtocol	311
7.32.4.11 mc_FIPAComm_New	311
7.32.4.12 mc_FIPAComm_NewProtocol	311
7.32.4.13 mc_FIPAComm_RegisterAction	311
7.32.4.14 mc_FIPAComm_RegisterActionS	311

7.32.4.15 mc_FIPAComm_RegisterPerformative	311
7.32.4.16 mc_FIPAComm_RegisterProtocol	311
7.32.4.17 mc_FIPAComm_RegisterProtocolCallback	311
7.32.4.18 mc_FIPAComm_SetAgent	311
7.32.4.19 mc_FIPAComm_SetDefaultReply	311
7.32.4.20 mc_FIPAComm_SetPerformativeDefaultReply	311
7.32.4.21 mc_FIPAComm_SetProtocolState	311
7.32.4.22 mc_FIPAComm_StartProtocol	311
7.32.4.23 mc_FIPAProtocol_New	311
7.33 /home/dko/Projects/mobilec/src/include/host_id.h File Reference	312
7.33.1 Typedef Documentation	312
7.33.1.1 host_id_p	312
7.33.1.2 host_id_t	312
7.33.2 Function Documentation	312
7.33.2.1 host_id_Compare	312
7.33.2.2 host_id_Destroy	312
7.33.2.3 host_id_Initialize	312
7.34 /home/dko/Projects/mobilec/src/include/interpreter_variable_data.h File Reference	313
7.34.1 Typedef Documentation	313
7.34.1.1 interpreter_variable_data_p	313
7.34.1.2 interpreter_variable_data_t	313
7.34.2 Function Documentation	313
7.34.2.1 interpreter_variable_data_CmpName	313
7.34.2.2 interpreter_variable_data_Copy	314
7.34.2.3 interpreter_variable_data_Destroy	314
7.34.2.4 interpreter_variable_data_Initialize	314
7.34.2.5 interpreter_variable_data_InitializeFromAgent	314
7.34.2.6 interpreter_variable_data_New	314
7.35 /home/dko/Projects/mobilec/src/include/libmc.h File Reference	315
7.35.1 Detailed Description	324
7.35.2 Define Documentation	324
7.35.2.1 _ERROR_CODE_E_	324
7.35.2.2 _FIPA_PERFORMATIVE_E_	324
7.35.2.3 AGENT_T	324
7.35.2.4 EXPORTMC	324
7.35.2.5 MC_INITIALIZED_CODE	324

7.35.2.6 MC_Wait	324
7.35.3 Typedef Documentation	325
7.35.3.1 agency_p	325
7.35.3.2 agency_t	325
7.35.3.3 agent_p	325
7.35.3.4 agent_t	325
7.35.3.5 error_code_t	325
7.35.3.6 MC_AgentInitCallbackFunc_t	325
7.35.3.7 MC_SteerCommand_t	325
7.35.3.8 MCAgency_t	325
7.35.3.9 MCAgencyOptions_t	325
7.35.3.10 MCAgent_t	325
7.35.3.11 stationary_agent_info_t	326
7.35.4 Enumeration Type Documentation	326
7.35.4.1 error_code_e	326
7.35.4.2 fipa_performative_e	326
7.35.4.3 MC_AgentStatus_e	328
7.35.4.4 MC_AgentType_e	328
7.35.4.5 MC_QueueIndex_e	328
7.35.4.6 MC_Signal_e	328
7.35.4.7 MC_SteerCommand_e	329
7.35.4.8 MC_ThreadIndex_e	329
7.35.5 Function Documentation	330
7.35.5.1 MC_AclAddReceiver	330
7.35.5.2 MC_AclAddReplyTo	330
7.35.5.3 MC_AclDestroy	330
7.35.5.4 MC_AclGetContent	330
7.35.5.5 MC_AclGetConversationID	330
7.35.5.6 MC_AclGetPerformative	331
7.35.5.7 MC_AclGetProtocol	331
7.35.5.8 MC_AclGetSender	331
7.35.5.9 MC_AclNew	331
7.35.5.10 MC_AclPost	331
7.35.5.11 MC_AclReply	332
7.35.5.12 MC_AclRetrieve	332
7.35.5.13 MC_AclSend	332

7.35.5.14 MC_AclSetContent	333
7.35.5.15 MC_AclSetConversationID	333
7.35.5.16 MC_AclSetPerformative	333
7.35.5.17 MC_AclSetProtocol	333
7.35.5.18 MC_AclSetSender	334
7.35.5.19 MC_AclWaitRetrieve	334
7.35.5.20 MC_AddAgent	334
7.35.5.21 MC_AddAgentInitCallback	335
7.35.5.22 MC_AddStationaryAgent	335
7.35.5.23 MC_AgentAddTask	335
7.35.5.24 MC_AgentAddTaskFromFile	336
7.35.5.25 MC_AgentAttachFile	336
7.35.5.26 MC_AgentInfo_GetAgency	337
7.35.5.27 MC_AgentInfo_GetAgent	337
7.35.6 Examples	337
7.35.6.1 MC_AgentInfo_GetAgentArgs	337
7.35.6.2 MC_AgentListFiles	338
7.35.6.3 MC_AgentProcessingBegin	338
7.35.6.4 MC_AgentProcessingEnd	338
7.35.6.5 MC_AgentRetrieveFile	339
7.35.6.6 MC_AgentReturnArrayDim	339
7.35.6.7 MC_AgentReturnArrayExtent	339
7.35.6.8 MC_AgentReturnArrayNum	340
7.35.6.9 MC_AgentReturnDataGetSymbolAddr	340
7.35.6.10 MC_AgentReturnDataSize	340
7.35.6.11 MC_AgentReturnDataType	341
7.35.6.12 MC_AgentReturnIsArray	341
7.35.6.13 MC_AgentVariableRetrieve	341
7.35.7 Examples	342
7.35.7.1 MC_AgentVariableRetrieveInfo	342
7.35.7.2 MC_AgentVariableSave	342
7.35.8 Examples	343
7.35.9 Examples	343
7.35.9.1 MC_Barrier	343
7.35.9.2 MC_BarrierDelete	343
7.35.9.3 MC_BarrierInit	343

7.35.10 Examples	344
7.35.10.1 MC_CallAgentFunc	344
7.35.11 Example	344
7.35.11.1 MC_CallAgentFuncArg	345
7.35.12 Example	345
7.35.12.1 MC_CallAgentFuncV	345
7.35.12.2 MC_CallAgentFuncVar	345
7.35.12.3 MC_ComposeAgent	346
7.35.12.4 MC_ComposeAgentFromFile	346
7.35.12.5 MC_ComposeAgentFromFileS	347
7.35.12.6 MC_ComposeAgentFromFileWithWorkgroup	347
7.35.12.7 MC_ComposeAgentS	348
7.35.12.8 MC_ComposeAgentWithWorkgroup	349
7.35.12.9 MC_CondBroadcast	349
7.35.12.10 MC_CondReset	350
7.35.12.11 MC_CondSignal	350
7.35.13 Example	351
7.35.13.1 MC_CondWait	351
7.35.14 Example	351
7.35.14.1 MC_CopyAgent	351
7.35.14.2 MC_DeleteAgent	352
7.35.14.3 MC_DeleteAgentWG	352
7.35.14.4 MC_DestroyServiceSearchResult	353
7.35.14.5 MC_End	353
7.35.15 Example	353
7.35.15.1 MC_FindAgentByID	353
7.35.15.2 MC_FindAgentByName	354
7.35.16 Example	354
7.35.16.1 MC_GetAgentExecEngine	354
7.35.16.2 MC_GetAgentID	355
7.35.16.3 MC_GetAgentName	355
7.35.16.4 MC_GetAgentNumTasks	355
7.35.17 Example	355
7.35.17.1 MC_GetAgentReturnData	355
7.35.18 Example	355
7.35.18.1 MC_GetAgents	356

7.35.18.2 MC_GetAgentStatus	356
7.35.18.3 MC_GetAgentType	356
7.35.18.4 MC_GetAgentXMLString	357
7.35.18.5 MC_GetAllAgents	357
7.35.18.6 MC_GetNumAgents	357
7.35.18.7 MC_HaltAgency	357
7.35.18.8 MC_Initialize	358
7.35.19 Example	358
7.35.19.1 MC_InitializeAgencyOptions	358
7.35.20 Example	359
7.35.20.1 MC_LoadAgentFromFile	359
7.35.20.2 MC_MainLoop	359
7.35.20.3 MC_MigrateAgent	359
7.35.20.4 MC_MutexLock	360
7.35.21 Example	360
7.35.21.1 MC_MutexUnlock	360
7.35.21.2 MC_PrintAgentCode	361
7.35.21.3 MC_QueueRDLock	361
7.35.21.4 MC_QueueRDUnlock	361
7.35.21.5 MC_QueueWRLock	361
7.35.21.6 MC_QueueWRUnlock	361
7.35.21.7 MC_RegisterService	361
7.35.22 Example	362
7.35.22.1 MC_ResetSignal	362
7.35.22.2 MC_ResumeAgency	362
7.35.22.3 MC_RetrieveAgent	363
7.35.22.4 MC_RetrieveAgentCode	363
7.35.22.5 MC_SearchForService	363
7.35.23 Example	364
7.35.23.1 MC_SemaphorePost	364
7.35.24 Example	364
7.35.24.1 MC_SemaphoreWait	364
7.35.25 Example	365
7.35.25.1 MC_SendAgent	365
7.35.25.2 MC_SendAgentFile	365
7.35.25.3 MC_SendAgentMigrationMessage	366

7.35.25.4 MC_SendAgentMigrationMessageFile	366
7.35.25.5 MC_SetAgentStatus	366
7.35.25.6 MC_SetDefaultAgentStatus	367
7.35.25.7 MC_SetThreadOff	367
7.35.25.8 MC_SetThreadOn	368
7.35.25.9 MC_SetThreadsAllOff	368
7.35.25.10 MC_SetThreadsAllOn	368
7.35.25.11 MC_Steer	369
7.35.26 Example	369
7.35.26.1 MC_SteerControl	369
7.35.26.2 MC_SyncDelete	369
7.35.26.3 MC_SyncInit	370
7.35.26.4 MC_TerminateAgent	370
7.35.26.5 MC_TerminateAgentWG	371
7.35.26.6 MC_WaitAgent	371
7.35.26.7 MC_WaitRetrieveAgent	371
7.35.26.8 MC_WaitSignal	371
7.35.27 Example	372
7.36 /home/dko/Projects/mobilec/src/include/macros.h File Reference	373
7.36.1 Define Documentation	374
7.36.1.1 CH_DATATYPE_SIZE	374
7.36.1.2 CH_DATATYPE_STR_TO_VAL	374
7.36.1.3 CH_DATATYPE_STRING	375
7.36.1.4 CH_DATATYPE_VALUE_STRING	376
7.36.1.5 CH_STRING_DATATYPE	376
7.36.1.6 CHECK_NULL	377
7.36.1.7 COND_BROADCAST	377
7.36.1.8 COND_DESTROY	377
7.36.1.9 COND_INIT	377
7.36.1.10 COND_NEW	378
7.36.1.11 COND_RESET	378
7.36.1.12 COND_SIGNAL	378
7.36.1.13 COND_SLEEP	378
7.36.1.14 COND_SLEEP_ACTION	378
7.36.1.15 COND_T	379
7.36.1.16 COND_WAIT	379

7.36.1.17 GET_THREAD_MODE	379
7.36.1.18 MUTEX_DESTROY	379
7.36.1.19 MUTEX_INIT	379
7.36.1.20 MUTEX_LOCK	379
7.36.1.21 MUTEX_NEW	380
7.36.1.22 MUTEX_T	380
7.36.1.23 MUTEX_UNLOCK	380
7.36.1.24 PTHREAD_STACK_SIZE	380
7.36.1.25 RWLOCK_DESTROY	381
7.36.1.26 RWLOCK_INIT	381
7.36.1.27 RWLOCK_RDLOCK	381
7.36.1.28 RWLOCK_RDUNLOCK	381
7.36.1.29 RWLOCK_T	381
7.36.1.30 RWLOCK_WRLOCK	381
7.36.1.31 RWLOCK_WRUNLOCK	381
7.36.1.32 SEMAPHORE_DESTROY	381
7.36.1.33 SEMAPHORE_INIT	381
7.36.1.34 SEMAPHORE_POST	381
7.36.1.35 SEMAPHORE_T	382
7.36.1.36 SEMAPHORE_WAIT	382
7.36.1.37 SET_THREAD_OFF	382
7.36.1.38 SET_THREAD_ON	382
7.36.1.39 SIGNAL	382
7.36.1.40 SLEEP_QUEUE	382
7.36.1.41 SLEEP_RESET	382
7.36.1.42 SOCKET_ERROR	383
7.36.1.43 STRUCT	383
7.36.1.44 THREAD_CANCEL	383
7.36.1.45 THREAD_CREATE	383
7.36.1.46 THREAD_DETACH	383
7.36.1.47 THREAD_EXIT	384
7.36.1.48 THREAD_JOIN	384
7.36.1.49 WAKE_QUEUE	384
7.36.1.50 WARN	384
7.37 /home/dko/Projects/mobilec/src/include/mc_error.h File Reference	385
7.37.1 Typedef Documentation	385

7.37.1.1	error_code_t	385
7.37.2	Enumeration Type Documentation	385
7.37.2.1	error_code_e	385
7.38	/home/dko/Projects/mobilec/src/include/mc_platform.h File Reference	387
7.38.1	Typedef Documentation	387
7.38.1.1	mc_platform_p	387
7.38.1.2	mc_platform_t	387
7.38.2	Function Documentation	388
7.38.2.1	interpreter_queue_CreateRetrieve	388
7.38.2.2	mc_platform_Destroy	388
7.38.2.3	mc_platform_GetQueue	388
7.38.2.4	mc_platform_Initialize	388
7.39	/home/dko/Projects/mobilec/src/include/mc_rwlock.h File Reference	390
7.39.1	Typedef Documentation	390
7.39.1.1	mc_rwlock_p	390
7.39.1.2	mc_rwlock_t	390
7.39.2	Function Documentation	390
7.39.2.1	mc_rwlock_destroy	390
7.39.2.2	mc_rwlock_init	390
7.39.2.3	mc_rwlock_rdlock	391
7.39.2.4	mc_rwlock_rdunlock	391
7.39.2.5	mc_rwlock_wrlock	391
7.39.2.6	mc_rwlock_wrunlock	391
7.40	/home/dko/Projects/mobilec/src/include/message.h File Reference	392
7.40.1	Typedef Documentation	393
7.40.1.1	message_p	393
7.40.1.2	message_send_arg_t	393
7.40.1.3	message_t	393
7.40.1.4	message_type_t	393
7.40.2	Enumeration Type Documentation	393
7.40.2.1	message_type_e	393
7.40.3	Function Documentation	393
7.40.3.1	auth_rece_send_msg	393
7.40.3.2	http_to_hostport	394
7.40.3.3	message_Copy	394
7.40.3.4	message_Destroy	394

7.40.3.5 message_InitializeFromAgent	394
7.40.3.6 message_InitializeFromConnection	394
7.40.3.7 message_InitializeFromString	394
7.40.3.8 message_New	394
7.40.3.9 message_Print	395
7.40.3.10 message_Send	395
7.40.3.11 message_send_Thread	395
7.41 /home/dko/Projects/mobilec/src/include/mobilec.h File Reference	396
7.42 /home/dko/Projects/mobilec/src/include/mtp_http.h File Reference	397
7.42.1 Define Documentation	398
7.42.1.1 SOCKET_INPUT_SIZE	398
7.42.2 Typedef Documentation	398
7.42.2.1 mtp_http_content_t	398
7.42.2.2 mtp_http_p	398
7.42.2.3 mtp_http_t	398
7.42.3 Enumeration Type Documentation	398
7.42.3.1 http_performative_e	398
7.42.3.2 http_status_code_e	399
7.42.4 Function Documentation	400
7.42.4.1 http_GetExpression	400
7.42.4.2 http_GetToken	400
7.42.4.3 http_ParseExpression	400
7.42.4.4 http_ParseRequest	401
7.42.4.5 mtp_http_ComposeMessage	401
7.42.4.6 mtp_http_CreateMessage	401
7.42.4.7 mtp_http_Destroy	401
7.42.4.8 mtp_http_InitializeFromConnection	401
7.42.4.9 mtp_http_New	402
7.42.4.10 mtp_http_Parse	402
7.42.4.11 mtp_http_ParseHeader	402
7.43 /home/dko/Projects/mobilec/src/include/rwlock.h File Reference	403
7.43.1 Typedef Documentation	403
7.43.1.1 rwlock_t	403
7.43.2 Function Documentation	403
7.43.2.1 rwlock_Destroy	403
7.43.2.2 rwlock_New	403

7.43.2.3	rwlock_rdlock	404
7.43.2.4	rwlock_rdunlock	404
7.43.2.5	rwlock_rdwait	404
7.43.2.6	rwlock_wrlock	404
7.43.2.7	rwlock_wrunlock	404
7.44	/home/dko/Projects/mobilec/src/include/xml_compose.h File Reference	405
7.44.1	Function Documentation	405
7.44.1.1	agent_xml_compose	405
7.44.1.2	agent_xml_compose_agent_code	405
7.44.1.3	agent_xml_compose_agent_data	406
7.44.1.4	agent_xml_compose_create_row_nodes	406
7.44.1.5	agent_xml_compose_data	406
7.44.1.6	agent_xml_compose_file	406
7.44.1.7	agent_xml_compose_gaf_message	406
7.44.1.8	agent_xml_compose_home	406
7.44.1.9	agent_xml_compose_message	407
7.44.1.10	agent_xml_compose_mobile_agent	407
7.44.1.11	agent_xml_compose_name	407
7.44.1.12	agent_xml_compose_owner	407
7.44.1.13	agent_xml_compose_row	407
7.44.1.14	agent_xml_compose_task	407
7.44.1.15	agent_xml_compose_tasks	408
7.44.1.16	agent_xml_compose_wg_code	408
7.45	/home/dko/Projects/mobilec/src/include/xml_helper.h File Reference	409
7.45.1	Function Documentation	409
7.45.1.1	whitespace_cb	409
7.45.1.2	xml_find_sibling	409
7.45.1.3	xml_get_cdata	409
7.45.1.4	xml_get_child	409
7.45.1.5	xml_get_deep_child	410
7.45.1.6	xml_get_element_name	410
7.45.1.7	xml_get_next_element	410
7.45.1.8	xml_get_text	410
7.45.1.9	xml_new_cdata	410
7.46	/home/dko/Projects/mobilec/src/include/xml_parser.h File Reference	411
7.46.1	Function Documentation	411

7.46.1.1	agent_xml_parse	411
7.46.1.2	agent_xml_parse_agent_code	411
7.46.1.3	agent_xml_parse_agent_data	412
7.46.1.4	agent_xml_parse_data	412
7.46.1.5	agent_xml_parse_file	412
7.46.1.6	agent_xml_parse_fill_row_data	412
7.46.1.7	agent_xml_parse_home	412
7.46.1.8	agent_xml_parse_mobile_agent	413
7.46.1.9	agent_xml_parse_name	413
7.46.1.10	agent_xml_parse_owner	413
7.46.1.11	agent_xml_parse_row	413
7.46.1.12	agent_xml_parse_sender	413
7.46.1.13	agent_xml_parse_task	413
7.46.1.14	agent_xml_parse_tasks	414
7.46.1.15	agent_xml_parse_wg_code	414
7.46.1.16	message_xml_parse	414
7.46.1.17	message_xml_parse_message	414
7.46.1.18	STRUCT	414
7.47	/home/dko/Projects/mobilec/src/libb64-1.2/base64/base64.cc File Reference	415
7.47.1	Function Documentation	415
7.47.1.1	main	415
7.47.1.2	usage	415
7.47.1.3	usage	415
7.48	/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cdecode.h File Reference	416
7.48.1	Enumeration Type Documentation	416
7.48.1.1	base64_decodestep	416
7.48.2	Function Documentation	416
7.48.2.1	base64_decode_block	416
7.48.2.2	base64_decode_value	416
7.48.2.3	base64_init_decodestate	417
7.49	/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cencode.h File Reference	418
7.49.1	Enumeration Type Documentation	418
7.49.1.1	base64_encodestep	418
7.49.2	Function Documentation	418
7.49.2.1	base64_encode_block	418
7.49.2.2	base64_encode_blockend	418

7.49.2.3	base64_encode_value	419
7.49.2.4	base64_init_encodestate	419
7.50	/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/decode.h File Reference	420
7.51	/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/encode.h File Reference	421
7.52	/home/dko/Projects/mobilec/src/libb64-1.2/src/cdecode.c File Reference	422
7.52.1	Function Documentation	422
7.52.1.1	base64_decode_block	422
7.52.1.2	base64_decode_value	422
7.52.1.3	base64_init_decodestate	422
7.53	/home/dko/Projects/mobilec/src/libb64-1.2/src/cencode.c File Reference	423
7.53.1	Function Documentation	423
7.53.1.1	base64_encode_block	423
7.53.1.2	base64_encode_blockend	423
7.53.1.3	base64_encode_value	423
7.53.1.4	base64_init_encodestate	423
7.53.2	Variable Documentation	424
7.53.2.1	CHARS_PER_LINE	424
7.54	/home/dko/Projects/mobilec/src/libmc.c File Reference	425
7.54.1	Function Documentation	434
7.54.1.1	MC_AclAddReceiver	434
7.54.1.2	MC_AclAddReceiver_chdl	434
7.54.1.3	MC_AclAddReplyTo	434
7.54.1.4	MC_AclAddReplyTo_chdl	435
7.54.1.5	MC_AclDestroy	435
7.54.1.6	MC_AclDestroy_chdl	435
7.54.1.7	MC_AclGetContent	435
7.54.1.8	MC_AclGetContent_chdl	435
7.54.1.9	MC_AclGetConversationID	436
7.54.1.10	MC_AclGetConversationID_chdl	436
7.54.1.11	MC_AclGetPerformative	436
7.54.1.12	MC_AclGetPerformative_chdl	436
7.54.1.13	MC_AclGetProtocol	436
7.54.1.14	MC_AclGetProtocol_chdl	436
7.54.1.15	MC_AclGetSender	436
7.54.1.16	MC_AclGetSender_chdl	437
7.54.1.17	MC_AclNew	437

7.54.1.18 MC_AclNew_chdl	437
7.54.1.19 MC_AclPost	437
7.54.1.20 MC_AclPost_chdl	438
7.54.1.21 MC_AclReply	438
7.54.1.22 MC_AclReply_chdl	438
7.54.1.23 MC_AclRetrieve	438
7.54.1.24 MC_AclRetrieve_chdl	439
7.54.1.25 MC_AclSend	439
7.54.1.26 MC_AclSend_chdl	439
7.54.1.27 MC_AclSetContent	439
7.54.1.28 MC_AclSetContent_chdl	439
7.54.1.29 MC_AclSetConversationID	440
7.54.1.30 MC_AclSetConversationID_chdl	440
7.54.1.31 MC_AclSetPerformative	440
7.54.1.32 MC_AclSetPerformative_chdl	440
7.54.1.33 MC_AclSetProtocol	440
7.54.1.34 MC_AclSetProtocol_chdl	440
7.54.1.35 MC_AclSetSender	441
7.54.1.36 MC_AclSetSender_chdl	441
7.54.1.37 MC_AclWaitRetrieve	441
7.54.1.38 MC_AclWaitRetrieve_chdl	441
7.54.1.39 MC_AddAgent	441
7.54.1.40 MC_AddAgent_chdl	442
7.54.1.41 MC_AddAgentInitCallback	442
7.54.1.42 MC_AddStationaryAgent	442
7.54.1.43 MC_AgentAddTask	443
7.54.1.44 MC_AgentAddTask_chdl	443
7.54.1.45 MC_AgentAddTaskFromFile	443
7.54.1.46 MC_AgentAttachFile	444
7.54.1.47 MC_AgentAttachFile_chdl	444
7.54.1.48 MC_AgentInfo_GetAgency	444
7.54.1.49 MC_AgentInfo_GetAgent	445
7.54.2 Examples	445
7.54.2.1 MC_AgentInfo_GetAgentArgs	445
7.54.2.2 MC_AgentListFiles	445
7.54.2.3 MC_AgentListFiles_chdl	446

7.54.2.4	MC_AgentProcessingBegin	446
7.54.2.5	MC_AgentProcessingEnd	446
7.54.2.6	MC_AgentRetrieveFile	446
7.54.2.7	MC_AgentRetrieveFile_chdl	447
7.54.2.8	MC_AgentReturnArrayDim	447
7.54.2.9	MC_AgentReturnArrayExtent	447
7.54.2.10	MC_AgentReturnArrayNum	448
7.54.2.11	MC_AgentReturnDataGetSymbolAddr	448
7.54.2.12	MC_AgentReturnDataSize	448
7.54.2.13	MC_AgentReturnDataType	449
7.54.2.14	MC_AgentReturnIsArray	449
7.54.2.15	MC_AgentVariableRetrieve	449
7.54.3	Examples	450
7.54.3.1	MC_AgentVariableRetrieve_chdl	450
7.54.3.2	MC_AgentVariableRetrieveInfo	450
7.54.3.3	MC_AgentVariableSave	450
7.54.4	Examples	451
7.54.5	Examples	451
7.54.5.1	MC_AgentVariableSave_chdl	451
7.54.5.2	MC_Barrier	451
7.54.5.3	MC_Barrier_chdl	451
7.54.5.4	MC_BarrierDelete	452
7.54.5.5	MC_BarrierDelete_chdl	452
7.54.5.6	MC_BarrierInit	452
7.54.6	Examples	452
7.54.6.1	MC_BarrierInit_chdl	453
7.54.6.2	MC_CallAgentFunc	453
7.54.7	Example	453
7.54.7.1	MC_CallAgentFunc_chdl	453
7.54.7.2	MC_CallAgentFuncArg	453
7.54.8	Example	454
7.54.8.1	MC_CallAgentFuncV	454
7.54.8.2	MC_CallAgentFuncVar	454
7.54.8.3	MC_ComposeAgent	455
7.54.8.4	MC_ComposeAgent_chdl	455
7.54.8.5	MC_ComposeAgentFromFile	455

7.54.8.6 MC_ComposeAgentFromFile_chdl	456
7.54.8.7 MC_ComposeAgentFromFileS	456
7.54.8.8 MC_ComposeAgentFromFileWithWorkgroup	457
7.54.8.9 MC_ComposeAgentFromFileWithWorkgroup_chdl	457
7.54.8.10 MC_ComposeAgentS	457
7.54.8.11 MC_ComposeAgentWithWorkgroup	458
7.54.8.12 MC_ComposeAgentWithWorkgroup_chdl	459
7.54.8.13 MC_CondBroadcast	459
7.54.8.14 MC_CondBroadcast_chdl	459
7.54.8.15 MC_CondReset	459
7.54.8.16 MC_CondReset_chdl	460
7.54.8.17 MC_CondSignal	460
7.54.9 Example	460
7.54.9.1 MC_CondSignal_chdl	461
7.54.9.2 MC_CondWait	461
7.54.10 Example	461
7.54.10.1 MC_CondWait_chdl	461
7.54.10.2 MC_CopyAgent	461
7.54.10.3 MC_DeleteAgent	462
7.54.10.4 MC_DeleteAgent_chdl	462
7.54.10.5 MC_DeleteAgentWG	462
7.54.10.6 MC_DeleteAgentWG_chdl	463
7.54.10.7 MC_DeregisterService	463
7.54.10.8 MC_DeregisterService_chdl	463
7.54.10.9 MC_DestroyServiceSearchResult	463
7.54.10.10 MC_DestroyServiceSearchResult_chdl	464
7.54.10.11 MC_End	464
7.54.11 Example	464
7.54.11.1 MC_End_chdl	464
7.54.11.2 MC_FindAgentByID	464
7.54.11.3 MC_FindAgentByID_chdl	465
7.54.11.4 MC_FindAgentByName	465
7.54.12 Example	465
7.54.12.1 MC_FindAgentByName_chdl	465
7.54.12.2 MC_GetAgentArrivalTime	465
7.54.12.3 MC_GetAgentArrivalTime_chdl	466

7.54.12.4 MC_GetAgentExecEngine	466
7.54.12.5 MC_GetAgentID	466
7.54.12.6 MC_GetAgentID_chdl	466
7.54.12.7 MC_GetAgentName	466
7.54.12.8 MC_GetAgentName_chdl	466
7.54.12.9 MC_GetAgentNumTasks	467
7.54.13 Example	467
7.54.13.1 MC_GetAgentNumTasks_chdl	467
7.54.13.2 MC_GetAgentReturnData	467
7.54.14 Example	467
7.54.14.1 MC_GetAgents	468
7.54.14.2 MC_GetAgentStatus	468
7.54.14.3 MC_GetAgentStatus_chdl	468
7.54.14.4 MC_GetAgentType	468
7.54.14.5 MC_GetAgentXMLString	469
7.54.14.6 MC_GetAgentXMLString_chdl	469
7.54.14.7 MC_GetAllAgents	469
7.54.14.8 MC_GetNumAgents	469
7.54.14.9 MC_GetTimeOfDay_chdl	470
7.54.14.10 MC_HaltAgency	470
7.54.14.11 MC_HaltAgency_chdl	470
7.54.14.12 MC_Initialize	470
7.54.15 Example	470
7.54.15.1 MC_InitializeAgencyOptions	471
7.54.16 Example	471
7.54.16.1 MC_LoadAgentFromFile	471
7.54.16.2 MC_MainLoop	472
7.54.16.3 MC_MigrateAgent	472
7.54.16.4 MC_MigrateAgent_chdl	472
7.54.16.5 MC_MutexLock	472
7.54.17 Example	473
7.54.17.1 MC_MutexLock_chdl	473
7.54.17.2 MC_MutexUnlock	473
7.54.17.3 MC_MutexUnlock_chdl	473
7.54.17.4 MC_PrintAgentCode	473
7.54.17.5 MC_PrintAgentCode_chdl	474

7.54.17.6 MC_QueueRDLock	474
7.54.17.7 MC_QueueRDUUnlock	474
7.54.17.8 MC_QueueWRLock	474
7.54.17.9 MC_QueueWRUnlock	474
7.54.17.10MC_RegisterService	474
7.54.18 Example	475
7.54.18.1 MC_RegisterService_chdl	475
7.54.18.2 MC_ResetSignal	475
7.54.18.3 MC_ResumeAgency	475
7.54.18.4 MC_ResumeAgency_chdl	476
7.54.18.5 MC_RetrieveAgent	476
7.54.18.6 MC_RetrieveAgent_chdl	476
7.54.18.7 MC_RetrieveAgentCode	476
7.54.18.8 MC_RetrieveAgentCode_chdl	477
7.54.18.9 MC_SaveData_chdl	477
7.54.18.10MC_SearchForService	477
7.54.19 Example	477
7.54.19.1 MC_SearchForService_chdl	478
7.54.19.2 MC_SemaphorePost	478
7.54.20 Example	478
7.54.20.1 MC_SemaphorePost_chdl	478
7.54.20.2 MC_SemaphoreWait	478
7.54.21 Example	479
7.54.21.1 MC_SemaphoreWait_chdl	479
7.54.21.2 MC_SendAgent	479
7.54.21.3 MC_SendAgentFile	479
7.54.21.4 MC_SendAgentMigrationMessage	480
7.54.21.5 MC_SendAgentMigrationMessage_chdl	480
7.54.21.6 MC_SendAgentMigrationMessageFile	480
7.54.21.7 MC_SendAgentMigrationMessageFile_chdl	480
7.54.21.8 MC_SendCh	481
7.54.21.9 MC_SendSteerCommand	481
7.54.21.10MC_SendSteerCommand_chdl	481
7.54.21.11MC_SetAgentStatus	481
7.54.21.12MC_SetAgentStatus_chdl	481
7.54.21.13MC_SetDefaultAgentStatus	482

7.54.21.14MC_SetDefaultAgentStatus_chdl	482
7.54.21.15MC_SetThreadOff	482
7.54.21.16MC_SetThreadOn	483
7.54.21.17MC_SetThreadsAllOff	483
7.54.21.18MC_SetThreadsAllOn	483
7.54.21.19MC_Steer	484
7.54.22 Example	484
7.54.22.1 MC_SteerControl	484
7.54.22.2 MC_SyncDelete	484
7.54.22.3 MC_SyncDelete_chdl	485
7.54.22.4 MC_SyncInit	485
7.54.22.5 MC_SyncInit_chdl	485
7.54.22.6 MC_TerminateAgent	486
7.54.22.7 MC_TerminateAgent_chdl	486
7.54.22.8 MC_TerminateAgentWG	486
7.54.22.9 MC_TerminateAgentWG_chdl	486
7.54.22.10MC_WaitAgent	486
7.54.22.11MC_WaitRetrieveAgent	487
7.54.22.12MC_WaitSignal	487
7.54.23 Example	487
7.54.24 Variable Documentation	487
7.54.24.1 g_mc_platform	487
7.55 /home/dko/Projects/mobilec/src/mc_list/list.c File Reference	488
7.55.1 Function Documentation	488
7.55.1.1 ListAdd	488
7.55.1.2 ListAppend	489
7.55.1.3 ListClearCB	489
7.55.1.4 ListCopy	489
7.55.1.5 ListDelete	489
7.55.1.6 ListDeleteCB	489
7.55.1.7 ListForEachCB	489
7.55.1.8 ListGetHead	489
7.55.1.9 ListGetSize	490
7.55.1.10 ListInitialize	490
7.55.1.11 ListInsert	490
7.55.1.12 ListPop	490

7.55.1.13 ListRDLock	490
7.55.1.14 ListRDtoWR	490
7.55.1.15 ListRDUnlock	491
7.55.1.16 ListRDWait	491
7.55.1.17 ListSearch	491
7.55.1.18 ListSearchCB	491
7.55.1.19 ListTerminate	491
7.55.1.20 ListWait	492
7.55.1.21 ListWRLock	492
7.55.1.22 ListWRtoRD	492
7.55.1.23 ListWRUnlock	492
7.55.1.24 ListWRWait	492
7.56 /home/dko/Projects/mobilec/src/mc_list/list.h File Reference	494
7.56.1 Typedef Documentation	495
7.56.1.1 list_p	495
7.56.1.2 list_t	495
7.56.1.3 ListElemCopyFunc_t	495
7.56.1.4 ListElemDestroyFunc_t	495
7.56.1.5 ListElemGenericFunc_t	495
7.56.1.6 listNode_p	495
7.56.1.7 listNode_t	495
7.56.1.8 ListSearchFunc_t	495
7.56.2 Function Documentation	495
7.56.2.1 ListAdd	495
7.56.2.2 ListAppend	495
7.56.2.3 ListClearCB	496
7.56.2.4 ListCopy	496
7.56.2.5 ListDelete	496
7.56.2.6 ListDeleteCB	496
7.56.2.7 ListForEachCB	496
7.56.2.8 ListGetHead	496
7.56.2.9 ListGetSize	497
7.56.2.10 ListInitialize	497
7.56.2.11 ListInsert	497
7.56.2.12 ListPop	497
7.56.2.13 ListRDLock	497

7.56.2.14	ListRDtoWR	497
7.56.2.15	ListRDUnlock	498
7.56.2.16	ListRDWait	498
7.56.2.17	ListSearch	498
7.56.2.18	ListSearchCB	498
7.56.2.19	ListTerminate	498
7.56.2.20	ListWait	499
7.56.2.21	ListWRLock	499
7.56.2.22	ListWRtoRD	499
7.56.2.23	ListWRUnlock	499
7.56.2.24	ListWRWait	499
7.57	/home/dko/Projects/mobilec/src/mc_platform.c File Reference	501
7.57.1	Define Documentation	501
7.57.1.1	DEFAULT_HOSTNAME_LENGTH	501
7.57.2	Function Documentation	501
7.57.2.1	interpreter_queue_CreateRetrieve	501
7.57.2.2	mc_platform_Destroy	501
7.57.2.3	mc_platform_GetQueue	502
7.57.2.4	mc_platform_Initialize	502
7.58	/home/dko/Projects/mobilec/src/mc_rwlock.c File Reference	503
7.58.1	Function Documentation	503
7.58.1.1	mc_rwlock_destroy	503
7.58.1.2	mc_rwlock_init	503
7.58.1.3	mc_rwlock_rdlock	503
7.58.1.4	mc_rwlock_runlock	503
7.58.1.5	mc_rwlock_wrlock	504
7.58.1.6	mc_rwlock_wrunlock	504
7.59	/home/dko/Projects/mobilec/src/mc_sync/list.c File Reference	505
7.59.1	Function Documentation	505
7.59.1.1	syncListAddNode	505
7.59.1.2	syncListDelete	505
7.59.1.3	syncListNew	505
7.59.1.4	syncListNode_CmpID	505
7.59.1.5	syncListNodeDestroy	506
7.59.1.6	syncListNodeInit	506
7.59.1.7	syncListNodeNew	506

7.59.1.8	syncListRemove	506
7.60	/home/dko/Projects/mobilec/src/mc_sync-sync_list.h File Reference	507
7.60.1	Typedef Documentation	507
7.60.1.1	syncListNode_p	507
7.60.1.2	syncListNode_t	507
7.60.2	Function Documentation	507
7.60.2.1	syncListAddNode	507
7.60.2.2	syncListDelete	508
7.60.2.3	syncListGet	508
7.60.2.4	syncListNew	508
7.60.2.5	syncListNode_CmpID	508
7.60.2.6	syncListNodeDestroy	508
7.60.2.7	syncListNodeInit	508
7.60.2.8	syncListNodeNew	508
7.60.2.9	syncListRemove	509
7.61	/home/dko/Projects/mobilec/src/message.c File Reference	510
7.61.1	Define Documentation	511
7.61.1.1	MSG_THREAD_EXIT	511
7.61.1.2	MSG_THREADS	511
7.61.1.3	SOCKET_INPUT_SIZE	511
7.61.2	Function Documentation	511
7.61.2.1	auth_rece_send_msg	511
7.61.2.2	http_to_hostport	512
7.61.2.3	message_Copy	512
7.61.2.4	message_Destroy	512
7.61.2.5	message_InitializeFromAgent	512
7.61.2.6	message_InitializeFromConnection	512
7.61.2.7	message_InitializeFromString	513
7.61.2.8	message_New	513
7.61.2.9	message_Print	513
7.61.2.10	message_Send	513
7.61.2.11	message_send_Thread	513
7.62	/home/dko/Projects/mobilec/src/message_queue.c File Reference	515
7.62.1	Function Documentation	515
7.62.1.1	message_queue_SendOutgoing	515
7.63	/home/dko/Projects/mobilec/src/mtp_http.c File Reference	516

7.63.1	Define Documentation	517
7.63.1.1	HTTP_PARSE_EXPR	517
7.63.1.2	SAFE_FREE	517
7.63.1.3	SAFE_FREE	517
7.63.2	Function Documentation	517
7.63.2.1	http_GetExpression	517
7.63.2.2	http_GetToken	518
7.63.2.3	http_ParseExpression	518
7.63.2.4	http_ParseRequest	518
7.63.2.5	mtp_http_ComposeMessage	518
7.63.2.6	mtp_http_CreateMessage	518
7.63.2.7	mtp_http_Destroy	519
7.63.2.8	mtp_http_InitializeFromConnection	519
7.63.2.9	mtp_http_New	519
7.63.2.10	mtp_http_Parse	519
7.63.2.11	mtp_http_ParseHeader	519
7.63.2.12	mtp_http_ParseResponse	520
7.63.2.13	rece_de_msg	520
7.64	/home/dko/Projects/mobilec/src/mxml-2.2.2/config.h File Reference	521
7.64.1	Define Documentation	521
7.64.1.1	HAVE_STRDUP	521
7.64.1.2	HAVE_VSNPRINTF	521
7.64.1.3	MXML_VERSION	521
7.64.2	Function Documentation	521
7.64.2.1	mxml_strdupf	521
7.65	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/config.h File Reference	522
7.65.1	Define Documentation	522
7.65.1.1	XYSSL_AES_C	522
7.65.1.2	XYSSL_ARC4_C	522
7.65.1.3	XYSSL_BASE64_C	522
7.65.1.4	XYSSL_BIGNUM_C	522
7.65.1.5	XYSSL_CERTS_C	523
7.65.1.6	XYSSL_DEBUG_C	523
7.65.1.7	XYSSL_DEBUG_MSG	523
7.65.1.8	XYSSL_DES_C	523
7.65.1.9	XYSSL_DHM_C	523

7.65.1.10 XYSSL_GENPRIME	523
7.65.1.11 XYSSL_HAVE_ASM	523
7.65.1.12 XYSSL_HAVEGE_C	523
7.65.1.13 XYSSL_MD5_C	523
7.65.1.14 XYSSL_NET_C	523
7.65.1.15 XYSSL_PADLOCK_C	523
7.65.1.16 XYSSL_RSA_C	524
7.65.1.17 XYSSL_SELF_TEST	524
7.65.1.18 XYSSL_SHA1_C	524
7.65.1.19 XYSSL_SHA2_C	524
7.65.1.20 XYSSL_SHA4_C	524
7.65.1.21 XYSSL_SSL_CLI_C	524
7.65.1.22 XYSSL_SSL_SRV_C	524
7.65.1.23 XYSSL_SSL_TLS_C	524
7.65.1.24 XYSSL_TIMING_C	524
7.65.1.25 XYSSL_X509_PARSE_C	524
7.65.1.26 XYSSL_X509_WRITE_C	524
7.66 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-attr.c File Reference	525
7.66.1 Function Documentation	525
7.66.1.1 mxmlElementGetAttr	525
7.66.1.2 mxmlElementSetAttr	525
7.67 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-entity.c File Reference	526
7.67.1 Function Documentation	526
7.67.1.1 default_callback	526
7.67.1.2 mxmlEntityAddCallback	526
7.67.1.3 mxmlEntityGetName	526
7.67.1.4 mxmlEntityGetValue	526
7.67.1.5 mxmlEntityRemoveCallback	526
7.67.2 Variable Documentation	527
7.67.2.1 callbacks	527
7.67.2.2 num_callbacks	527
7.68 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-file.c File Reference	528
7.68.1 Define Documentation	529
7.68.1.1 ENCODE_UTF16BE	529
7.68.1.2 ENCODE_UTF16LE	529
7.68.1.3 ENCODE_UTF8	529

7.68.1.4	<code>mxml_bad_char</code>	529
7.68.2	Typeface Documentation	529
7.68.2.1	<code>mxml_fdbuf_t</code>	529
7.68.3	Function Documentation	529
7.68.3.1	<code>mxml_add_char</code>	529
7.68.3.2	<code>mxml_fd_getc</code>	530
7.68.3.3	<code>mxml_fd_putc</code>	530
7.68.3.4	<code>mxml_fd_read</code>	530
7.68.3.5	<code>mxml_fd_write</code>	530
7.68.3.6	<code>mxml_file_getc</code>	530
7.68.3.7	<code>mxml_file_putc</code>	530
7.68.3.8	<code>mxml_get_entity</code>	531
7.68.3.9	<code>mxml_load_data</code>	531
7.68.3.10	<code>mxml_parse_element</code>	531
7.68.3.11	<code>mxml_string_getc</code>	531
7.68.3.12	<code>mxml_string_putc</code>	531
7.68.3.13	<code>mxml_write_name</code>	531
7.68.3.14	<code>mxml_write_node</code>	532
7.68.3.15	<code>mxml_write_string</code>	532
7.68.3.16	<code>mxml_write_ws</code>	532
7.68.3.17	<code>mxmlLoadFd</code>	532
7.68.3.18	<code>mxmlLoadFile</code>	532
7.68.3.19	<code>mxmlLoadString</code>	533
7.68.3.20	<code>mxmlSaveAllocString</code>	533
7.68.3.21	<code>mxmlSaveFd</code>	533
7.68.3.22	<code>mxmlSaveFile</code>	533
7.68.3.23	<code>mxmlSaveString</code>	533
7.68.3.24	<code>mxmlSetCustomHandlers</code>	533
7.68.3.25	<code>mxmlSetErrorCallback</code>	534
7.68.4	Variable Documentation	534
7.68.4.1	<code>mxml_custom_load_cb</code>	534
7.68.4.2	<code>mxml_custom_save_cb</code>	534
7.68.4.3	<code>mxml_error_cb</code>	534
7.69	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-index.c File Reference	535
7.69.1	Function Documentation	535
7.69.1.1	<code>index_compare</code>	535

7.69.1.2	index_find	535
7.69.1.3	index_sort	535
7.69.1.4	mxmlIndexDelete	535
7.69.1.5	mxmlIndexEnum	536
7.69.1.6	mxmlIndexFind	536
7.69.1.7	mxmlIndexNew	536
7.69.1.8	mxmlIndexReset	536
7.70	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-node.c File Reference	537
7.70.1	Function Documentation	537
7.70.1.1	mxml_new	537
7.70.1.2	mxmlAdd	537
7.70.1.3	mxmlDelete	537
7.70.1.4	mxmlNewCustom	538
7.70.1.5	mxmlNewElement	538
7.70.1.6	mxmlNewInteger	538
7.70.1.7	mxmlNewOpaque	538
7.70.1.8	mxmlNewReal	538
7.70.1.9	mxmlNewText	539
7.70.1.10	mxmlNewTextf	539
7.70.1.11	mxmlRemove	539
7.71	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-private.c File Reference	540
7.71.1	Function Documentation	540
7.71.1.1	mxml_error	540
7.71.1.2	mxml_integer_cb	540
7.71.1.3	mxml_opaque_cb	540
7.71.1.4	mxml_real_cb	540
7.71.2	Variable Documentation	541
7.71.2.1	mxml_error_cb	541
7.72	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-search.c File Reference	542
7.72.1	Function Documentation	542
7.72.1.1	mxmlFindElement	542
7.72.1.2	mxmlWalkNext	542
7.72.1.3	mxmlWalkPrev	542
7.73	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-set.c File Reference	543
7.73.1	Function Documentation	543
7.73.1.1	mxmlSetCustom	543

7.73.1.2	mxmlSetElement	543
7.73.1.3	mxmlSetInteger	543
7.73.1.4	mxmlSetOpaque	543
7.73.1.5	mxmlSetReal	543
7.73.1.6	mxmlSetText	544
7.73.1.7	mxmlSetTextf	544
7.74	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-string.c File Reference	545
7.74.1	Function Documentation	545
7.74.1.1	mxml_strdup	545
7.74.1.2	mxml_strdupf	545
7.74.1.3	mxml_vsnprintf	545
7.75	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h File Reference	546
7.75.1	Define Documentation	548
7.75.1.1	MXML_ADD_AFTER	548
7.75.1.2	MXML_ADD_BEFORE	548
7.75.1.3	MXML_ADD_TO_PARENT	548
7.75.1.4	MXML_DESCEND	548
7.75.1.5	MXML_DESCEND_FIRST	548
7.75.1.6	MXML_INTEGER_CALLBACK	549
7.75.1.7	MXML_NO_CALLBACK	549
7.75.1.8	MXML_NO_DESCEND	549
7.75.1.9	MXML_NO_PARENT	549
7.75.1.10	MXML_OPAQUE_CALLBACK	549
7.75.1.11	MXML_REAL_CALLBACK	549
7.75.1.12	MXML_TAB	550
7.75.1.13	MXML_TEXT_CALLBACK	550
7.75.1.14	MXML_WRAP	550
7.75.1.15	MXML_WS_AFTER_CLOSE	550
7.75.1.16	MXML_WS_AFTER_OPEN	550
7.75.1.17	MXML_WS_BEFORE_CLOSE	550
7.75.1.18	MXML_WS_BEFORE_OPEN	550
7.75.2	Typedef Documentation	550
7.75.2.1	mxml_attr_t	550
7.75.2.2	mxml_custom_load_cb_t	550
7.75.2.3	mxml_custom_save_cb_t	550
7.75.2.4	mxml_custom_t	551

7.75.2.5 <code>mxml_element_t</code>	551
7.75.2.6 <code>mxml_index_t</code>	551
7.75.2.7 <code>mxml_node_t</code>	551
7.75.2.8 <code>mxml_text_t</code>	551
7.75.2.9 <code>mxml_type_t</code>	551
7.75.2.10 <code>mxml_value_t</code>	551
7.75.3 Enumeration Type Documentation	551
7.75.3.1 <code>mxml_type_e</code>	551
7.75.4 Function Documentation	551
7.75.4.1 <code>mxml_error</code>	551
7.75.4.2 <code>mxml_integer_cb</code>	551
7.75.4.3 <code>mxml_opaque_cb</code>	551
7.75.4.4 <code>mxml_real_cb</code>	552
7.75.4.5 <code>mxmlAdd</code>	552
7.75.4.6 <code>mxmlDelete</code>	552
7.75.4.7 <code>mxmlElementGetAttr</code>	552
7.75.4.8 <code>mxmlElementSetAttr</code>	552
7.75.4.9 <code>mxmlEntityAddCallback</code>	553
7.75.4.10 <code>mxmlEntityGetName</code>	553
7.75.4.11 <code>mxmlEntityGetValue</code>	553
7.75.4.12 <code>mxmlEntityRemoveCallback</code>	553
7.75.4.13 <code>mxmlFindElement</code>	553
7.75.4.14 <code>mxmlIndexDelete</code>	553
7.75.4.15 <code>mxmlIndexEnum</code>	554
7.75.4.16 <code>mxmlIndexFind</code>	554
7.75.4.17 <code>mxmlIndexNew</code>	554
7.75.4.18 <code>mxmlIndexReset</code>	554
7.75.4.19 <code>mxmlLoadFd</code>	554
7.75.4.20 <code>mxmlLoadFile</code>	554
7.75.4.21 <code>mxmlLoadString</code>	554
7.75.4.22 <code>mxmlNewCustom</code>	554
7.75.4.23 <code>mxmlNewElement</code>	555
7.75.4.24 <code>mxmlNewInteger</code>	555
7.75.4.25 <code>mxmlNewOpaque</code>	555
7.75.4.26 <code>mxmlNewReal</code>	555
7.75.4.27 <code>mxmlNewText</code>	555

7.75.4.28 mxmlNewTextf	556
7.75.4.29 mxmlRemove	556
7.75.4.30 mxmlSaveAllocString	556
7.75.4.31 mxmlSaveFd	556
7.75.4.32 mxmlSaveFile	556
7.75.4.33 mxmlSaveString	556
7.75.4.34 mxmlSetCustom	556
7.75.4.35 mxmlSetCustomHandlers	556
7.75.4.36 mxmlSetElement	556
7.75.4.37 mxmlSetErrorCallback	556
7.75.4.38 mxmlSetInteger	557
7.75.4.39 mxmlSetOpaque	557
7.75.4.40 mxmlSetReal	557
7.75.4.41 mxmlSetText	557
7.75.4.42 mxmlSetTextf	557
7.75.4.43 mxmlWalkNext	557
7.75.4.44 mxmlWalkPrev	557
7.76 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxmldoc.c File Reference	558
7.76.1 Define Documentation	558
7.76.1.1 STATE_C_COMMENT	558
7.76.1.2 STATE_CHARACTER	558
7.76.1.3 STATE_CXX_COMMENT	558
7.76.1.4 STATE_IDENTIFIER	559
7.76.1.5 STATE_NONE	559
7.76.1.6 STATE_PREPROCESSOR	559
7.76.1.7 STATE_STRING	559
7.76.2 Function Documentation	559
7.76.2.1 add_variable	559
7.76.2.2 main	559
7.76.2.3 safe_strcpy	559
7.76.2.4 scan_file	560
7.76.2.5 sort_node	560
7.76.2.6 update_comment	560
7.76.2.7 write_documentation	560
7.76.2.8 write_element	560
7.76.2.9 write_string	561

7.76.2.10 ws_cb	561
7.77 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/class.cxx File Reference	562
7.77.1 Variable Documentation	562
7.77.1.1 bar	562
7.77.1.2 f	562
7.77.1.3 foo	562
7.78 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/enum.cxx File Reference	563
7.78.1 Typedef Documentation	563
7.78.1.1 foo_enum_t	563
7.78.2 Enumeration Type Documentation	563
7.78.2.1 foo_enum_e	563
7.79 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/function.cxx File Reference	564
7.79.1 Function Documentation	564
7.79.1.1 foo_default_int	564
7.79.1.2 foo_default_string	564
7.79.1.3 foo_float_function	564
7.79.1.4 foo_void_function	564
7.80 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/struct.cxx File Reference	565
7.80.1 Typedef Documentation	565
7.80.1.1 foo_t	565
7.81 /home/dko/Projects/mobilec/src/mxml-2.2.2/testmxml.c File Reference	566
7.81.1 Function Documentation	566
7.81.1.1 main	566
7.81.1.2 type_cb	566
7.81.1.3 whitespace_cb	566
7.82 /home/dko/Projects/mobilec/src/mxml-2.2.2/winconfig.h File Reference	567
7.82.1 Define Documentation	567
7.82.1.1 HAVE_STRDUP	567
7.82.1.2 HAVE_VSNPRINTF	567
7.82.1.3 MXML_VERSION	567
7.82.1.4 strdup	567
7.82.1.5 vsnprintf	568
7.82.2 Function Documentation	568
7.82.2.1 mxml_strdup	568
7.82.2.2 mxml_strdupf	568
7.82.2.3 mxml_vsnprintf	568

7.83 /home/dko/Projects/mobilec/src/winconfig.h File Reference	569
7.83.1 Define Documentation	569
7.83.1.1 PACKAGE_STRING	569
7.83.1.2 PACKAGE_VERSION	569
7.83.1.3 strdup	569
7.83.1.4 strtok_r	569
7.84 /home/dko/Projects/mobilec/src/rwlock.c File Reference	570
7.84.1 Function Documentation	570
7.84.1.1 rwlock_Destroy	570
7.84.1.2 rwlock_New	570
7.84.1.3 rwlock_rdlock	570
7.84.1.4 rwlock_rdunlock	570
7.84.1.5 rwlock_rdwait	571
7.84.1.6 rwlock_wrlock	571
7.84.1.7 rwlock_wrunlock	571
7.85 /home/dko/Projects/mobilec/src/security/asm.c File Reference	572
7.86 /home/dko/Projects/mobilec/src/security/asm.h File Reference	573
7.87 /home/dko/Projects/mobilec/src/security/asm_message_composer.c File Reference	574
7.88 /home/dko/Projects/mobilec/src/security/asm_message_composer.h File Reference	575
7.89 /home/dko/Projects/mobilec/src/security/asm_message_parser.c File Reference	576
7.90 /home/dko/Projects/mobilec/src/security/asm_message_parser.h File Reference	577
7.91 /home/dko/Projects/mobilec/src/security/asm_node.c File Reference	578
7.92 /home/dko/Projects/mobilec/src/security/asm_node.h File Reference	579
7.93 /home/dko/Projects/mobilec/src/security/interface.c File Reference	580
7.93.1 Function Documentation	580
7.93.1.1 aes_en_de	580
7.93.1.2 append_nonce_to_MA	580
7.93.1.3 extract_nonce_from_MA	581
7.93.1.4 generate_AES_key	581
7.93.1.5 generate_RSA_keys_ciphertext	581
7.93.1.6 generate_RSA_keys_plaintext	581
7.93.1.7 initiate_migration_process	581
7.93.1.8 read_encrypted_file	581
7.93.1.9 read_known_host_file	582
7.93.1.10 receive_AES_en_MA	582
7.93.1.11 remove_nonce_from_MA	582

7.93.1.12 reply_migration_process	582
7.93.1.13 rsa_decryption	582
7.93.1.14 rsa_encryption	582
7.93.1.15 send_AES_en_MA	582
7.93.1.16 separate_key_parts	583
7.94 /home/dko/Projects/mobilec/src/security/interface.h File Reference	584
7.94.1 Define Documentation	585
7.94.1.1 EXPONENT	585
7.94.1.2 KEY_SIZE	585
7.94.1.3 MAXDATASIZE	585
7.94.1.4 MODE_DECRYPT	585
7.94.1.5 MODE_ENCRYPT	585
7.94.1.6 PATH	585
7.94.1.7 RSA_DE	585
7.94.1.8 RSA_EN	585
7.94.2 Function Documentation	586
7.94.2.1 aes_en_de	586
7.94.2.2 generate_AES_key	586
7.94.2.3 generate_encrypt_send_AES_key	586
7.94.2.4 generate_RSA_keys_ciphertext	586
7.94.2.5 generate_RSA_keys_plaintext	586
7.94.2.6 initiate_migration_process	586
7.94.2.7 read_encrypted_file	587
7.94.2.8 read_known_host_file	587
7.94.2.9 receive_AES_en_MA	587
7.94.2.10 receive_decrypt_AES_key	587
7.94.2.11 receiving_decrypting_MA_RSA	587
7.94.2.12 receiving_verifying_MA_RSA	587
7.94.2.13 reply_migration_process	587
7.94.2.14 rsa_decryption	587
7.94.2.15 rsa_encryption	587
7.94.2.16 send_AES_en_MA	588
7.95 /home/dko/Projects/mobilec/src/security/mc_dh.c File Reference	589
7.96 /home/dko/Projects/mobilec/src/security/mc_dh.h File Reference	590
7.97 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h File Reference . . .	591
7.97.1 Detailed Description	591

7.97.2 Define Documentation	591
7.97.2.1 AES_DECRYPT	591
7.97.2.2 AES_ENCRYPT	592
7.97.3 Function Documentation	592
7.97.3.1 aes_crypt_cbc	592
7.97.3.2 aes_crypt_cfb	592
7.97.3.3 aes_crypt_ecb	593
7.97.3.4 aes_self_test	593
7.97.3.5 aes_setkey_dec	593
7.97.3.6 aes_setkey_enc	594
7.98 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/arc4.h File Reference . .	595
7.98.1 Detailed Description	595
7.98.2 Function Documentation	595
7.98.2.1 arc4_crypt	595
7.98.2.2 arc4_self_test	595
7.98.2.3 arc4_setup	596
7.99 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/base64.h File Reference . .	597
7.99.1 Detailed Description	597
7.99.2 Define Documentation	597
7.99.2.1 XYSSL_ERR_BASE64_BUFFER_TOO_SMALL	597
7.99.2.2 XYSSL_ERR_BASE64_INVALID_CHARACTER	597
7.99.3 Function Documentation	597
7.99.3.1 base64_decode	597
7.99.3.2 base64_encode	598
7.99.3.3 base64_self_test	598
7.100 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bignum.h File Reference . .	599
7.100.1 Detailed Description	601
7.100.2 Define Documentation	602
7.100.2.1 MPI_CHK	602
7.100.2.2 XYSSL_ERR_MPI_BAD_INPUT_DATA	602
7.100.2.3 XYSSL_ERR_MPI_BUFFER_TOO_SMALL	602
7.100.2.4 XYSSL_ERR_MPI_DIVISION_BY_ZERO	602
7.100.2.5 XYSSL_ERR_MPI_FILE_IO_ERROR	602
7.100.2.6 XYSSL_ERR_MPI_INVALID_CHARACTER	602
7.100.2.7 XYSSL_ERR_MPI_NEGATIVE_VALUE	602
7.100.2.8 XYSSL_ERR_MPI_NOT_ACCEPTABLE	602

7.100.3 Typedef Documentation	603
7.100.3.1 t_dbl	603
7.100.3.2 t_int	603
7.100.4 Function Documentation	603
7.100.4.1 mpi_add_abs	603
7.100.4.2 mpi_add_int	603
7.100.4.3 mpi_add_mpi	603
7.100.4.4 mpi_cmp_abs	604
7.100.4.5 mpi_cmp_int	604
7.100.4.6 mpi_cmp_mpi	604
7.100.4.7 mpi_copy	604
7.100.4.8 mpi_div_int	605
7.100.4.9 mpi_div_mpi	605
7.100.4.10mpi_exp_mod	605
7.100.4.11mpi_free	606
7.100.4.12mpi_gcd	606
7.100.4.13mpi_gen_prime	606
7.100.4.14mpi_grow	606
7.100.4.15mpi_init	607
7.100.4.16mpi_inv_mod	607
7.100.4.17mpi_is_prime	607
7.100.4.18mpi_lsb	608
7.100.4.19mpi_lset	608
7.100.4.20mpi_mod_int	608
7.100.4.21mpi_mod_mpi	608
7.100.4.22mpi_msb	609
7.100.4.23mpi_mul_int	609
7.100.4.24mpi_mul_mpi	609
7.100.4.25mpi_read_binary	609
7.100.4.26mpi_read_file	610
7.100.4.27mpi_read_mystring	610
7.100.4.28mpi_read_string	610
7.100.4.29mpi_self_test	611
7.100.4.30mpi_shift_1	611
7.100.4.31mpi_shift_r	611
7.100.4.32mpi_size	611

7.100.4.33mpi_sub_abs	612
7.100.4.34mpi_sub_int	612
7.100.4.35mpi_sub_mpi	612
7.100.4.36mpi_swap	612
7.100.4.37mpi_write_binary	612
7.100.4.38mpi_write_file	613
7.100.4.39mpi_write_string	613
7.101/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bn_mul.h File Reference .	615
7.101.1 Detailed Description	615
7.101.2 Define Documentation	615
7.101.2.1 MULADD_CORE	615
7.101.2.2 MULADD_INIT	615
7.101.2.3 MULADD_STOP	616
7.102/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/certs.h File Reference .	617
7.102.1 Detailed Description	617
7.102.2 Variable Documentation	617
7.102.2.1 test_ca_crt	617
7.102.2.2 test_ca_key	617
7.102.2.3 test_ca_pwd	617
7.102.2.4 test_cli_crt	617
7.102.2.5 test_cli_key	617
7.102.2.6 test_srv_crt	618
7.102.2.7 test_srv_key	618
7.102.2.8 xyssl_ca_crt	618
7.103/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/debug.h File Reference .	619
7.103.1 Detailed Description	619
7.103.2 Define Documentation	619
7.103.2.1 SSL_DEBUG_BUF	619
7.103.2.2 SSL_DEBUG_CRT	620
7.103.2.3 SSL_DEBUG_MPI	620
7.103.2.4 SSL_DEBUG_MSG	620
7.103.2.5 SSL_DEBUG_RET	620
7.103.3 Function Documentation	620
7.103.3.1 debug_fmt	620
7.103.3.2 debug_print_buf	621
7.103.3.3 debug_print_crt	621

7.103.3.4 debug_print_mpi	621
7.103.3.5 debug_print_msg	621
7.103.3.6 debug_print_ret	621
7.104/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h File Reference . . .	622
7.104.1 Detailed Description	623
7.104.2 Define Documentation	623
7.104.2.1 DES_DECRYPT	623
7.104.2.2 DES_ENCRYPT	623
7.104.3 Function Documentation	623
7.104.3.1 des3_crypt_cbc	623
7.104.3.2 des3_crypt_ecb	623
7.104.3.3 des3_set2key_dec	624
7.104.3.4 des3_set2key_enc	624
7.104.3.5 des3_set3key_dec	624
7.104.3.6 des3_set3key_enc	625
7.104.3.7 des_crypt_cbc	625
7.104.3.8 des_crypt_ecb	625
7.104.3.9 des_self_test	626
7.104.3.10 des_setkey_dec	626
7.104.3.11 des_setkey_enc	626
7.105/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/dhm.h File Reference . . .	627
7.105.1 Detailed Description	627
7.105.2 Define Documentation	628
7.105.2.1 XYSSL_ERR_DHM_BAD_INPUT_DATA	628
7.105.2.2 XYSSL_ERR_DHM_CALC_SECRET_FAILED	628
7.105.2.3 XYSSL_ERR_DHM_MAKE_PARAMS_FAILED	628
7.105.2.4 XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED	628
7.105.2.5 XYSSL_ERR_DHM_READ_PARAMS_FAILED	628
7.105.2.6 XYSSL_ERR_DHM_READ_PUBLIC_FAILED	628
7.105.3 Function Documentation	628
7.105.3.1 dhm_calc_secret	628
7.105.3.2 dhm_free	629
7.105.3.3 dhm_make_params	629
7.105.3.4 dhm_make_public	629
7.105.3.5 dhm_read_params	630
7.105.3.6 dhm_read_public	630

7.105.3.7 dhm_self_test	631
7.106/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/havege.h File Reference	632
7.106.1 Detailed Description	632
7.106.2 Define Documentation	632
7.106.2.1 COLLECT_SIZE	632
7.106.3 Function Documentation	632
7.106.3.1 havege_init	632
7.106.3.2 havege_rand	633
7.107/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md2.h File Reference	634
7.107.1 Detailed Description	634
7.107.2 Function Documentation	635
7.107.2.1 md2	635
7.107.2.2 md2_file	635
7.107.2.3 md2_finish	635
7.107.2.4 md2_hmac	635
7.107.2.5 md2_hmac_finish	636
7.107.2.6 md2_hmac_starts	636
7.107.2.7 md2_hmac_update	636
7.107.2.8 md2_self_test	636
7.107.2.9 md2_starts	636
7.107.2.10 md2_update	637
7.108/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md4.h File Reference	638
7.108.1 Detailed Description	638
7.108.2 Function Documentation	639
7.108.2.1 md4	639
7.108.2.2 md4_file	639
7.108.2.3 md4_finish	639
7.108.2.4 md4_hmac	639
7.108.2.5 md4_hmac_finish	640
7.108.2.6 md4_hmac_starts	640
7.108.2.7 md4_hmac_update	640
7.108.2.8 md4_self_test	640
7.108.2.9 md4_starts	640
7.108.2.10 md4_update	641
7.109/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md5.h File Reference	642
7.109.1 Detailed Description	642

7.109.2 Function Documentation	643
7.109.2.1 md5	643
7.109.2.2 md5_file	643
7.109.2.3 md5_finish	643
7.109.2.4 md5_hmac	644
7.109.2.5 md5_hmac_finish	644
7.109.2.6 md5_hmac_starts	644
7.109.2.7 md5_hmac_update	645
7.109.2.8 md5_self_test	645
7.109.2.9 md5_starts	645
7.109.2.10 md5_update	645
7.110/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/net.h File Reference . . .	647
7.110.1 Detailed Description	647
7.110.2 Define Documentation	648
7.110.2.1 XYSSL_ERR_NET_ACCEPT_FAILED	648
7.110.2.2 XYSSL_ERR_NET_BIND_FAILED	648
7.110.2.3 XYSSL_ERR_NET_CONN_RESET	648
7.110.2.4 XYSSL_ERR_NET_CONNECT_FAILED	648
7.110.2.5 XYSSL_ERR_NET_LISTEN_FAILED	648
7.110.2.6 XYSSL_ERR_NET_RECV_FAILED	648
7.110.2.7 XYSSL_ERR_NET_SEND_FAILED	648
7.110.2.8 XYSSL_ERR_NET_SOCKET_FAILED	648
7.110.2.9 XYSSL_ERR_NET_TRY AGAIN	649
7.110.2.10 XYSSL_ERR_NET_UNKNOWN_HOST	649
7.110.3 Function Documentation	649
7.110.3.1 net_accept	649
7.110.3.2 net_bind	649
7.110.3.3 net_close	649
7.110.3.4 net_connect	650
7.110.3.5 net_recv	650
7.110.3.6 net_send	650
7.110.3.7 net_set_block	650
7.110.3.8 net_set_nonblock	651
7.110.3.9 net_usleep	651
7.111/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/openssl.h File Reference . . .	652
7.111.1 Detailed Description	653

7.111.2 Define Documentation	653
7.111.2.1 AES_BLOCK_SIZE	653
7.111.2.2 AES_cbc_encrypt	653
7.111.2.3 AES_KEY	653
7.111.2.4 AES_set_decrypt_key	653
7.111.2.5 AES_set_encrypt_key	653
7.111.2.6 AES_SIZE	653
7.111.2.7 d2i_RSAPrivateKey	653
7.111.2.8 ERR_get_error	653
7.111.2.9 MD5_CTX	653
7.111.2.10MD5_Final	654
7.111.2.11MD5_Init	654
7.111.2.12MD5_Update	654
7.111.2.13RSA	654
7.111.2.14RSA_blinding_off	654
7.111.2.15RSA_free	654
7.111.2.16RSA_PKCS1_PADDING	654
7.111.2.17RSA_size	654
7.111.2.18SHA1_Final	654
7.111.2.19SHA1_Init	654
7.111.2.20SHA1_Update	654
7.111.2.21SHA_CTX	655
7.111.3 Function Documentation	655
7.111.3.1 __RSA_Passthrough	655
7.111.3.2 d2i_RSA_PUBKEY	655
7.111.3.3 RSA_private_decrypt	655
7.111.3.4 RSA_private_encrypt	655
7.111.3.5 RSA_public_decrypt	655
7.111.3.6 RSA_public_encrypt	655
7.112/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h File Reference .	656
7.112.1 Detailed Description	656
7.113/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/rsa.h File Reference .	657
7.113.1 Detailed Description	658
7.113.2 Define Documentation	658
7.113.2.1 ASN1_HASH_MDX	658
7.113.2.2 ASN1_HASH_SHA1	659

7.113.2.3 RSA_CRYPT	659
7.113.2.4 RSA_MD2	659
7.113.2.5 RSA_MD4	659
7.113.2.6 RSA_MD5	659
7.113.2.7 RSA_PKCS_V15	659
7.113.2.8 RSA_PKCS_V21	659
7.113.2.9 RSA_PRIVATE	659
7.113.2.10RSA_PUBLIC	660
7.113.2.11RSA_RAW	660
7.113.2.12RSA_SHA1	660
7.113.2.13RSA_SHA256	660
7.113.2.14RSA_SIGN	660
7.113.2.15XYSSL_ERR_RSA_BAD_INPUT_DATA	660
7.113.2.16XYSSL_ERR_RSA_INVALID_PADDING	660
7.113.2.17XYSSL_ERR_RSA_KEY_CHECK_FAILED	660
7.113.2.18XYSSL_ERR_RSA_KEY_GEN_FAILED	661
7.113.2.19XYSSL_ERR_RSA_PRIVATE_FAILED	661
7.113.2.20XYSSL_ERR_RSA_PUBLIC_FAILED	661
7.113.2.21XYSSL_ERR_RSA_VERIFY_FAILED	661
7.113.3 Function Documentation	661
7.113.3.1 rsa_check_privkey	661
7.113.3.2 rsa_check_pubkey	661
7.113.3.3 rsa_free	662
7.113.3.4 rsa_gen_key	662
7.113.3.5 rsa_init	662
7.113.3.6 rsa_pkcs1_decrypt	663
7.113.3.7 rsa_pkcs1_encrypt	663
7.113.3.8 rsa_pkcs1_sign	664
7.113.3.9 rsa_pkcs1_verify	665
7.113.3.10rsa_private	665
7.113.3.11rsa_public	666
7.113.3.12rsa_self_test	666
7.114/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h File Reference . .	667
7.114.1 Detailed Description	667
7.114.2 Function Documentation	668
7.114.2.1 sha1	668

7.114.2.2 sha1_file	668
7.114.2.3 sha1_finish	668
7.114.2.4 sha1_hmac	669
7.114.2.5 sha1_hmac_finish	669
7.114.2.6 sha1_hmac_starts	669
7.114.2.7 sha1_hmac_update	670
7.114.2.8 sha1_self_test	670
7.114.2.9 sha1_starts	670
7.114.2.10sha1_update	670
7.115/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha2.h File Reference . .	672
7.115.1 Detailed Description	672
7.115.2 Function Documentation	673
7.115.2.1 sha2	673
7.115.2.2 sha2_file	673
7.115.2.3 sha2_finish	673
7.115.2.4 sha2_hmac	674
7.115.2.5 sha2_hmac_finish	674
7.115.2.6 sha2_hmac_starts	674
7.115.2.7 sha2_hmac_update	675
7.115.2.8 sha2_self_test	675
7.115.2.9 sha2_starts	675
7.115.2.10sha2_update	675
7.116/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha4.h File Reference . .	677
7.116.1 Detailed Description	678
7.116.2 Define Documentation	678
7.116.2.1 int64	678
7.116.2.2 UL64	678
7.116.3 Function Documentation	678
7.116.3.1 sha4	678
7.116.3.2 sha4_file	678
7.116.3.3 sha4_finish	679
7.116.3.4 sha4_hmac	679
7.116.3.5 sha4_hmac_finish	679
7.116.3.6 sha4_hmac_starts	680
7.116.3.7 sha4_hmac_update	680
7.116.3.8 sha4_self_test	680

7.116.3.9 sha4_starts	680
7.116.3.10sha4_update	681
7.117/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h File Reference . . .	682
7.117.1 Detailed Description	686
7.117.2 Define Documentation	686
7.117.2.1 SSL_ALERT_CLOSE_NOTIFY	686
7.117.2.2 SSL_ALERT_FATAL	686
7.117.2.3 SSL_ALERT_NO_CERTIFICATE	686
7.117.2.4 SSL_ALERT_WARNING	686
7.117.2.5 SSL_BUFFER_LEN	686
7.117.2.6 SSL_COMPRESS_NULL	686
7.117.2.7 SSL_EDH_RSA_AES_256_SHA	686
7.117.2.8 SSL_EDH_RSA DES_168_SHA	687
7.117.2.9 SSL_HS_CERTIFICATE	687
7.117.2.10SSL_HS_CERTIFICATE_REQUEST	687
7.117.2.11SSL_HS_CERTIFICATE_VERIFY	687
7.117.2.12SSL_HS_CLIENT_HELLO	687
7.117.2.13SSL_HS_CLIENT_KEY_EXCHANGE	687
7.117.2.14SSL_HS_FINISHED	687
7.117.2.15SSL_HS_HELLO_REQUEST	687
7.117.2.16SSL_HS_SERVER_HELLO	687
7.117.2.17SSL_HS_SERVER_HELLO_DONE	688
7.117.2.18SSL_HS_SERVER_KEY_EXCHANGE	688
7.117.2.19SSL_IS_CLIENT	688
7.117.2.20SSL_IS_SERVER	688
7.117.2.21SSL_MAJOR_VERSION_3	688
7.117.2.22SSL_MAX_CONTENT_LEN	688
7.117.2.23SSL_MINOR_VERSION_0	688
7.117.2.24SSL_MINOR_VERSION_1	688
7.117.2.25SSL_MINOR_VERSION_2	689
7.117.2.26SSL_MSG_ALERT	689
7.117.2.27SSL_MSG_APPLICATION_DATA	689
7.117.2.28SSL_MSG_CHANGE_CIPHER_SPEC	689
7.117.2.29SSL_MSG_HANDSHAKE	689
7.117.2.30SSL_RSA_AES_128_SHA	689
7.117.2.31SSL_RSA_AES_256_SHA	689

7.117.2.32SSL_RSA_DES_168_SHA	690
7.117.2.33SSL_RSA_RC4_128_MD5	690
7.117.2.34SSL_RSA_RC4_128_SHA	690
7.117.2.35SSL_VERIFY_NONE	690
7.117.2.36SSL_VERIFY_OPTIONAL	690
7.117.2.37SSL_VERIFY_REQUIRED	690
7.117.2.38TLS_EXT_SERVERNAME	690
7.117.2.39TLS_EXT_SERVERNAME_HOSTNAME	690
7.117.2.40XYSSL_ERR_SSL_BAD_HS_CERTIFICATE	690
7.117.2.41XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_REQUEST	691
7.117.2.42XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY	691
7.117.2.43XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC	691
7.117.2.44XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO	691
7.117.2.45XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_EXCHANGE	691
7.117.2.46XYSSL_ERR_SSL_BAD_HS_FINISHED	691
7.117.2.47XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO	691
7.117.2.48XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO_DONE	691
7.117.2.49XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_EXCHANGE	691
7.117.2.50XYSSL_ERR_SSL_BAD_INPUT_DATA	692
7.117.2.51XYSSL_ERR_SSL_CA_CHAIN_REQUIRED	692
7.117.2.52XYSSL_ERR_SSL_CERTIFICATE_REQUIRED	692
7.117.2.53XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE	692
7.117.2.54XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE	692
7.117.2.55XYSSL_ERR_SSL_FEATURE_UNAVAILABLE	692
7.117.2.56XYSSL_ERR_SSL_INVALID_MAC	692
7.117.2.57XYSSL_ERR_SSL_INVALID_MODULUS_SIZE	692
7.117.2.58XYSSL_ERR_SSL_INVALID_RECORD	692
7.117.2.59XYSSL_ERR_SSL_NO_CIPHER_CHOSEN	693
7.117.2.60XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE	693
7.117.2.61XYSSL_ERR_SSL_NO_SESSION_FOUND	693
7.117.2.62XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY	693
7.117.2.63XYSSL_ERR_SSL_PEER_VERIFY_FAILED	693
7.117.2.64XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED	693
7.117.2.65XYSSL_ERR_SSL_UNEXPECTED_MESSAGE	693
7.117.2.66XYSSL_ERR_SSL_UNKNOWN_CIPHER	693
7.117.3 Typedef Documentation	694

7.117.3.1 <code>ssl_context</code>	694
7.117.3.2 <code>ssl_session</code>	694
7.117.4 Enumeration Type Documentation	694
7.117.4.1 <code>ssl_states</code>	694
7.117.5 Function Documentation	694
7.117.5.1 <code>ssl_calc_verify</code>	694
7.117.5.2 <code>ssl_close_notify</code>	695
7.117.5.3 <code>ssl_derive_keys</code>	695
7.117.5.4 <code>ssl_fetch_input</code>	695
7.117.5.5 <code>ssl_flush_output</code>	695
7.117.5.6 <code>ssl_free</code>	695
7.117.5.7 <code>ssl_get_bytes_avail</code>	696
7.117.5.8 <code>ssl_get_cipher</code>	696
7.117.5.9 <code>ssl_get_verify_result</code>	696
7.117.5.10 <code>ssl_handshake</code>	697
7.117.5.11 <code>lssl_handshake_client</code>	697
7.117.5.12 <code>ssl_handshake_server</code>	697
7.117.5.13 <code>ssl_init</code>	697
7.117.5.14 <code>ssl_parse_certificate</code>	698
7.117.5.15 <code>ssl_parse_change_cipher_spec</code>	698
7.117.5.16 <code>ssl_parse_finished</code>	698
7.117.5.17 <code>ssl_read</code>	699
7.117.5.18 <code>ssl_read_record</code>	699
7.117.5.19 <code>ssl_set_authmode</code>	699
7.117.5.20 <code>ssl_set_bio</code>	700
7.117.5.21 <code>lssl_set_ca_chain</code>	700
7.117.5.22 <code>ssl_set_ciphers</code>	700
7.117.5.23 <code>ssl_set_dbg</code>	701
7.117.5.24 <code>ssl_set_dh_param</code>	701
7.117.5.25 <code>ssl_set_endpoint</code>	701
7.117.5.26 <code>ssl_set_hostname</code>	702
7.117.5.27 <code>ssl_set_own_cert</code>	702
7.117.5.28 <code>ssl_set_rng</code>	702
7.117.5.29 <code>ssl_set_scb</code>	703
7.117.5.30 <code>ssl_set_session</code>	703
7.117.5.31 <code>lssl_write</code>	703

7.117.5.32ssl_write_certificate	704
7.117.5.33ssl_write_change_cipher_spec	704
7.117.5.34ssl_write_finished	704
7.117.5.35ssl_write_record	704
7.117.6 Variable Documentation	705
7.117.6.1 ssl_default_ciphers	705
7.118/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h File Reference . .	706
7.118.1 Detailed Description	706
7.118.2 Function Documentation	706
7.118.2.1 get_timer	706
7.118.2.2 hardclock	707
7.118.2.3 m_sleep	707
7.118.2.4 set_alarm	707
7.118.3 Variable Documentation	707
7.118.3.1 alarmed	707
7.119/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h File Reference . .	708
7.119.1 Detailed Description	710
7.119.2 Define Documentation	710
7.119.2.1 ASN1_BIT_STRING	710
7.119.2.2 ASN1_BMP_STRING	710
7.119.2.3 ASN1_BOOLEAN	711
7.119.2.4 ASN1_CONSTRUCTED	711
7.119.2.5 ASN1_CONTEXT_SPECIFIC	711
7.119.2.6 ASN1_IA5_STRING	711
7.119.2.7 ASN1_INTEGER	711
7.119.2.8 ASN1_NULL	711
7.119.2.9 ASN1_OCTET_STRING	711
7.119.2.10 ASN1_OID	711
7.119.2.11 ASN1_PRIMITIVE	711
7.119.2.12 ASN1_PRINTABLE_STRING	712
7.119.2.13 ASN1_SEQUENCE	712
7.119.2.14 ASN1_SET	712
7.119.2.15 ASN1_T61_STRING	712
7.119.2.16 ASN1_UNIVERSAL_STRING	712
7.119.2.17 ASN1_UTC_TIME	712
7.119.2.18 ASN1_UTF8_STRING	712

7.119.2.19BADCERT_CN_MISMATCH	712
7.119.2.20BADCERT_EXPIRED	713
7.119.2.21BADCERT_NOT_TRUSTED	713
7.119.2.22BADCERT_REVOKED	713
7.119.2.23OID_CN	713
7.119.2.24OID_PKCS1	713
7.119.2.25OID_PKCS1_RSA	713
7.119.2.26OID_PKCS1_RSA_SHA	713
7.119.2.27OID_PKCS9	713
7.119.2.28OID_PKCS9_EMAIL	713
7.119.2.29OID_X520	714
7.119.2.30PEM_LINE_LENGTH	714
7.119.2.31PKCS9_EMAIL	714
7.119.2.32X509_ISSUER	714
7.119.2.33X509_OUTPUT_DER	714
7.119.2.34X509_OUTPUT_PEM	714
7.119.2.35X509 SUBJECT	714
7.119.2.36X520_COMMON_NAME	714
7.119.2.37X520_COUNTRY	714
7.119.2.38X520_LOCALITY	714
7.119.2.39X520_ORG_UNIT	715
7.119.2.40X520_ORGANIZATION	715
7.119.2.41X520_STATE	715
7.119.2.42XYSSL_ERR ASN1_INVALID_DATA	715
7.119.2.43XYSSL_ERR ASN1_INVALID_LENGTH	715
7.119.2.44XYSSL_ERR ASN1_LENGTH_MISMATCH	715
7.119.2.45XYSSL_ERR ASN1_OUT_OF_DATA	715
7.119.2.46XYSSL_ERR ASN1_UNEXPECTED_TAG	715
7.119.2.47XYSSL_ERR X509_CERT_INVALID_ALG	716
7.119.2.48XYSSL_ERR X509_CERT_INVALID_DATE	716
7.119.2.49XYSSL_ERR X509_CERT_INVALID_EXTENSIONS	716
7.119.2.50XYSSL_ERR X509_CERT_INVALID_FORMAT	716
7.119.2.51XYSSL_ERR X509_CERT_INVALID_NAME	716
7.119.2.52XYSSL_ERR X509_CERT_INVALID_PEM	716
7.119.2.53XYSSL_ERR X509_CERT_INVALID_PUBKEY	716
7.119.2.54XYSSL_ERR X509_CERT_INVALID_SERIAL	716

7.119.2.55XYSSL_ERR_X509_CERT_INVALID_SIGNATURE	716
7.119.2.56XYSSL_ERR_X509_CERT_INVALID_VERSION	717
7.119.2.57XYSSL_ERR_X509_CERT_SIG_MISMATCH	717
7.119.2.58XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG	717
7.119.2.59XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG	717
7.119.2.60XYSSL_ERR_X509_CERT_UNKNOWN_VERSION	717
7.119.2.61XYSSL_ERR_X509_CERT_VERIFY_FAILED	717
7.119.2.62XYSSL_ERR_X509_FEATURE_UNAVAILABLE	717
7.119.2.63XYSSL_ERR_X509_KEY_INVALID_ENC_IV	717
7.119.2.64XYSSL_ERR_X509_KEY_INVALID_FORMAT	717
7.119.2.65XYSSL_ERR_X509_KEY_INVALID_PEM	718
7.119.2.66XYSSL_ERR_X509_KEY_INVALID_VERSION	718
7.119.2.67XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH	718
7.119.2.68XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED	718
7.119.2.69XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG	718
7.119.2.70XYSSL_ERR_X509_POINT_ERROR	718
7.119.2.71XYSSL_ERR_X509_VALUE_TO_LENGTH	718
7.119.3 Typedef Documentation	719
7.119.3.1 x509_buf	719
7.119.3.2 x509_cert	719
7.119.3.3 x509_name	719
7.119.3.4 x509_node	719
7.119.3.5 x509_raw	719
7.119.3.6 x509_time	719
7.119.4 Function Documentation	719
7.119.4.1 x509_free	719
7.119.4.2 x509_self_test	719
7.119.4.3 x509parse_cert_info	719
7.119.4.4 x509parse_crt	720
7.119.4.5 x509parse_crtfile	720
7.119.4.6 x509parse_dn_gets	720
7.119.4.7 x509parse_expired	721
7.119.4.8 x509parse_key	721
7.119.4.9 x509parse_keyfile	721
7.119.4.10x509parse_verify	722
7.120/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/aes.c File Reference	723

7.120.1 Define Documentation	724
7.120.1.1 AES_FROUND	724
7.120.1.2 AES_RROUND	725
7.120.1.3 GET ULONG LE	725
7.120.1.4 MUL	725
7.120.1.5 PUT ULONG LE	725
7.120.1.6 ROTL8	726
7.120.1.7 XTIME	726
7.120.2 Function Documentation	726
7.120.2.1 aes_crypt_cbc	726
7.120.2.2 aes_crypt_cfb	726
7.120.2.3 aes_crypt_ecb	727
7.120.2.4 aes_gen_tables	727
7.120.2.5 aes_self_test	727
7.120.2.6 aes_setkey_dec	727
7.120.2.7 aes_setkey_enc	728
7.120.3 Variable Documentation	728
7.120.3.1 aes_init_done	728
7.120.3.2 aes_test_cbc_dec	728
7.120.3.3 aes_test_cbc_enc	729
7.120.3.4 aes_test_cfb_dec	729
7.120.3.5 aes_test_cfb_enc	729
7.120.3.6 aes_test_ecb_dec	729
7.120.3.7 aes_test_ecb_enc	730
7.120.3.8 FSb	730
7.120.3.9 FT0	730
7.120.3.10FT1	730
7.120.3.11FT2	730
7.120.3.12FT3	731
7.120.3.13RCON	731
7.120.3.14RSb	731
7.120.3.15RT0	731
7.120.3.16RT1	731
7.120.3.17RT2	731
7.120.3.18RT3	731
7.121 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/arc4.c File Reference	732

7.121.1 Function Documentation	732
7.121.1.1 arc4_crypt	732
7.121.1.2 arc4_self_test	732
7.121.1.3 arc4_setup	733
7.121.2 Variable Documentation	733
7.121.2.1 arc4_test_ct	733
7.121.2.2 arc4_test_key	733
7.121.2.3 arc4_test_pt	733
7.122/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/base64.c File Reference	735
7.122.1 Function Documentation	735
7.122.1.1 base64_decode	735
7.122.1.2 base64_encode	736
7.122.1.3 base64_self_test	736
7.122.2 Variable Documentation	736
7.122.2.1 base64_dec_map	736
7.122.2.2 base64_enc_map	737
7.122.2.3 base64_test_dec	737
7.122.2.4 base64_test_enc	737
7.123/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/bignum.c File Reference	739
7.123.1 Define Documentation	742
7.123.1.1 biH	742
7.123.1.2 biL	742
7.123.1.3 BITS_TO_LIMBS	742
7.123.1.4 CHARS_TO_LIMBS	742
7.123.1.5 ciL	742
7.123.2 Function Documentation	742
7.123.2.1 mpi_add_abs	742
7.123.2.2 mpi_add_int	742
7.123.2.3 mpi_add_mpi	743
7.123.2.4 mpi_cmp_abs	743
7.123.2.5 mpi_cmp_int	743
7.123.2.6 mpi_cmp_mpi	743
7.123.2.7 mpi_copy	744
7.123.2.8 mpi_div_int	744
7.123.2.9 mpi_div_mpi	744
7.123.2.10mpi_exp_mod	745

7.123.2.1 <code>lmpi_free</code>	745
7.123.2.12 <code>mpi_gcd</code>	745
7.123.2.13 <code>mpi_gen_prime</code>	746
7.123.2.14 <code>mpi_get_digit</code>	746
7.123.2.15 <code>mpi_grow</code>	746
7.123.2.16 <code>mpi_init</code>	746
7.123.2.17 <code>mpi_inv_mod</code>	747
7.123.2.18 <code>mpi_is_prime</code>	747
7.123.2.19 <code>mpi_lsb</code>	747
7.123.2.20 <code>mpi_lset</code>	747
7.123.2.21 <code>lmpi_mod_int</code>	748
7.123.2.22 <code>mpi_mod_mpi</code>	748
7.123.2.23 <code>mpi_montg_init</code>	748
7.123.2.24 <code>mpi_montmul</code>	748
7.123.2.25 <code>mpi_montred</code>	749
7.123.2.26 <code>mpi_msb</code>	749
7.123.2.27 <code>mpi_mul_hlp</code>	749
7.123.2.28 <code>mpi_mul_int</code>	749
7.123.2.29 <code>mpi_mul_mpi</code>	749
7.123.2.30 <code>mpi_read_binary</code>	750
7.123.2.31 <code>lmpi_read_file</code>	750
7.123.2.32 <code>mpi_read_mystring</code>	750
7.123.2.33 <code>mpi_read_string</code>	750
7.123.2.34 <code>mpi_self_test</code>	751
7.123.2.35 <code>mpi_shift_1</code>	751
7.123.2.36 <code>mpi_shift_r</code>	751
7.123.2.37 <code>mpi_size</code>	752
7.123.2.38 <code>mpi_sub_abs</code>	752
7.123.2.39 <code>mpi_sub_hlp</code>	752
7.123.2.40 <code>mpi_sub_int</code>	752
7.123.2.41 <code>lmpi_sub_mpi</code>	752
7.123.2.42 <code>mpi_swap</code>	753
7.123.2.43 <code>mpi_write_binary</code>	753
7.123.2.44 <code>mpi_write_file</code>	753
7.123.2.45 <code>mpi_write_hlp</code>	754
7.123.2.46 <code>mpi_write_string</code>	754

7.123.3 Variable Documentation	754
7.123.3.1 small_prime	754
7.124/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c File Reference	756
7.124.1 Variable Documentation	756
7.124.1.1 test_ca_crt	756
7.124.1.2 test_ca_key	756
7.124.1.3 test_ca_pwd	757
7.124.1.4 test_cli_crt	757
7.124.1.5 test_cli_key	757
7.124.1.6 test_srv_crt	758
7.124.1.7 test_srv_key	758
7.124.1.8 xyssl_ca_crt	759
7.125/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/debug.c File Reference	760
7.125.1 Function Documentation	760
7.125.1.1 debug_fmt	760
7.125.1.2 debug_print_buf	760
7.125.1.3 debug_print_crt	760
7.125.1.4 debug_print_mpi	760
7.125.1.5 debug_print_msg	761
7.125.1.6 debug_print_ret	761
7.126/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/des.c File Reference	762
7.126.1 Define Documentation	763
7.126.1.1 DES_FP	763
7.126.1.2 DES_IP	764
7.126.1.3 DES_ROUND	764
7.126.1.4 GET ULONG_BE	764
7.126.1.5 PUT ULONG_BE	764
7.126.1.6 SWAP	765
7.126.2 Function Documentation	765
7.126.2.1 des3_crypt_cbc	765
7.126.2.2 des3_crypt_ecb	765
7.126.2.3 des3_set2key	766
7.126.2.4 des3_set2key_dec	766
7.126.2.5 des3_set2key_enc	766
7.126.2.6 des3_set3key	766
7.126.2.7 des3_set3key_dec	766

7.126.2.8 des3_set3key_enc	767
7.126.2.9 des_crypt_cbc	767
7.126.2.10des_crypt_ecb	767
7.126.2.11des_self_test	768
7.126.2.12des_setkey	768
7.126.2.13des_setkey_dec	768
7.126.2.14des_setkey_enc	768
7.126.3 Variable Documentation	769
7.126.3.1 des3_test_buf	769
7.126.3.2 des3_test_cbc_dec	769
7.126.3.3 des3_test_cbc_enc	769
7.126.3.4 des3_test_ecb_dec	769
7.126.3.5 des3_test_ecb_enc	770
7.126.3.6 des3_test_iv	770
7.126.3.7 des3_test_keys	770
7.126.3.8 LHS	770
7.126.3.9 RHS	771
7.126.3.10SB1	771
7.126.3.11SB2	771
7.126.3.12SB3	772
7.126.3.13SB4	772
7.126.3.14SB5	772
7.126.3.15SB6	773
7.126.3.16SB7	773
7.126.3.17SB8	774
7.127/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/dhm.c File Reference	775
7.127.1 Define Documentation	775
7.127.1.1 DHM_MPI_EXPORT	775
7.127.2 Function Documentation	776
7.127.2.1 dhm_calc_secret	776
7.127.2.2 dhm_free	776
7.127.2.3 dhm_make_params	776
7.127.2.4 dhm_make_public	777
7.127.2.5 dhm_read_bignum	777
7.127.2.6 dhm_read_params	777
7.127.2.7 dhm_read_public	778

7.127.2.8 dhm_self_test	778
7.128/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/havege.c File Reference	779
7.128.1 Define Documentation	779
7.128.1.1 ONE_ITERATION	779
7.128.1.2 SWAP	779
7.128.1.3 TST1_ENTER	779
7.128.1.4 TST1_LEAVE	779
7.128.1.5 TST2_ENTER	780
7.128.1.6 TST2_LEAVE	780
7.128.2 Function Documentation	780
7.128.2.1 havege_fill	780
7.128.2.2 havege_init	780
7.128.2.3 havege_rand	780
7.129/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c File Reference	781
7.130/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c File Reference	782
7.131/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md5.c File Reference	783
7.131.1 Define Documentation	784
7.131.1.1 F	784
7.131.1.2 F	784
7.131.1.3 F	784
7.131.1.4 F	784
7.131.1.5 GET ULONG LE	784
7.131.1.6 P	784
7.131.1.7 PUT ULONG LE	785
7.131.1.8 S	785
7.131.2 Function Documentation	785
7.131.2.1 md5	785
7.131.2.2 md5_file	785
7.131.2.3 md5_finish	786
7.131.2.4 md5_hmac	786
7.131.2.5 md5_hmac_finish	786
7.131.2.6 md5_hmac_starts	787
7.131.2.7 md5_hmac_update	787
7.131.2.8 md5_process	787
7.131.2.9 md5_self_test	787
7.131.2.10 md5_starts	788

7.131.2.1 lmd5_update	788
7.131.3 Variable Documentation	788
7.131.3.1 md5_hmac_test_buf	788
7.131.3.2 md5_hmac_test buflen	789
7.131.3.3 md5_hmac_test_key	789
7.131.3.4 md5_hmac_test_keylen	789
7.131.3.5 md5_hmac_test_sum	789
7.131.3.6 md5_padding	790
7.131.3.7 md5_test_buf	790
7.131.3.8 md5_test buflen	790
7.131.3.9 md5_test_sum	791
7.132/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/net.c File Reference	792
7.132.1 Function Documentation	793
7.132.1.1 net_accept	793
7.132.1.2 net_bind	793
7.132.1.3 net_close	793
7.132.1.4 net_connect	793
7.132.1.5 net_htons	794
7.132.1.6 net_is_blocking	794
7.132.1.7 net_recv	794
7.132.1.8 net_send	794
7.132.1.9 net_set_block	795
7.132.1.10 net_set_nonblock	795
7.132.1.11 lnet_usleep	795
7.133/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/padlock.c File Reference	796
7.134/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/rsa.c File Reference	797
7.134.1 Define Documentation	798
7.134.1.1 KEY_LEN	798
7.134.1.2 PT_LEN	798
7.134.1.3 RSA_D	798
7.134.1.4 RSA_DP	799
7.134.1.5 RSA_DQ	799
7.134.1.6 RSA_E	799
7.134.1.7 RSA_N	799
7.134.1.8 RSA_P	799
7.134.1.9 RSA_PT	800

7.134.1.10RSA_Q	800
7.134.1.11RSA_QP	800
7.134.2 Function Documentation	800
7.134.2.1 rsa_check_privkey	800
7.134.2.2 rsa_check_pubkey	801
7.134.2.3 rsa_free	801
7.134.2.4 rsa_gen_key	801
7.134.2.5 rsa_init	802
7.134.2.6 rsa_pkcs1_decrypt	802
7.134.2.7 rsa_pkcs1_encrypt	803
7.134.2.8 rsa_pkcs1_sign	803
7.134.2.9 rsa_pkcs1_verify	804
7.134.2.10rsa_private	804
7.134.2.11rsa_public	805
7.134.2.12rsa_self_test	805
7.135/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha1.c File Reference	807
7.135.1 Define Documentation	808
7.135.1.1 F	808
7.135.1.2 F	808
7.135.1.3 F	808
7.135.1.4 F	808
7.135.1.5 GET ULONG_BE	808
7.135.1.6 K	809
7.135.1.7 K	809
7.135.1.8 K	809
7.135.1.9 K	809
7.135.1.10P	809
7.135.1.11PUT ULONG_BE	809
7.135.1.12R	809
7.135.1.13S	809
7.135.2 Function Documentation	809
7.135.2.1 sha1	809
7.135.2.2 sha1_file	810
7.135.2.3 sha1_finish	810
7.135.2.4 sha1_hmac	810
7.135.2.5 sha1_hmac_finish	811

7.135.2.6 sha1_hmac_starts	811
7.135.2.7 sha1_hmac_update	811
7.135.2.8 sha1_process	812
7.135.2.9 sha1_self_test	812
7.135.2.10sha1_starts	812
7.135.2.11sha1_update	812
7.135.3 Variable Documentation	813
7.135.3.1 sha1_hmac_test_buf	813
7.135.3.2 sha1_hmac_test buflen	813
7.135.3.3 sha1_hmac_test_key	813
7.135.3.4 sha1_hmac_test_keylen	814
7.135.3.5 sha1_hmac_test_sum	814
7.135.3.6 sha1_padding	814
7.135.3.7 sha1_test_buf	815
7.135.3.8 sha1_test buflen	815
7.135.3.9 sha1_test_sum	815
7.136/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha2.c File Reference	816
7.136.1 Define Documentation	817
7.136.1.1 F0	817
7.136.1.2 F1	817
7.136.1.3 GET ULONG_BE	817
7.136.1.4 P	817
7.136.1.5 PUT ULONG_BE	818
7.136.1.6 R	818
7.136.1.7 ROTR	818
7.136.1.8 S0	818
7.136.1.9 S1	818
7.136.1.10S2	818
7.136.1.11S3	818
7.136.1.12SHR	818
7.136.2 Function Documentation	818
7.136.2.1 sha2	818
7.136.2.2 sha2_file	819
7.136.2.3 sha2_finish	819
7.136.2.4 sha2_hmac	819
7.136.2.5 sha2_hmac_finish	820

7.136.2.6 sha2_hmac_starts	820
7.136.2.7 sha2_hmac_update	820
7.136.2.8 sha2_process	821
7.136.2.9 sha2_self_test	821
7.136.2.10 sha2_starts	821
7.136.2.11 lsha2_update	821
7.136.3 Variable Documentation	822
7.136.3.1 sha2_hmac_test_buf	822
7.136.3.2 sha2_hmac_test buflen	822
7.136.3.3 sha2_hmac_test_key	822
7.136.3.4 sha2_hmac_test_keylen	823
7.136.3.5 sha2_hmac_test_sum	823
7.136.3.6 sha2_padding	823
7.136.3.7 sha2_test_buf	823
7.136.3.8 sha2_test buflen	823
7.136.3.9 sha2_test_sum	824
7.137/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha4.c File Reference	825
7.137.1 Define Documentation	826
7.137.1.1 F0	826
7.137.1.2 F1	826
7.137.1.3 GET_UINT64_BE	826
7.137.1.4 P	826
7.137.1.5 PUT_UINT64_BE	827
7.137.1.6 ROTR	827
7.137.1.7 S0	827
7.137.1.8 S1	827
7.137.1.9 S2	827
7.137.1.10 S3	827
7.137.1.11 ISHR	827
7.137.2 Function Documentation	827
7.137.2.1 sha4	827
7.137.2.2 sha4_file	828
7.137.2.3 sha4_finish	828
7.137.2.4 sha4_hmac	828
7.137.2.5 sha4_hmac_finish	829
7.137.2.6 sha4_hmac_starts	829

7.137.2.7 sha4_hmac_update	829
7.137.2.8 sha4_process	829
7.137.2.9 sha4_self_test	830
7.137.2.10 sha4_starts	830
7.137.2.11 sha4_update	830
7.137.3 Variable Documentation	830
7.137.3.1 K	830
7.137.3.2 sha4_hmac_test_buf	831
7.137.3.3 sha4_hmac_test buflen	831
7.137.3.4 sha4_hmac_test_key	831
7.137.3.5 sha4_hmac_test_keylen	832
7.137.3.6 sha4_hmac_test_sum	832
7.137.3.7 sha4_padding	832
7.137.3.8 sha4_test_buf	832
7.137.3.9 sha4_test buflen	833
7.137.3.10 sha4_test_sum	833
7.138/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_cli.c File Reference	834
7.138.1 Function Documentation	834
7.138.1.1 ssl_handshake_client	834
7.138.1.2 ssl_parse_certificate_request	834
7.138.1.3 ssl_parse_server_hello	835
7.138.1.4 ssl_parse_server_hello_done	835
7.138.1.5 ssl_parse_server_key_exchange	835
7.138.1.6 ssl_write_certificate_verify	835
7.138.1.7 ssl_write_client_hello	836
7.138.1.8 ssl_write_client_key_exchange	836
7.139/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_srv.c File Reference	837
7.139.1 Function Documentation	837
7.139.1.1 ssl_handshake_server	837
7.139.1.2 ssl_parse_certificate_verify	837
7.139.1.3 ssl_parse_client_hello	838
7.139.1.4 ssl_parse_client_key_exchange	838
7.139.1.5 ssl_write_certificate_request	838
7.139.1.6 ssl_write_server_hello	838
7.139.1.7 ssl_write_server_hello_done	839
7.139.1.8 ssl_write_server_key_exchange	839

7.140/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_tls.c File Reference	840
7.140.1 Function Documentation	842
7.140.1.1 ssl_calc_finished	842
7.140.1.2 ssl_calc_verify	842
7.140.1.3 ssl_close_notify	842
7.140.1.4 ssl_decrypt_buf	842
7.140.1.5 ssl_derive_keys	843
7.140.1.6 ssl_encrypt_buf	843
7.140.1.7 ssl_fetch_input	843
7.140.1.8 ssl_flush_output	843
7.140.1.9 ssl_free	844
7.140.1.10ssl_get_bytes_avail	844
7.140.1.11ssl_get_cipher	844
7.140.1.12ssl_get_verify_result	844
7.140.1.13ssl_handshake	845
7.140.1.14ssl_init	845
7.140.1.15ssl_mac_md5	845
7.140.1.16ssl_mac_sha1	846
7.140.1.17ssl_parse_certificate	846
7.140.1.18ssl_parse_change_cipher_spec	846
7.140.1.19ssl_parse_finished	846
7.140.1.20ssl_read	846
7.140.1.21ssl_read_record	847
7.140.1.22ssl_set_authmode	847
7.140.1.23ssl_set_bio	848
7.140.1.24ssl_set_ca_chain	848
7.140.1.25ssl_set_ciphers	848
7.140.1.26ssl_set_dbg	849
7.140.1.27ssl_set_dh_param	849
7.140.1.28ssl_set_endpoint	849
7.140.1.29ssl_set_hostname	850
7.140.1.30ssl_set_own_cert	850
7.140.1.31ssl_set_rng	850
7.140.1.32ssl_set_scb	851
7.140.1.33ssl_set_session	851
7.140.1.34ssl_write	851

7.140.1.35ssl_write_certificate	852
7.140.1.36ssl_write_change_cipher_spec	852
7.140.1.37ssl_write_finished	852
7.140.1.38ssl_write_record	852
7.140.1.39ls1_prf	853
7.140.2 Variable Documentation	853
7.140.2.1 ssl_default_ciphers	853
7.141/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/timing.c File Reference	854
7.141.1 Function Documentation	854
7.141.1.1 get_timer	854
7.141.1.2 hardclock	855
7.141.1.3 m_sleep	855
7.141.1.4 set_alarm	855
7.141.1.5 sighandler	855
7.141.2 Variable Documentation	855
7.141.2.1 alarmed	855
7.141.2.2 hardclock_init	855
7.141.2.3 tv_init	856
7.142/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/x509parse.c File Reference	857
7.142.1 Function Documentation	858
7.142.1.1 asn1_get_bool	858
7.142.1.2 asn1_get_int	858
7.142.1.3 asn1_get_len	858
7.142.1.4 asn1_get_mpi	859
7.142.1.5 asn1_get_tag	859
7.142.1.6 x509_des3_decrypt	859
7.142.1.7 x509_free	859
7.142.1.8 x509_get_alg	859
7.142.1.9 x509_get_dates	859
7.142.1.10x509_get_ext	860
7.142.1.11x509_get_iv	860
7.142.1.12x509_get_name	860
7.142.1.13x509_get_pubkey	860
7.142.1.14x509_get_serial	861
7.142.1.15x509_get_sig	861
7.142.1.16x509_get_uid	861

7.142.1.17x509_get_version	861
7.142.1.18x509_hash	861
7.142.1.19x509_self_test	861
7.142.1.20x509parse_cert_info	862
7.142.1.21x509parse_crt	862
7.142.1.22x509parse_crtfile	863
7.142.1.23x509parse_dn_gets	863
7.142.1.24x509parse_expired	863
7.142.1.25x509parse_key	863
7.142.1.26x509parse_keyfile	864
7.142.1.27x509parse_verify	864
7.143/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/aes/aescrypt2.c File Reference	866
7.143.1 Define Documentation	866
7.143.1.1 MODE_DECRYPT	866
7.143.1.2 MODE_ENCRYPT	866
7.143.1.3 USAGE	866
7.143.2 Function Documentation	867
7.143.2.1 main	867
7.144/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/hello.c File Reference	868
7.144.1 Function Documentation	868
7.144.1.1 main	868
7.145/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/md5sum.c File Reference	869
7.145.1 Function Documentation	869
7.145.1.1 main	869
7.145.1.2 md5_check	869
7.145.1.3 md5_print	869
7.145.1.4 md5_wrapper	869
7.146/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha1sum.c File Reference	870
7.146.1 Function Documentation	870
7.146.1.1 main	870
7.146.1.2 sha1_check	870
7.146.1.3 sha1_print	870
7.146.1.4 sha1_wrapper	870
7.147/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha2sum.c File Reference	871
7.147.1 Function Documentation	871
7.147.1.1 main	871

7.147.1.2 sha2_check	871
7.147.1.3 sha2_print	871
7.147.1.4 sha2_wrapper	871
7.148/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_client.c File Reference	872
7.148.1 Define Documentation	872
7.148.1.1 SERVER_NAME	872
7.148.1.2 SERVER_PORT	872
7.148.2 Function Documentation	872
7.148.2.1 main	872
7.149/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_genprime.c File Reference	873
7.149.1 Define Documentation	873
7.149.1.1 DH_P_SIZE	873
7.149.1.2 GENERATOR	873
7.149.2 Function Documentation	873
7.149.2.1 main	873
7.150/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_server.c File Reference	874
7.150.1 Define Documentation	874
7.150.1.1 PLAINTEXT	874
7.150.1.2 SERVER_PORT	874
7.150.2 Function Documentation	874
7.150.2.1 main	874
7.151/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/mpi_demo.c File Reference	875
7.151.1 Function Documentation	875
7.151.1.1 main	875
7.152/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_genkey.c File Reference	876
7.152.1 Define Documentation	876
7.152.1.1 EXPONENT	876
7.152.1.2 KEY_SIZE	876
7.152.2 Function Documentation	876
7.152.2.1 main	876
7.153/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_sign.c File Reference	877
7.153.1 Function Documentation	877
7.153.1.1 main	877

7.154/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_verify.c File Reference	878
7.154.1 Function Documentation	878
7.154.1.1 main	878
7.155/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client1.c File Reference	879
7.155.1 Define Documentation	879
7.155.1.1 DEBUG_LEVEL	879
7.155.1.2 GET_REQUEST	879
7.155.1.3 SERVER_NAME	879
7.155.1.4 SERVER_PORT	879
7.155.2 Function Documentation	880
7.155.2.1 main	880
7.155.2.2 my_debug	880
7.156/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client2.c File Reference	881
7.156.1 Define Documentation	881
7.156.1.1 DEBUG_LEVEL	881
7.156.1.2 GET_REQUEST	881
7.156.1.3 SERVER_NAME	881
7.156.1.4 SERVER_PORT	881
7.156.2 Function Documentation	882
7.156.2.1 main	882
7.156.2.2 my_debug	882
7.157/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_server.c File Reference	883
7.157.1 Define Documentation	883
7.157.1.1 DEBUG_LEVEL	883
7.157.1.2 HTTP_RESPONSE	883
7.157.2 Function Documentation	884
7.157.2.1 main	884
7.157.2.2 my_debug	884
7.157.2.3 my_get_session	884
7.157.2.4 my_set_session	884
7.157.3 Variable Documentation	884
7.157.3.1 cur	884
7.157.3.2 my_ciphers	884
7.157.3.3 my_dhm_G	885
7.157.3.4 my_dhm_P	885
7.157.3.5 prv	885

7.157.3.6 s_list_1st	885
7.158/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/benchmark.c File Reference	886
7.158.1 Define Documentation	886
7.158.1.1 BUFSIZE	886
7.158.2 Function Documentation	886
7.158.2.1 main	886
7.158.2.2 myrand	887
7.158.3 Variable Documentation	887
7.158.3.1 buf	887
7.159/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/selftest.c File Reference	888
7.159.1 Function Documentation	888
7.159.1.1 main	888
7.160/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c File Reference	889
7.160.1 Define Documentation	890
7.160.1.1 COMMAND_BOTH	890
7.160.1.2 COMMAND_READ	890
7.160.1.3 COMMAND_WRITE	890
7.160.1.4 DFL_BUFFER_SIZE	890
7.160.1.5 DFL_COMMAND	890
7.160.1.6 DFL_CONN_TIMEOUT	890
7.160.1.7 DFL_DEBUG_LEVEL	890
7.160.1.8 DFL_FORCE_CIPHER	891
7.160.1.9 DFL_IOMODE	891
7.160.1.10 DFL_MAX_BYTES	891
7.160.1.11 DFL_MAX_CONNECTIONS	891
7.160.1.12 DFL_OPMODE	891
7.160.1.13 DFL_SERVER_NAME	891
7.160.1.14 DFL_SERVER_PORT	891
7.160.1.15 DFL_SESSION_LIFETIME	891
7.160.1.16 DFL_SESSION_REUSE	891
7.160.1.17 IOMODE_BLOCK	892
7.160.1.18 IOMODE_NONBLOCK	892
7.160.1.19 OPMODE_CLIENT	892
7.160.1.20 OPMODE_NONE	892
7.160.1.21 OPMODE_SERVER	892
7.160.1.22 USAGE	892

7.160.2 Function Documentation	893
7.160.2.1 lc ppm5	893
7.160.2.2 main	893
7.160.2.3 my_debug	893
7.160.2.4 ssl_test	893
7.160.3 Variable Documentation	893
7.160.3.1 d hm_G	893
7.160.3.2 d hm_P	894
7.160.3.3 server_fd	894
7.161/home/dko/Projects/mobilec/src/util/mc_genkey.c File Reference	895
7.161.1 Function Documentation	895
7.161.1.1 main	895
7.161.1.2 print_usage	895
7.162/home/dko/Projects/mobilec/src/xml_compose.c File Reference	896
7.162.1 Function Documentation	896
7.162.1.1 agent_xml_compose	896
7.162.1.2 agent_xml_compose__agent_code	896
7.162.1.3 agent_xml_compose__agent_data	897
7.162.1.4 agent_xml_compose__create_row_nodes	897
7.162.1.5 agent_xml_compose__data	897
7.162.1.6 agent_xml_compose__file	897
7.162.1.7 agent_xml_compose__gaf_message	897
7.162.1.8 agent_xml_compose__home	897
7.162.1.9 agent_xml_compose__message	898
7.162.1.10 agent_xml_compose__mobile_agent	898
7.162.1.11 agent_xml_compose__name	898
7.162.1.12 agent_xml_compose__owner	898
7.162.1.13 agent_xml_compose__row	898
7.162.1.14 agent_xml_compose__task	898
7.162.1.15 agent_xml_compose__tasks	899
7.162.1.16 agent_xml_compose__wg_code	899
7.163/home/dko/Projects/mobilec/src/xml_helper.c File Reference	900
7.163.1 Function Documentation	900
7.163.1.1 whitespace_cb	900
7.163.1.2 xml_find_sibling	900
7.163.1.3 xml_get_cdata	900

7.163.1.4 <code>xml_get_child</code>	901
7.163.1.5 <code>xml_get_deep_child</code>	901
7.163.1.6 <code>xml_get_element_name</code>	901
7.163.1.7 <code>xml_get_next_element</code>	901
7.163.1.8 <code>xml_get_text</code>	901
7.163.1.9 <code>xml_new_cdata</code>	901
7.164/ home/dko/Projects/mobilec/src/xml_parser.c File Reference	902
7.164.1 Define Documentation	902
7.164.1.1 <code>_XOPEN_SOURCE</code>	902
7.164.2 Function Documentation	903
7.164.2.1 <code>agent_return_xml_parse</code>	903
7.164.2.2 <code>agent_xml_parse</code>	903
7.164.2.3 <code>agent_xml_parse__agent_code</code>	903
7.164.2.4 <code>agent_xml_parse__agent_data</code>	903
7.164.2.5 <code>agent_xml_parse__data</code>	903
7.164.2.6 <code>agent_xml_parse__file</code>	904
7.164.2.7 <code>agent_xml_parse__fill_row_data</code>	904
7.164.2.8 <code>agent_xml_parse__home</code>	904
7.164.2.9 <code>agent_xml_parse__mobile_agent</code>	904
7.164.2.10 <code>agent_xml_parse__name</code>	904
7.164.2.11 <code>agent_xml_parse__owner</code>	904
7.164.2.12 <code>agent_xml_parse__row</code>	905
7.164.2.13 <code>agent_xml_parse__sender</code>	905
7.164.2.14 <code>agent_xml_parse__task</code>	905
7.164.2.15 <code>agent_xml_parse__tasks</code>	905
7.164.2.16 <code>agent_xml_parse__wg_code</code>	905
7.164.2.17 <code>message_xml_parse</code>	905
7.164.2.18 <code>message_xml_parse__message</code>	906

Chapter 1

MobileC

1.1 Introduction

Welcome to the MobileC documentation. For a quick user-api reference, please refer to the file [libmc.h](#).

This documentation is provided supplementary to the main Mobile-C User Guide. The official user guide may be obtained at <http://www.mobilec.org> , and should also be included with your Mobile-C Distribution package in the file docs/mobilec.pdf .

Chapter 2

Namespace Index

2.1 Namespace List

Here is a list of all namespaces with brief descriptions:

base64	13
------------------------	-------	----

Chapter 3

Data Structure Index

3.1 Data Structures

Here are the data structures with brief descriptions:

_hr_time	15
_ssl_context	16
_ssl_session	28
_x509_buf	30
_x509_cert	31
_x509_name	35
_x509_node	36
_x509_raw	37
_x509_time	39
aes_context (AES context structure)	41
agency_s (The agency handle)	42
agent_datastate_s	46
agent_file_data_s	49
agent_s	50
agent_task_s	56
arc4_context (ARC4 context structure)	59
barrier_node_s	60
barrier_queue_s	62
base64_decodestate	63
base64::base64_decodestate	64
base64_encodestate	65
base64::base64_encodestate	66
cmd_prompt_s	67
command_s	68
connection_s	69
fipa_expression_s::content_u	71
base64::decoder	73
des3_context (Triple-DES context structure)	75
des_context (DES context structure)	76
dhm_context	77
dynstring_s	79
base64::encoder	80
fipa_acl_envelope_Received_s	82

fipa_acl_envelope_s	84
fipa_acl_message_s	85
fipa_acl_Param_s	88
fipa_agent_identifier_s	90
fipa_agent_identifier_set_s	91
fipa_comm_action_t	92
fipa_comm_message_check_t	93
fipa_comm_performative_t	94
fipa_comm_protocol_cn_t	95
fipa_comm_protocol_t	97
fipa_comm_reply_t	99
fipa_comm_t	100
fipa_DateTime_s	102
fipa_expression_s	104
fipa_list_t	105
fipa_message_string_s	106
fipa_number_s	107
fipa_string_s	108
fipa_url_s	109
fipa_url_sequence_s	110
fipa_word_s	111
foo_c	112
foo_s	115
havege_state (HAVEGE state structure)	117
host_id_s	119
hr_time (Timer structure)	120
interpreter_variable_data_s	121
list_s	123
listNode_s	124
mc_platform_s	125
mc_rwlock_s	132
MCAgencyOptions_s (User modifiable agency options)	134
md2_context (MD2 context structure)	137
md4_context (MD4 context structure)	139
md5_context (MD5 context structure)	141
message_s	143
message_send_arg_s	146
mpi (MPI structure)	147
mtp_http_content_s	149
mtp_http_s	150
mxml_attr_s	154
mxml_custom_s	155
mxml_fdbuf_s	156
mxml_index_s	157
mxml_node_s	159
mxml_text_s	161
mxml_value_s	162
mxml_value_u	163
options	165
rsa_context (RSA context structure)	168
rwlock_s	172
sha1_context (SHA-1 context structure)	173
sha2_context (SHA-256 context structure)	175
sha4_context (SHA-512 context structure)	177

stationary_agent_info_s	179
syncListNode_s	180

Chapter 4

File Index

4.1 File List

Here is a list of all files with brief descriptions:

/home/dko/Projects/mobilec/src/ acc.c	183
/home/dko/Projects/mobilec/src/ agent.c	188
/home/dko/Projects/mobilec/src/ agent_datastate.c	192
/home/dko/Projects/mobilec/src/ agent_file_data.c	193
/home/dko/Projects/mobilec/src/ agent_return_data.c	195
/home/dko/Projects/mobilec/src/ agent_task.c	197
/home/dko/Projects/mobilec/src/ ams.c	199
/home/dko/Projects/mobilec/src/ barrier.c	201
/home/dko/Projects/mobilec/src/ cmd_prompt.c	202
/home/dko/Projects/mobilec/src/ connection.c	205
/home/dko/Projects/mobilec/src/ df.c	206
/home/dko/Projects/mobilec/src/ dynstring.c	210
/home/dko/Projects/mobilec/src/ fipa_acl.c	211
/home/dko/Projects/mobilec/src/ fipa_envelope.c	224
/home/dko/Projects/mobilec/src/ libmc.c	425
/home/dko/Projects/mobilec/src/ mc_platform.c	501
/home/dko/Projects/mobilec/src/ mc_rwlock.c	503
/home/dko/Projects/mobilec/src/ message.c	510
/home/dko/Projects/mobilec/src/ message_queue.c	515
/home/dko/Projects/mobilec/src/ mtp_http.c	516
/home/dko/Projects/mobilec/src/ rwlock.c	570
/home/dko/Projects/mobilec/src/ winconfig.h	569
/home/dko/Projects/mobilec/src/ xml_compose.c	896
/home/dko/Projects/mobilec/src/ xml_helper.c	900
/home/dko/Projects/mobilec/src/ xml_parser.c	902
/home/dko/Projects/mobilec/src/include/ acc.h	232
/home/dko/Projects/mobilec/src/include/ agent.h	235
/home/dko/Projects/mobilec/src/include/ agent_datastate.h	239
/home/dko/Projects/mobilec/src/include/ agent_file_data.h	241
/home/dko/Projects/mobilec/src/include/ agent_lib.h	243
/home/dko/Projects/mobilec/src/include/ agent_task.h	255
/home/dko/Projects/mobilec/src/include/ ams.h	257
/home/dko/Projects/mobilec/src/include/ barrier.h	259

/home/dko/Projects/mobilec/src/include/cmd_prompt.h	261
/home/dko/Projects/mobilec/src/include/commands.h	263
/home/dko/Projects/mobilec/src/include/commands.x.h	266
/home/dko/Projects/mobilec/src/include/connection.h	268
/home/dko/Projects/mobilec/src/include/df.h	270
/home/dko/Projects/mobilec/src/include/df_request.x.h	276
/home/dko/Projects/mobilec/src/include/dynstring.h	277
/home/dko/Projects/mobilec/src/include/fipa_acl.h	279
/home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h	296
/home/dko/Projects/mobilec/src/include/fipa_comm.h	304
/home/dko/Projects/mobilec/src/include/host_id.h	312
/home/dko/Projects/mobilec/src/include/interpreter_variable_data.h	313
/home/dko/Projects/mobilec/src/include/libmc.h (MobileC api header file)	315
/home/dko/Projects/mobilec/src/include/macros.h	373
/home/dko/Projects/mobilec/src/include/mc_error.h	385
/home/dko/Projects/mobilec/src/include/mc_platform.h	387
/home/dko/Projects/mobilec/src/include/mc_rwlock.h	390
/home/dko/Projects/mobilec/src/include/message.h	392
/home/dko/Projects/mobilec/src/include/mobilec.h	396
/home/dko/Projects/mobilec/src/include/mtp_http.h	397
/home/dko/Projects/mobilec/src/include/rwlock.h	403
/home/dko/Projects/mobilec/src/include/xml_compose.h	405
/home/dko/Projects/mobilec/src/include/xml_helper.h	409
/home/dko/Projects/mobilec/src/include/xml_parser.h	411
/home/dko/Projects/mobilec/src/libb64-1.2/base64/base64.cc	415
/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cdecode.h	416
/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cencode.h	418
/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/decode.h	420
/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/encode.h	421
/home/dko/Projects/mobilec/src/libb64-1.2/src/cdecode.c	422
/home/dko/Projects/mobilec/src/libb64-1.2/src/cencode.c	423
/home/dko/Projects/mobilec/src/mc_list/list.c	488
/home/dko/Projects/mobilec/src/mc_list/list.h	494
/home/dko/Projects/mobilec/src/mc_sync-sync_list.c	505
/home/dko/Projects/mobilec/src/mc_sync-sync_list.h	507
/home/dko/Projects/mobilec/src/mxml-2.2.2/config.h	521
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-attr.c	525
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-entity.c	526
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-file.c	528
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-index.c	535
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-node.c	537
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-private.c	540
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-search.c	542
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-set.c	543
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-string.c	545
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h	546
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxmldoc.c	558
/home/dko/Projects/mobilec/src/mxml-2.2.2/testmxml.c	566
/home/dko/Projects/mobilec/src/mxml-2.2.2/winconfig.h	567
/home/dko/Projects/mobilec/src/mxml-2.2.2/test/class.cxx	562
/home/dko/Projects/mobilec/src/mxml-2.2.2/test/enum.cxx	563
/home/dko/Projects/mobilec/src/mxml-2.2.2/test/function.cxx	564
/home/dko/Projects/mobilec/src/mxml-2.2.2/test/struct.cxx	565
/home/dko/Projects/mobilec/src/security/asm.c	572

/home/dko/Projects/mobilec/src/security/asm.h	573
/home/dko/Projects/mobilec/src/security/asm_message_composer.c	574
/home/dko/Projects/mobilec/src/security/asm_message_composer.h	575
/home/dko/Projects/mobilec/src/security/asm_message_parser.c	576
/home/dko/Projects/mobilec/src/security/asm_message_parser.h	577
/home/dko/Projects/mobilec/src/security/asm_node.c	578
/home/dko/Projects/mobilec/src/security/asm_node.h	579
/home/dko/Projects/mobilec/src/security/interface.c	580
/home/dko/Projects/mobilec/src/security/interface.h	584
/home/dko/Projects/mobilec/src/security/mc_dh.c	589
/home/dko/Projects/mobilec/src/security/mc_dh.h	590
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h	591
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/arc4.h	595
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/base64.h	597
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bignum.h	599
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bn_mul.h	615
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/certs.h	617
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/config.h	522
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/debug.h	619
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h	622
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/dhm.h	627
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/havege.h	632
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md2.h	634
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md4.h	638
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md5.h	642
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/net.h	647
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/openssl.h	652
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h	656
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/rsa.h	657
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h	667
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha2.h	672
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha4.h	677
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h	682
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h	706
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h	708
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/aes.c	723
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/arc4.c	732
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/base64.c	735
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/bignum.c	739
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c	756
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/debug.c	760
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/des.c	762
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/dhm.c	775
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/havege.c	779
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c	781
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c	782
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md5.c	783
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/net.c	792
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/padlock.c	796
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/rsa.c	797
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha1.c	807
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha2.c	816
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha4.c	825
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_cli.c	834

/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ ssl_srv.c	837
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ ssl_tls.c	840
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ timing.c	854
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ x509parse.c	857
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/aes/ aescrypt2.c	866
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/ hello.c	868
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/ md5sum.c	869
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/ sha1sum.c	870
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/ sha2sum.c	871
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/ dh_client.c	872
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/ dh_genprime.c	873
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/ dh_server.c	874
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/ mpi_demo.c	875
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/ rsa_genkey.c	876
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/ rsa_sign.c	877
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/ rsa_verify.c	878
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ ssl_client1.c	879
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ ssl_client2.c	881
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ ssl_server.c	883
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ benchmark.c	886
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ selftest.c	888
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ ssl_test.c	889
/home/dko/Projects/mobilec/src/util/ mc_genkey.c	895

Chapter 5

Namespace Documentation

5.1 base64 Namespace Reference

Data Structures

- struct `base64_decodestate`
- struct `decoder`
- struct `base64_encodestate`
- struct `encoder`

Enumerations

- enum `base64_decodestep` { `step_a`, `step_b`, `step_c`, `step_d` }
- enum `base64_encodestep` { `step_A`, `step_B`, `step_C` }

Functions

- void `base64_init_decodestate` (`base64_decodestate` *`state_in`)
- int `base64_decode_value` (char `value_in`)
- int `base64_decode_block` (const char *`code_in`, const int `length_in`, char *`plaintext_out`, `base64_decodestate` *`state_in`)
- void `base64_init_encodestate` (`base64_encodestate` *`state_in`)
- char `base64_encode_value` (char `value_in`)
- int `base64_encode_block` (const char *`plaintext_in`, int `length_in`, char *`code_out`, `base64_encodestate` *`state_in`)
- int `base64_encode_blockend` (char *`code_out`, `base64_encodestate` *`state_in`)

5.1.1 Enumeration Type Documentation

5.1.1.1 enum `base64::base64_decodestep`

Enumerator:

`step_a`
`step_b`

step_c
step_d

Definition at line 12 of file decode.h.

5.1.1.2 enum base64::base64_encodestep

Enumerator:

step_A
step_B
step_C

Definition at line 12 of file encode.h.

5.1.2 Function Documentation

5.1.2.1 int base64::base64_decode_block (const char * *code_in*, const int *length_in*, char * *plaintext_out*, base64_decodestate * *state_in*)

5.1.2.2 int base64::base64_decode_value (char *value_in*)

Definition at line 10 of file cdecode.c.

5.1.2.3 int base64::base64_encode_block (const char * *plaintext_in*, int *length_in*, char * *code_out*, base64_encodestate * *state_in*)

5.1.2.4 int base64::base64_encode_blockend (char * *code_out*, base64_encodestate * *state_in*)

5.1.2.5 char base64::base64_encode_value (char *value_in*)

Definition at line 19 of file cencode.c.

5.1.2.6 void base64::base64_init_decodestate (base64_decodestate * *state_in*)

5.1.2.7 void base64::base64_init_encodestate (base64_encodestate * *state_in*)

Chapter 6

Data Structure Documentation

6.1 _hr_time Struct Reference

Data Fields

- struct timeval [start](#)

6.1.1 Detailed Description

Definition at line 45 of file timing.c.

6.1.2 Field Documentation

6.1.2.1 struct timeval _hr_time::start

Definition at line 47 of file timing.c.

Referenced by `get_timer()`.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/[timing.c](#)

6.2 _ssl_context Struct Reference

```
#include <ssl.h>
```

Data Fields

- int state
- int major_ver
- int minor_ver
- int max_major_ver
- int max_minor_ver
- int(* f_rng)(void *)
- void(* f_dbg)(void *, int, char *)
- int(* f_recv)(void *, unsigned char *, int)
- int(* f_send)(void *, unsigned char *, int)
- void * p_rng
- void * p_dbg
- void * p_recv
- void * p_send
- int resume
- int timeout
- ssl_session * session
- int(* s_get)(ssl_context *)
- int(* s_set)(ssl_context *)
- unsigned char * in_ctr
- unsigned char * in_hdr
- unsigned char * in_msg
- unsigned char * in_offt
- int in_msctype
- int in_msrlen
- int in_left
- int in_hstrlen
- int nb_zero
- unsigned char * out_ctr
- unsigned char * out_hdr
- unsigned char * out_msg
- int out_msctype
- int out_msrlen
- int out_left
- rsa_context * rsa_key
- x509_cert * own_cert
- x509_cert * ca_chain
- x509_cert * peer_cert
- char * peer_cn
- int endpoint
- int authmode
- int client_auth
- int verify_result
- dhm_context dhm_ctx

- `md5_context fin_md5`
- `sha1_context fin_sha1`
- `int do_crypt`
- `int * ciphers`
- `int pmslen`
- `int keylen`
- `int minlen`
- `int ivlen`
- `int maclen`
- `unsigned char randbytes [64]`
- `unsigned char premaster [256]`
- `unsigned char iv_enc [16]`
- `unsigned char iv_dec [16]`
- `unsigned char mac_enc [32]`
- `unsigned char mac_dec [32]`
- `unsigned long ctx_enc [128]`
- `unsigned long ctx_dec [128]`
- `unsigned char * hostname`
- `unsigned long hostname_len`

6.2.1 Detailed Description

Definition at line 149 of file ssl.h.

6.2.2 Field Documentation

6.2.2.1 int _ssl_context::authmode

verification mode

Definition at line 220 of file ssl.h.

Referenced by `ssl_parse_certificate()`, `ssl_set_authmode()`, and `ssl_write_certificate_request()`.

6.2.2.2 x509_cert* _ssl_context::ca_chain

own trusted CA chain

Definition at line 215 of file ssl.h.

Referenced by `ssl_parse_certificate()`, `ssl_set_ca_chain()`, and `ssl_write_certificate_request()`.

6.2.2.3 int* _ssl_context::ciphers

allowed ciphersuites

Definition at line 232 of file ssl.h.

Referenced by `ssl_parse_client_hello()`, `ssl_parse_server_hello()`, `ssl_set_ciphers()`, and `ssl_write_client_hello()`.

6.2.2.4 int _ssl_context::client_auth

flag for client auth.

Definition at line 221 of file ssl.h.

Referenced by ssl_parse_certificate_request(), ssl_parse_server_hello_done(), ssl_write_certificate(), and ssl_write_certificate_verify().

6.2.2.5 unsigned long _ssl_context::ctx_dec[128]

decryption context

Definition at line 249 of file ssl.h.

Referenced by ssl_decrypt_buf(), and ssl_derive_keys().

6.2.2.6 unsigned long _ssl_context::ctx_enc[128]

encryption context

Definition at line 248 of file ssl.h.

Referenced by ssl_derive_keys(), and ssl_encrypt_buf().

6.2.2.7 dhm_context _ssl_context::dhm_ctx

DHM key exchange

Definition at line 227 of file ssl.h.

Referenced by ssl_free(), ssl_parse_client_key_exchange(), ssl_parse_server_key_exchange(), ssl_set_dh_param(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

6.2.2.8 int _ssl_context::do_crypt

en(de)cryption flag

Definition at line 231 of file ssl.h.

Referenced by ssl_parse_change_cipher_spec(), ssl_parse_finished(), ssl_read_record(), ssl_write_change_cipher_spec(), ssl_write_finished(), and ssl_write_record().

6.2.2.9 int _ssl_context::endpoint

0: client, 1: server

Definition at line 219 of file ssl.h.

Referenced by ssl_derive_keys(), ssl_handshake(), ssl_parse_certificate(), ssl_parse_finished(), ssl_set_endpoint(), ssl_write_certificate(), and ssl_write_finished().

6.2.2.10 void(* _ssl_context::f_dbg)(void *, int, char *)

Definition at line 166 of file ssl.h.

Referenced by debug_print_buf(), debug_print_crt(), debug_print_mpi(), debug_print_msg(), debug_print_ret(), and ssl_set_dbg().

6.2.2.11 int(* _ssl_context::f_recv)(void *, unsigned char *, int)

Definition at line 167 of file ssl.h.

Referenced by ssl_fetch_input(), and ssl_set_bio().

6.2.2.12 int(* _ssl_context::f_rng)(void *)

Definition at line 165 of file ssl.h.

Referenced by ssl_parse_client_key_exchange(), ssl_set_rng(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_server_hello(), and ssl_write_server_key_exchange().

6.2.2.13 int(* _ssl_context::f_send)(void *, unsigned char *, int)

Definition at line 168 of file ssl.h.

Referenced by ssl_flush_output(), and ssl_set_bio().

6.2.2.14 md5_context _ssl_context::fin_md5

Finished MD5 checksum

Definition at line 228 of file ssl.h.

Referenced by ssl_calc_verify(), ssl_init(), ssl_parse_client_hello(), ssl_parse_finished(), ssl_read_record(), ssl_write_finished(), and ssl_write_record().

6.2.2.15 sha1_context _ssl_context::fin_sha1

Finished SHA-1 checksum

Definition at line 229 of file ssl.h.

Referenced by ssl_calc_verify(), ssl_init(), ssl_parse_client_hello(), ssl_parse_finished(), ssl_read_record(), ssl_write_finished(), and ssl_write_record().

6.2.2.16 unsigned char* _ssl_context::hostname

Definition at line 254 of file ssl.h.

Referenced by ssl_free(), ssl_init(), ssl_set_hostname(), and ssl_write_client_hello().

6.2.2.17 unsigned long _ssl_context::hostname_len

Definition at line 255 of file ssl.h.

Referenced by ssl_free(), ssl_init(), ssl_set_hostname(), and ssl_write_client_hello().

6.2.2.18 `unsigned char* _ssl_context::in_ctr`

64-bit incoming message counter

Definition at line 187 of file ssl.h.

Referenced by `ssl_decrypt_buf()`, `ssl_free()`, and `ssl_init()`.

6.2.2.19 `unsigned char* _ssl_context::in_hdr`

5-byte record header (`in_ctr+8`)

Definition at line 188 of file ssl.h.

Referenced by `ssl_decrypt_buf()`, `ssl_fetch_input()`, `ssl_init()`, `ssl_parse_client_hello()`, and `ssl_read_record()`.

6.2.2.20 `int _ssl_context::in_hflen`

current handshake message length

Definition at line 196 of file ssl.h.

Referenced by `ssl_parse_certificate()`, `ssl_parse_certificate_verify()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, and `ssl_read_record()`.

6.2.2.21 `int _ssl_context::in_left`

amount of data read so far

Definition at line 194 of file ssl.h.

Referenced by `ssl_fetch_input()`, `ssl_parse_client_hello()`, and `ssl_read_record()`.

6.2.2.22 `unsigned char* _ssl_context::in_msg`

the message contents (`in_hdr+5`)

Definition at line 189 of file ssl.h.

Referenced by `ssl_decrypt_buf()`, `ssl_init()`, `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, `ssl_read()`, and `ssl_read_record()`.

6.2.2.23 `int _ssl_context::in_msrlen`

record header: message length

Definition at line 193 of file ssl.h.

Referenced by `ssl_decrypt_buf()`, `ssl_get_bytes_avail()`, `ssl_parse_certificate()`, `ssl_parse_change_cipher_spec()`, `ssl_read()`, and `ssl_read_record()`.

6.2.2.24 int _ssl_context::in_msatype

record header: message type

Definition at line 192 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_certificate_verify(), ssl_parse_change_cipher_spec(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), ssl_read(), and ssl_read_record().

6.2.2.25 unsigned char* _ssl_context::in_offt

read offset in application data

Definition at line 190 of file ssl.h.

Referenced by ssl_get_bytes_avail(), and ssl_read().

6.2.2.26 unsigned char _ssl_context::iv_dec[16]

IV (decryption)

Definition at line 243 of file ssl.h.

Referenced by ssl_decrypt_buf(), and ssl_derive_keys().

6.2.2.27 unsigned char _ssl_context::iv_enc[16]

IV (encryption)

Definition at line 242 of file ssl.h.

Referenced by ssl_derive_keys(), and ssl_encrypt_buf().

6.2.2.28 int _ssl_context::ivlen

IV length

Definition at line 236 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_derive_keys(), and ssl_encrypt_buf().

6.2.2.29 int _ssl_context::keylen

symmetric key length

Definition at line 234 of file ssl.h.

Referenced by ssl_derive_keys().

6.2.2.30 unsigned char _ssl_context::mac_dec[32]

MAC (decryption)

Definition at line 246 of file ssl.h.

Referenced by ssl_decrypt_buf(), and ssl_derive_keys().

6.2.2.31 unsigned char _ssl_context::mac_enc[32]

MAC (encryption)

Definition at line 245 of file ssl.h.

Referenced by ssl_derive_keys(), and ssl_encrypt_buf().

6.2.2.32 int _ssl_context::maclen

MAC length

Definition at line 237 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_derive_keys(), and ssl_encrypt_buf().

6.2.2.33 int _ssl_context::major_ver

equal to SSL_MAJOR_VERSION_3

Definition at line 156 of file ssl.h.

Referenced by ssl_parse_client_hello(), ssl_read_record(), ssl_write_client_hello(), ssl_write_record(), and ssl_write_server_hello().

6.2.2.34 int _ssl_context::max_major_ver

max. major version from client

Definition at line 159 of file ssl.h.

Referenced by ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_write_client_hello(), and ssl_write_client_key_exchange().

6.2.2.35 int _ssl_context::max_minor_ver

max. minor version from client

Definition at line 160 of file ssl.h.

Referenced by ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_write_client_hello(), and ssl_write_client_key_exchange().

6.2.2.36 int _ssl_context::minlen

min. ciphertext length

Definition at line 235 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_derive_keys(), and ssl_read_record().

6.2.2.37 int `_ssl_context::minor_ver`

either 0 (SSL3) or 1 (TLS1.0)

Definition at line 157 of file ssl.h.

Referenced by `ssl_calc_finished()`, `ssl_calc_verify()`, `ssl_decrypt_buf()`, `ssl_derive_keys()`, `ssl_encrypt_buf()`, `ssl_parse_certificate()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_read_record()`, `ssl_write_certificate()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, and `ssl_write_server_hello()`.

6.2.2.38 int `_ssl_context::nb_zero`

of 0-length encrypted messages

Definition at line 197 of file ssl.h.

Referenced by `ssl_decrypt_buf()`.

6.2.2.39 unsigned char* `_ssl_context::out_ctr`

64-bit outgoing message counter

Definition at line 202 of file ssl.h.

Referenced by `ssl_encrypt_buf()`, `ssl_free()`, and `ssl_init()`.

6.2.2.40 unsigned char* `_ssl_context::out_hdr`

5-byte record header (`out_ctr+8`)

Definition at line 203 of file ssl.h.

Referenced by `ssl_flush_output()`, `ssl_init()`, and `ssl_write_record()`.

6.2.2.41 int `_ssl_context::out_left`

amount of data not yet written

Definition at line 208 of file ssl.h.

Referenced by `ssl_flush_output()`, `ssl_write()`, and `ssl_write_record()`.

6.2.2.42 unsigned char* `_ssl_context::out_msg`

the message contents (`out_hdr+5`)

Definition at line 204 of file ssl.h.

Referenced by `ssl_close_notify()`, `ssl_encrypt_buf()`, `ssl_init()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

6.2.2.43 int _ssl_context::out_msglen

record header: message length

Definition at line 207 of file ssl.h.

Referenced by ssl_close_notify(), ssl_encrypt_buf(), ssl_flush_output(), ssl_write(), ssl_write_certificate(), ssl_write_certificate_request(), ssl_write_certificate_verify(), ssl_write_change_cipher_spec(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), ssl_write_record(), ssl_write_server_hello(), ssl_write_server_hello_done(), and ssl_write_server_key_exchange().

6.2.2.44 int _ssl_context::out_msctype

record header: message type

Definition at line 206 of file ssl.h.

Referenced by ssl_close_notify(), ssl_encrypt_buf(), ssl_write(), ssl_write_certificate(), ssl_write_certificate_request(), ssl_write_certificate_verify(), ssl_write_change_cipher_spec(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), ssl_write_record(), ssl_write_server_hello(), ssl_write_server_hello_done(), and ssl_write_server_key_exchange().

6.2.2.45 x509_cert* _ssl_context::own_cert

own X.509 certificate

Definition at line 214 of file ssl.h.

Referenced by ssl_set_own_cert(), and ssl_write_certificate().

6.2.2.46 void* _ssl_context::p_dbg

context for the debug function

Definition at line 171 of file ssl.h.

Referenced by debug_print_buf(), debug_print_crt(), debug_print_mpi(), debug_print_msg(), debug_print_ret(), and ssl_set_dbg().

6.2.2.47 void* _ssl_context::p_recv

context for reading operations

Definition at line 172 of file ssl.h.

Referenced by ssl_fetch_input(), and ssl_set_bio().

6.2.2.48 void* _ssl_context::p_rng

context for the RNG function

Definition at line 170 of file ssl.h.

Referenced by ssl_parse_client_key_exchange(), ssl_set_rng(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_server_hello(), and ssl_write_server_key_exchange().

6.2.2.49 void* _ssl_context::p_send

context for writing operations

Definition at line 173 of file ssl.h.

Referenced by ssl_flush_output(), and ssl_set_bio().

6.2.2.50 x509_cert* _ssl_context::peer_cert

peer X.509 cert chain

Definition at line 216 of file ssl.h.

Referenced by main(), ssl_free(), ssl_parse_certificate(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), and ssl_write_client_key_exchange().

6.2.2.51 char* _ssl_context::peer_cn

expected peer CN

Definition at line 217 of file ssl.h.

Referenced by ssl_parse_certificate(), and ssl_set_ca_chain().

6.2.2.52 int _ssl_context::pmslen

premaster length

Definition at line 233 of file ssl.h.

Referenced by ssl_derive_keys(), ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

6.2.2.53 unsigned char _ssl_context::premaster[256]

premaster secret

Definition at line 240 of file ssl.h.

Referenced by ssl_derive_keys(), ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

6.2.2.54 unsigned char _ssl_context::randbytes[64]

random bytes

Definition at line 239 of file ssl.h.

Referenced by ssl_derive_keys(), ssl_parse_client_hello(), ssl_parse_server_hello(), ssl_parse_server_key_exchange(), ssl_write_client_hello(), ssl_write_server_hello(), and ssl_write_server_key_exchange().

6.2.2.55 int _ssl_context::resume

session resuming flag

Definition at line 178 of file ssl.h.

Referenced by my_get_session(), ssl_derive_keys(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_set_session(), ssl_write_client_hello(), ssl_write_finished(), and ssl_write_server_hello().

6.2.2.56 `rsa_context* _ssl_context::rsa_key`

own RSA private key

Definition at line 213 of file ssl.h.

Referenced by ssl_parse_client_key_exchange(), ssl_set_own_cert(), ssl_write_certificate_verify(), and ssl_write_server_key_exchange().

6.2.2.57 `int(* _ssl_context::s_get)(ssl_context *)`

(server) get callback

Definition at line 181 of file ssl.h.

Referenced by ssl_set_scb(), and ssl_write_server_hello().

6.2.2.58 `int(* _ssl_context::s_set)(ssl_context *)`

(server) set callback

Definition at line 182 of file ssl.h.

Referenced by ssl_parse_client_key_exchange(), and ssl_set_scb().

6.2.2.59 `ssl_session* _ssl_context::session`

current session data

Definition at line 180 of file ssl.h.

Referenced by my_get_session(), my_set_session(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_get_cipher(), ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_parse_server_hello(), ssl_parse_server_key_exchange(), ssl_set_session(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_server_hello(), and ssl_write_server_key_exchange().

6.2.2.60 `int _ssl_context::state`

SSL handshake: current state

Definition at line 154 of file ssl.h.

Referenced by ssl_close_notify(), ssl_handshake_client(), ssl_handshake_server(), ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_certificate_verify(), ssl_parse_change_cipher_spec(), ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), ssl_read(), ssl_write(), ssl_write_certificate(), ssl_write_certificate_request(), ssl_write_certificate_verify(), ssl_write_change_cipher_spec(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), ssl_write_server_hello(), ssl_write_server_hello_done(), and ssl_write_server_key_exchange().

6.2.2.61 int _ssl_context::timeout

sess. expiration time

Definition at line 179 of file ssl.h.

Referenced by my_get_session(), my_set_session(), ssl_set_session(), and ssl_write_client_hello().

6.2.2.62 int _ssl_context::verify_result

verification result

Definition at line 222 of file ssl.h.

Referenced by ssl_get_verify_result(), and ssl_parse_certificate().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[ssl.h](#)

6.3 _ssl_session Struct Reference

```
#include <ssl.h>
```

Data Fields

- time_t **start**
- int **cipher**
- int **length**
- unsigned char **id** [32]
- unsigned char **master** [48]
- **ssl_session** * **next**

6.3.1 Detailed Description

Definition at line 139 of file ssl.h.

6.3.2 Field Documentation

6.3.2.1 int _ssl_session::cipher

chosen cipher

Definition at line 142 of file ssl.h.

Referenced by my_get_session(), ssl_derive_keys(), ssl_get_cipher(), ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_parse_server_hello(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), ssl_write_server_hello(), and ssl_write_server_key_exchange().

6.3.2.2 unsigned char _ssl_session::id[32]

session identifier

Definition at line 144 of file ssl.h.

Referenced by my_get_session(), my_set_session(), ssl_parse_client_hello(), ssl_parse_server_hello(), ssl_write_client_hello(), and ssl_write_server_hello().

6.3.2.3 int _ssl_session::length

session id length

Definition at line 143 of file ssl.h.

Referenced by my_get_session(), my_set_session(), ssl_parse_client_hello(), ssl_parse_server_hello(), ssl_write_client_hello(), and ssl_write_server_hello().

6.3.2.4 unsigned char _ssl_session::master[48]

the master secret

Definition at line 145 of file ssl.h.

Referenced by `my_get_session()`, `ssl_calc_finished()`, `ssl_calc_verify()`, and `ssl_derive_keys()`.

6.3.2.5 `ssl_session* _ssl_session::next`

next session entry

Definition at line 146 of file `ssl.h`.

Referenced by `main()`, `my_get_session()`, and `my_set_session()`.

6.3.2.6 `time_t _ssl_session::start`

starting time

Definition at line 141 of file `ssl.h`.

Referenced by `my_get_session()`, `my_set_session()`, `ssl_parse_server_hello()`, and `ssl_write_client_hello()`.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[ssl.h](#)

6.4 _x509_buf Struct Reference

```
#include <x509.h>
```

Data Fields

- int [tag](#)
- int [len](#)
- unsigned char * [p](#)

6.4.1 Detailed Description

Definition at line 96 of file x509.h.

6.4.2 Field Documentation

6.4.2.1 int _x509_buf::len

Definition at line 99 of file x509.h.

Referenced by [ssl_write_certificate\(\)](#), [ssl_write_certificate_request\(\)](#), [x509_free\(\)](#), [x509_get_alg\(\)](#), [x509_get_ext\(\)](#), [x509_get_name\(\)](#), [x509_get_pubkey\(\)](#), [x509_get_serial\(\)](#), [x509_get_sig\(\)](#), [x509_get_uid\(\)](#), [x509parse_cert_info\(\)](#), [x509parse_crt\(\)](#), [x509parse_dn_gets\(\)](#), and [x509parse_verify\(\)](#).

6.4.2.2 unsigned char* _x509_buf::p

Definition at line 100 of file x509.h.

Referenced by [ssl_write_certificate\(\)](#), [ssl_write_certificate_request\(\)](#), [x509_free\(\)](#), [x509_get_alg\(\)](#), [x509_get_ext\(\)](#), [x509_get_name\(\)](#), [x509_get_pubkey\(\)](#), [x509_get_serial\(\)](#), [x509_get_sig\(\)](#), [x509_get_uid\(\)](#), [x509parse_cert_info\(\)](#), [x509parse_crt\(\)](#), [x509parse_dn_gets\(\)](#), and [x509parse_verify\(\)](#).

6.4.2.3 int _x509_buf::tag

Definition at line 98 of file x509.h.

Referenced by [x509_get_alg\(\)](#), [x509_get_ext\(\)](#), [x509_get_name\(\)](#), [x509_get_serial\(\)](#), [x509_get_sig\(\)](#), and [x509_get_uid\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[x509.h](#)

6.5 _x509_cert Struct Reference

```
#include <x509.h>
```

Data Fields

- [x509_buf raw](#)
- [x509_buf tbs](#)
- int [version](#)
- [x509_buf serial](#)
- [x509_buf sig_oid1](#)
- [x509_buf issuer_raw](#)
- [x509_buf subject_raw](#)
- [x509_name issuer](#)
- [x509_name subject](#)
- [x509_time valid_from](#)
- [x509_time valid_to](#)
- [x509_buf pk_oid](#)
- [rsa_context rsa](#)
- [x509_buf issuer_id](#)
- [x509_buf subject_id](#)
- [x509_buf v3_ext](#)
- int [ca_istru](#)
- int [max_pathlen](#)
- [x509_buf sig_oid2](#)
- [x509_buf sig](#)
- struct [_x509_cert](#) * [next](#)

6.5.1 Detailed Description

Definition at line 119 of file x509.h.

6.5.2 Field Documentation

6.5.2.1 int _x509_cert::ca_istru

Definition at line 144 of file x509.h.

Referenced by [x509parse_crt\(\)](#), and [x509parse_verify\(\)](#).

6.5.2.2 x509_name _x509_cert::issuer

Definition at line 131 of file x509.h.

Referenced by [x509_free\(\)](#), [x509parse_cert_info\(\)](#), and [x509parse_crt\(\)](#).

6.5.2.3 x509_buf _x509_cert::issuer_id

Definition at line 140 of file x509.h.

Referenced by [x509parse_crt\(\)](#).

6.5.2.4 `x509_buf_x509_cert::issuer_raw`

Definition at line 128 of file x509.h.

Referenced by `x509parse_crt()`, and `x509parse_verify()`.

6.5.2.5 `int _x509_cert::max_pathlen`

Definition at line 145 of file x509.h.

Referenced by `x509parse_crt()`, and `x509parse_verify()`.

6.5.2.6 `struct _x509_cert* _x509_cert::next`

Definition at line 150 of file x509.h.

Referenced by `debug_print_crt()`, `main()`, `ssl_test()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `x509_free()`, `x509parse_crt()`, and `x509parse_verify()`.

6.5.2.7 `x509_buf_x509_cert::pk_oid`

Definition at line 137 of file x509.h.

Referenced by `x509parse_crt()`.

6.5.2.8 `x509_buf_x509_cert::raw`

Definition at line 121 of file x509.h.

Referenced by `ssl_write_certificate()`, `x509_free()`, and `x509parse_crt()`.

6.5.2.9 `rsa_context_x509_cert::rsa`

Definition at line 138 of file x509.h.

Referenced by `debug_print_crt()`, `ssl_parse_certificate_verify()`, `ssl_parse_server_key_exchange()`, `ssl_write_client_key_exchange()`, `x509_free()`, `x509parse_cert_info()`, `x509parse_crt()`, and `x509parse_verify()`.

6.5.2.10 `x509_buf_x509_cert::serial`

Definition at line 125 of file x509.h.

Referenced by `x509parse_cert_info()`, and `x509parse_crt()`.

6.5.2.11 `x509_buf_x509_cert::sig`

Definition at line 148 of file x509.h.

Referenced by `x509parse_crt()`, and `x509parse_verify()`.

6.5.2.12 x509_buf_x509_cert::sig_oid1

Definition at line 126 of file x509.h.

Referenced by x509parse_cert_info(), x509parse_crt(), and x509parse_verify().

6.5.2.13 x509_buf_x509_cert::sig_oid2

Definition at line 147 of file x509.h.

Referenced by x509parse_crt().

6.5.2.14 x509_name_x509_cert::subject

Definition at line 132 of file x509.h.

Referenced by x509_free(), x509parse_cert_info(), x509parse_crt(), and x509parse_verify().

6.5.2.15 x509_buf_x509_cert::subject_id

Definition at line 141 of file x509.h.

Referenced by x509parse_crt().

6.5.2.16 x509_buf_x509_cert::subject_raw

Definition at line 129 of file x509.h.

Referenced by ssl_write_certificate_request(), x509parse_crt(), and x509parse_verify().

6.5.2.17 x509_buf_x509_cert::tbs

Definition at line 122 of file x509.h.

Referenced by x509parse_crt(), and x509parse_verify().

6.5.2.18 x509_buf_x509_cert::v3_ext

Definition at line 142 of file x509.h.

Referenced by x509parse_crt().

6.5.2.19 x509_time_x509_cert::valid_from

Definition at line 134 of file x509.h.

Referenced by x509parse_cert_info(), and x509parse_crt().

6.5.2.20 x509_time_x509_cert::valid_to

Definition at line 135 of file x509.h.

Referenced by x509parse_cert_info(), x509parse_crt(), and x509parse_expired().

6.5.2.21 int _x509_cert::version

Definition at line 124 of file x509.h.

Referenced by x509parse_cert_info(), x509parse_crt(), and x509parse_verify().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[x509.h](#)

6.6 _x509_name Struct Reference

```
#include <x509.h>
```

Data Fields

- [x509_buf oid](#)
- [x509_buf val](#)
- struct [_x509_name](#) * [next](#)

6.6.1 Detailed Description

Definition at line 104 of file x509.h.

6.6.2 Field Documentation

6.6.2.1 struct _x509_name* _x509_name::next

Definition at line 108 of file x509.h.

Referenced by [x509_free\(\)](#), [x509_get_name\(\)](#), [x509parse_dn_gets\(\)](#), and [x509parse_verify\(\)](#).

6.6.2.2 x509_buf _x509_name::oid

Definition at line 106 of file x509.h.

Referenced by [x509_get_name\(\)](#), [x509parse_dn_gets\(\)](#), and [x509parse_verify\(\)](#).

6.6.2.3 x509_buf _x509_name::val

Definition at line 107 of file x509.h.

Referenced by [x509_get_name\(\)](#), [x509parse_dn_gets\(\)](#), and [x509parse_verify\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[x509.h](#)

6.7 `_x509_node` Struct Reference

```
#include <x509.h>
```

Data Fields

- `unsigned char * data`
- `unsigned char * p`
- `unsigned char * end`
- `size_t len`

6.7.1 Detailed Description

Definition at line 157 of file x509.h.

6.7.2 Field Documentation

6.7.2.1 `unsigned char* _x509_node::data`

Definition at line 159 of file x509.h.

6.7.2.2 `unsigned char* _x509_node::end`

Definition at line 161 of file x509.h.

6.7.2.3 `size_t _x509_node::len`

Definition at line 163 of file x509.h.

6.7.2.4 `unsigned char* _x509_node::p`

Definition at line 160 of file x509.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[x509.h](#)

6.8 _x509_raw Struct Reference

```
#include <x509.h>
```

Data Fields

- [x509_node raw](#)
- [x509_node tbs](#)
- [x509_node version](#)
- [x509_node serial](#)
- [x509_node tbs_sigalg](#)
- [x509_node issuer](#)
- [x509_node validity](#)
- [x509_node subject](#)
- [x509_node subpubkey](#)
- [x509_node sigalg](#)
- [x509_node sign](#)

6.8.1 Detailed Description

Definition at line 167 of file x509.h.

6.8.2 Field Documentation

6.8.2.1 x509_node _x509_raw::issuer

Definition at line 175 of file x509.h.

6.8.2.2 x509_node _x509_raw::raw

Definition at line 169 of file x509.h.

6.8.2.3 x509_node _x509_raw::serial

Definition at line 173 of file x509.h.

6.8.2.4 x509_node _x509_raw::sign

Definition at line 181 of file x509.h.

6.8.2.5 x509_node _x509_raw::sigalg

Definition at line 180 of file x509.h.

6.8.2.6 x509_node _x509_raw::subject

Definition at line 177 of file x509.h.

6.8.2.7 x509_node_x509_raw::subpubkey

Definition at line 178 of file x509.h.

6.8.2.8 x509_node_x509_raw::tbs

Definition at line 170 of file x509.h.

6.8.2.9 x509_node_x509_raw::tbs_sigalg

Definition at line 174 of file x509.h.

6.8.2.10 x509_node_x509_raw::validity

Definition at line 176 of file x509.h.

6.8.2.11 x509_node_x509_raw::version

Definition at line 172 of file x509.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h

6.9 _x509_time Struct Reference

```
#include <x509.h>
```

Data Fields

- int year
- int mon
- int day
- int hour
- int min
- int sec

6.9.1 Detailed Description

Definition at line 112 of file x509.h.

6.9.2 Field Documentation

6.9.2.1 int _x509_time::day

Definition at line 114 of file x509.h.

Referenced by x509_get_dates(), x509parse_cert_info(), and x509parse_expired().

6.9.2.2 int _x509_time::hour

Definition at line 115 of file x509.h.

Referenced by x509_get_dates(), and x509parse_cert_info().

6.9.2.3 int _x509_time::min

Definition at line 115 of file x509.h.

Referenced by x509_get_dates(), and x509parse_cert_info().

6.9.2.4 int _x509_time::mon

Definition at line 114 of file x509.h.

Referenced by x509_get_dates(), x509parse_cert_info(), and x509parse_expired().

6.9.2.5 int _x509_time::sec

Definition at line 115 of file x509.h.

Referenced by x509_get_dates(), and x509parse_cert_info().

6.9.2.6 int _x509_time::year

Definition at line 114 of file x509.h.

Referenced by x509_get_dates(), x509parse_cert_info(), and x509parse_expired().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[x509.h](#)

6.10 aes_context Struct Reference

AES context structure.

```
#include <aes.h>
```

Data Fields

- int **nr**
- unsigned long * **rk**
- unsigned long **buf** [68]

6.10.1 Detailed Description

AES context structure.

Definition at line 13 of file aes.h.

6.10.2 Field Documentation

6.10.2.1 unsigned long aes_context::buf[68]

unaligned data

Definition at line 17 of file aes.h.

Referenced by aes_setkey_dec(), and aes_setkey_enc().

6.10.2.2 int aes_context::nr

number of rounds

Definition at line 15 of file aes.h.

Referenced by aes_crypt_ecb(), aes_setkey_dec(), and aes_setkey_enc().

6.10.2.3 unsigned long* aes_context::rk

AES round keys

Definition at line 16 of file aes.h.

Referenced by aes_crypt_ecb(), aes_setkey_dec(), and aes_setkey_enc().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h

6.11 agency_s Struct Reference

The agency handle.

```
#include <libmc.h>
```

Data Fields

- int `client`
- int `server`
- char * `hostName`
- char * `filename`
- int `portno`
- int `portnoc`
- int `initInterps`
- struct `mc_platform_s` * `mc_platform`
- int `default_agentstatus`
- int `threads`
- int `enable_security`
- int `stack_size` [MC_THREAD_ALL]
- int `bluetooth`
- char * `priv_key_filename`
- char * `known_host_filename`
- `error_code_t` `last_error`
- `MC_AgentInitCallbackFunc_t` `agentInitCallback`
- void * `agentInitUserData`

6.11.1 Detailed Description

The agency handle.

Definition at line 235 of file libmc.h.

6.11.2 Field Documentation

6.11.2.1 `MC_AgentInitCallbackFunc_t` `agency_s::agentInitCallback`

Definition at line 255 of file libmc.h.

Referenced by `agent_RunChScriptThread()`, `MC_AddAgentInitCallback()`, and `MC_Initialize()`.

6.11.2.2 `void*` `agency_s::agentInitUserData`

Definition at line 256 of file libmc.h.

Referenced by `agent_RunChScriptThread()`, `MC_AddAgentInitCallback()`, and `MC_Initialize()`.

6.11.2.3 `int` `agency_s::bluetooth`

Definition at line 248 of file libmc.h.

Referenced by `MC_Initialize()`, and `mc_platform_Initialize()`.

6.11.2.4 int agency_s::client

Definition at line 236 of file libmc.h.

Referenced by MC_Initialize().

6.11.2.5 int agency_s::default_agentstatus

Agency default agent status

Definition at line 244 of file libmc.h.

Referenced by MC_Initialize(), and mc_platform_Initialize().

6.11.2.6 int agency_s::enable_security

Security flag

Definition at line 246 of file libmc.h.

6.11.2.7 char* agency_s::filename

Definition at line 239 of file libmc.h.

6.11.2.8 char* agency_s::hostName

Local Hostname

Definition at line 238 of file libmc.h.

Referenced by MC_End(), and MC_Initialize().

6.11.2.9 int agency_s::initInterps

Definition at line 242 of file libmc.h.

Referenced by MC_Initialize(), and mc_platform_Initialize().

6.11.2.10 char* agency_s::known_host_filename

Definition at line 251 of file libmc.h.

Referenced by listen_Thread(), MC_Initialize(), and message_send_Thread().

6.11.2.11 error_code_t agency_s::last_error

Definition at line 252 of file libmc.h.

Referenced by mc_platform_Initialize().

6.11.2.12 struct mc_platform_s* agency_s::mc_platform

Local MobileC Platform

Definition at line 243 of file libmc.h.

Referenced by MC_AclSend(), MC_AclSend_chdl(), MC_AddAgent(), MC_AddAgent_chdl(), MC_AddStationaryAgent(), MC_AgentProcessingBegin(), MC_AgentProcessingEnd(), MC_Barrier(), MC_Barrier_chdl(), MC_BarrierDelete(), MC_BarrierDelete_chdl(), MC_BarrierInit(), MC_BarrierInit_chdl(), MC_CondBroadcast(), MC_CondBroadcast_chdl(), MC_CondReset(), MC_CondReset_chdl(), MC_CondSignal(), MC_CondSignal_chdl(), MC_CondWait(), MC_CondWait_chdl(), MC_DeregisterService(), MC_DeregisterService_chdl(), MC_End(), MC_End_chdl(), MC_FindAgentByID(), MC_FindAgentByID_chdl(), MC_FindAgentByName(), MC_FindAgentByName_chdl(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_HaltAgency(), MC_HaltAgency_chdl(), MC_Initialize(), MC_LoadAgentFromFile(), MC_MainLoop(), MC_MutexLock(), MC_MutexLock_chdl(), MC_MutexUnlock(), MC_MutexUnlock_chdl(), MC_QueueRDLock(), MC_QueueRDUnlock(), MC_QueueWRLock(), MC_QueueWRUnlock(), MC_RegisterService(), MC_RegisterService_chdl(), MC_ResetSignal(), MC_ResumeAgency(), MC_ResumeAgency_chdl(), MC_RetrieveAgent(), MC_RetrieveAgent_chdl(), MC_SearchForService(), MC_SearchForService_chdl(), MC_SemaphorePost(), MC_SemaphorePost_chdl(), MC_SemaphoreWait(), MC_SemaphoreWait_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessage_chdl(), MC_SendAgentMigrationMessageFile(), MC_SendSteerCommand(), MC_SendSteerCommand_chdl(), MC_SetDefaultAgentStatus(), MC_SetDefaultAgentStatus_chdl(), MC_Steer(), MC_SyncDelete(), MC_SyncDelete_chdl(), MC_SyncInit(), MC_SyncInit_chdl(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and MC_WaitSignal().

6.11.2.13 int agency_s::portno

Local port number

Definition at line 240 of file libmc.h.

Referenced by listen_Thread(), MC_End(), MC_Initialize(), and mc_platform_Initialize().

6.11.2.14 int agency_s::portnoc

Definition at line 241 of file libmc.h.

6.11.2.15 char* agency_s::priv_key_filename

Definition at line 250 of file libmc.h.

Referenced by MC_Initialize().

6.11.2.16 int agency_s::server

Definition at line 237 of file libmc.h.

Referenced by MC_Initialize().

6.11.2.17 int agency_s::stack_size[MC_THREAD_ALL]

Definition at line 247 of file libmc.h.

Referenced by MC_Initialize(), and mc_platform_Initialize().

6.11.2.18 int agency_s::threads

flag which determines which threads to start

Definition at line 245 of file libmc.h.

Referenced by MC_End(), MC_Initialize(), and mc_platform_Initialize().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[libmc.h](#)

6.12 agent_datastate_s Struct Reference

```
#include <agent_datastate.h>
```

Data Fields

- char ** [agent_code_ids](#)
- char ** [agent_codes](#)
- char * [agent_code](#)
- [agent_task_p](#) * [tasks](#)
- [mxml_node_t](#) * [xml_agent_root](#)
- [mxml_node_t](#) * [xml_root](#)
- int [task_progress](#)
- int [return_data](#)
- int [number_of_tasks](#)
- int [persistent](#)
- int [init_agent_status](#)
- int [progress_modifier](#)

6.12.1 Detailed Description

Definition at line 41 of file agent_datastate.h.

6.12.2 Field Documentation

6.12.2.1 char* agent_datastate_s::agent_code

Definition at line 45 of file agent_datastate.h.

Referenced by [agent_datastate_Copy\(\)](#), [agent_datastate_New\(\)](#), [agent_xml_parse_agent_code\(\)](#), [agent_xml_parse_tasks\(\)](#), [MC_ComposeAgentWithWorkgroup\(\)](#), [MC_PrintAgentCode\(\)](#), and [MC_RetrieveAgentCode\(\)](#).

6.12.2.2 char** agent_datastate_s::agent_code_ids

Definition at line 43 of file agent_datastate.h.

Referenced by [agent_datastate_Copy\(\)](#), [agent_datastate_Destroy\(\)](#), [agent_xml_compose_agent_code\(\)](#), [agent_xml_parse_agent_code\(\)](#), [agent_xml_parse_tasks\(\)](#), [MC_AgentAddTask\(\)](#), and [MC_ComposeAgentWithWorkgroup\(\)](#).

6.12.2.3 char** agent_datastate_s::agent_codes

Definition at line 44 of file agent_datastate.h.

Referenced by [agent_datastate_Copy\(\)](#), [agent_datastate_Destroy\(\)](#), [agent_xml_compose_agent_code\(\)](#), [agent_xml_parse_agent_code\(\)](#), [agent_xml_parse_tasks\(\)](#), [MC_AgentAddTask\(\)](#), and [MC_ComposeAgentWithWorkgroup\(\)](#).

6.12.2.4 int agent_datastate_s::init_agent_status

Definition at line 63 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), and agent_datastate_New().

6.12.2.5 int agent_datastate_s::number_of_tasks

Definition at line 59 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), agent_datastate_Destroy(), agent_datastate_New(), agent_xml_compose_tasks(), agent_xml_parse_agent_code(), agent_xml_parse_tasks(), MC_AgentAddTask(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentReturnArrayDim(), MC_AgentReturnArrayExtent(), MC_AgentReturnArrayNum(), MC_AgentReturnDataGetSymbolAddr(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_AgentReturnIsArray(), MC_ComposeAgentWithWorkgroup(), MC_GetAgentNumTasks(), MC_GetAgentReturnData(), MC_PrintAgentCode(), and message_InitializeFromAgent().

6.12.2.6 int agent_datastate_s::persistent

Definition at line 62 of file agent_datastate.h.

Referenced by acc_MessageHandlerThread(), agent_datastate_Copy(), agent_datastate_New(), and agent_xml_compose_task().

6.12.2.7 int agent_datastate_s::progress_modifier

Definition at line 71 of file agent_datastate.h.

Referenced by agent_datastate_New(), and MC_MigrateAgent().

6.12.2.8 int agent_datastate_s::return_data

Definition at line 56 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), and agent_datastate_New().

6.12.2.9 int agent_datastate_s::task_progress

Definition at line 55 of file agent_datastate.h.

Referenced by agent_AddPersistentVariable(), agent_datastate_Copy(), agent_datastate_New(), agent_RunChScriptThread(), agent_xml_compose_tasks(), agent_xml_parse_agent_code(), agent_xml_parse_tasks(), interpreter_variable_data_InitializeFromAgent(), MC_AgentAttachFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_AgentVariableSave(), MC_MigrateAgent(), MC_PrintAgentCode(), MC_RetrieveAgentCode(), MC_SaveData_chdl(), and message_InitializeFromAgent().

6.12.2.10 agent_task_p* agent_datastate_s::tasks

Definition at line 48 of file agent_datastate.h.

Referenced by agent_AddPersistentVariable(), agent_datastate_Copy(), agent_datastate_Destroy(), agent_datastate_New(), agent_xml_compose_task(), agent_xml_parse_agent_code(), agent_xml_parse_data(), agent_xml_parse_file(), agent_xml_parse_task(), agent_xml_parse_tasks(), interpreter_variable_data_InitializeFromAgent(), MC_AgentAddTask(), MC_AgentAttachFile(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentReturnArrayDim(), MC_AgentReturnArrayExtent(), MC_AgentReturnArrayNum(), MC_AgentReturnDataGetSymbolAddr(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_AgentReturnIsArray(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_AgentVariableSave(), MC_ComposeAgentWithWorkgroup(), MC_GetAgentReturnData(), MC_MigrateAgent(), MC_SaveData_chdl(), and message_InitializeFromAgent().

6.12.2.11 `mxml_node_t* agent_datastate_s::xml_agent_root`

Definition at line 51 of file agent_datastate.h.

Referenced by agent_datastate_New(), agent_Initialize(), agent_xml_parse(), and MC_GetAgentXMLString().

6.12.2.12 `mxml_node_t* agent_datastate_s::xml_root`

Definition at line 52 of file agent_datastate.h.

Referenced by agent_datastate_Destroy(), agent_datastate_New(), agent_Initialize(), and agent_return_xml_parse().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[agent_datastate.h](#)

6.13 agent_file_data_s Struct Reference

```
#include <agent_file_data.h>
```

Data Fields

- char * **name**
- char * **data**

6.13.1 Detailed Description

Definition at line 35 of file agent_file_data.h.

6.13.2 Field Documentation

6.13.2.1 char* agent_file_data_s::data

Definition at line 38 of file agent_file_data.h.

Referenced by agent_file_data_Copy(), agent_file_data_Destroy(), agent_file_data_InitializeFromFilename(), agent_file_data_New(), agent_file_data_NewWithData(), agent_xml_compose_file(), and MC_AgentRetrieveFile().

6.13.2.2 char* agent_file_data_s::name

Definition at line 37 of file agent_file_data.h.

Referenced by agent_file_data_CmpName(), agent_file_data_Copy(), agent_file_data_Destroy(), agent_file_data_InitializeFromFilename(), agent_file_data_New(), agent_file_data_NewWithData(), agent_xml_compose_file(), MC_AgentAttachFile(), and MC_AgentListFiles().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[agent_file_data.h](#)

6.14 agent_s Struct Reference

```
#include <agent.h>
```

Data Fields

- u_long [id](#)
- char * [name](#)
- u_long [connect_id](#)
- time_t [arrival_time](#)
- char * [owner](#)
- char * [home](#)
- char * [sender](#)
- int [home_port](#)
- char * [wg_code](#)
- char * [agent_address](#)
- int [orphan](#)
- [agent_datastate_p](#) [datastate](#)
- enum MC_AgentType_e [agent_type](#)
- enum MC_AgentStatus_e [agent_status](#)
- int [return_data](#)
- ChInterp_t * [agent_interp](#)
- MUTEX_T * [run_lock](#)
- int [agent_thread_id](#)
- THREAD_T [agent_thread](#)
- list_t * [mailbox](#)
- int [agent_pipe_active](#)
- int [agent_ready_to_send](#)
- int [agent_pipe_ready_to_read](#)
- int [agent_script_ready](#)
- int [agent_persistent](#)
- struct mc_platform_s * [mc_platform](#)
- MUTEX_T * [lock](#)
- MUTEX_T * [agent_status_lock](#)
- COND_T * [agent_status_cond](#)
- int [binary](#)

6.14.1 Detailed Description

Definition at line 46 of file agent.h.

6.14.2 Field Documentation

6.14.2.1 char* agent_s::agent_address

Definition at line 64 of file agent.h.

Referenced by [agent_Destroy\(\)](#), [agent_Initialize\(\)](#), and [agent_NewBinary\(\)](#).

6.14.2.2 ChInterp_t* agent_s::agent_interp

Definition at line 77 of file agent.h.

Referenced by agent_AddPersistentVariable(), agent_Copy(), agent_Destroy(), agent_RunChScriptThread(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), MC_CallAgentFunc(), MC_CallAgentFuncArg(), MC_CallAgentFuncV(), MC_CallAgentFuncVar(), MC_GetAgentExecEngine(), MC_TerminateAgent(), and MC_TerminateAgentWG().

6.14.2.3 int agent_s::agent_persistent

Definition at line 97 of file agent.h.

Referenced by agent_Copy().

6.14.2.4 int agent_s::agent_pipe_active

Definition at line 93 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.5 int agent_s::agent_pipe_ready_to_read

Definition at line 95 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.6 int agent_s::agent_ready_to_send

Definition at line 94 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.7 int agent_s::agent_script_ready

Definition at line 96 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.8 enum MC_AgentStatus_e agent_s::agent_status

Definition at line 72 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_Print(), agent_RunChScript(), ams_ManageAgentList(), MC_ComposeAgentWithWorkgroup(), MC_GetAgents(), MC_GetAgentStatus(), MC_RetrieveAgent(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), and MC_SetAgentStatus().

6.14.2.9 COND_T* agent_s::agent_status_cond

Definition at line 103 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_New(), agent_NewBinary(), agent_RunChScript(), ams_ManageAgentList(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), and MC_SetAgentStatus().

6.14.2.10 MUTEX_T* agent_s::agent_status_lock

Definition at line 102 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_New(), agent_NewBinary(), agent_Print(), agent_RunChScript(), ams_ManageAgentList(), MC_GetAgentStatus(), MC_RetrieveAgent(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), and MC_SetAgentStatus().

6.14.2.11 THREAD_T agent_s::agent_thread

Definition at line 87 of file agent.h.

Referenced by agent_RunChScript().

6.14.2.12 int agent_s::agent_thread_id

Definition at line 83 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.13 enum MC_AgentType_e agent_s::agent_type

Definition at line 71 of file agent.h.

Referenced by agent_Copy(), agent_Initialize(), agent_xml_compose_message(), MC_ComposeAgentWithWorkgroup(), and MC_GetAgentType().

6.14.2.14 time_t agent_s::arrival_time

Definition at line 53 of file agent.h.

Referenced by agent_Copy(), agent_Initialize(), agent_NewBinary(), and MC_GetAgentArrivalTime().

6.14.2.15 int agent_s::binary

Definition at line 105 of file agent.h.

Referenced by agent_NewBinary(), and ams_ManageAgentList().

6.14.2.16 u_long agent_s::connect_id

Definition at line 51 of file agent.h.

Referenced by agent_Print().

6.14.2.17 agent_datastate_p agent_s::datastate

Definition at line 70 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_return_xml_parse(), agent_RunChScriptThread(), agent_xml_compose_agent_code(), agent_xml_compose_task(), agent_xml_compose_tasks(), agent_xml_parse(), agent_xml_parse_agent_code(), agent_xml_parse_data(), agent_xml_parse_file(), agent_xml_parse_task(), agent_xml_parse_tasks(), interpreter_variable_data_InitializeFromAgent(), MC_AgentAddTask(), MC_AgentAttachFile(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentReturnArrayDim(), MC_AgentReturnArrayExtent(), MC_AgentReturnArrayNum(), MC_AgentReturnDataGetSymbolAddr(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_AgentReturnIsArray(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_AgentVariableSave(), MC_ComposeAgentWithWorkgroup(), MC_GetAgentNumTasks(), MC_GetAgentReturnData(), MC_GetAgentXMLString(), MC_MigrateAgent(), MC_PrintAgentCode(), MC_RetrieveAgentCode(), MC_SaveData_chdl(), and message_InitializeFromAgent().

6.14.2.18 char* agent_s::home

Definition at line 59 of file agent.h.

Referenced by agent_Copy(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_xml_compose_home(), agent_xml_parse_home(), MC_ComposeAgentWithWorkgroup(), and message_InitializeFromAgent().

6.14.2.19 int agent_s::home_port

Definition at line 61 of file agent.h.

Referenced by agent_Copy().

6.14.2.20 u_long agent_s::id

Definition at line 49 of file agent.h.

Referenced by agent_CmpID(), agent_Copy(), agent_Initialize(), agent_NewBinary(), agent_Print(), agent_RunChScriptThread(), MC_GetAgentID(), and MC_RegisterService().

6.14.2.21 MUTEX_T* agent_s::lock

Definition at line 101 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_CmpID(), agent_CmpName(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_New(), agent_NewBinary(), ams_ManageAgentList(), MC_GetAgentName(), MC_GetAgentStatus(), MC_PrintAgentCode(), MC_RetrieveAgentCode(), MC_SetAgentStatus(), and MC_TerminateAgent().

6.14.2.22 list_t* agent_s::mailbox

Definition at line 90 of file agent.h.

Referenced by acc_connection_Thread(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_New(), agent_NewBinary(), MC_AclPost(), MC_AclRetrieve(), and MC_AclWaitRetrieve().

6.14.2.23 struct mc_platform_s* agent_s::mc_platform

Definition at line 99 of file agent.h.

Referenced by acc_connection_Thread(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_RunChScript(), agent_RunChScriptThread(), MC_AddAgent(), MC_DeleteAgent(), MC_DeleteAgentWG(), and MC_SetAgentStatus().

6.14.2.24 char* agent_s::name

Definition at line 50 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_CmpName(), agent_Copy(), agent_Destroy(), agent_RunChScriptThread(), agent_xml_compose__name(), agent_xml_parse__name(), ams_ManageAgentList(), MC_AddStationaryAgent(), MC_ComposeAgentWithWorkgroup(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_GetAgentName(), MC_RegisterService(), and message_InitializeFromAgent().

6.14.2.25 int agent_s::orphan

Definition at line 66 of file agent.h.

Referenced by agent_Copy(), agent_Initialize(), agent_NewBinary(), ams_ManageAgentList(), MC_ComposeAgentWithWorkgroup(), and MC_SetAgentStatus().

6.14.2.26 char* agent_s::owner

Definition at line 58 of file agent.h.

Referenced by agent_Copy(), agent_Destroy(), agent_xml_compose__owner(), agent_xml_parse__owner(), and MC_ComposeAgentWithWorkgroup().

6.14.2.27 int agent_s::return_data

Definition at line 74 of file agent.h.

Referenced by agent_Copy().

6.14.2.28 MUTEX_T* agent_s::run_lock

Definition at line 80 of file agent.h.

Referenced by agent_Copy(), agent_Destroy(), agent_Initialize(), agent_New(), agent_NewBinary(), ams_ManageAgentList(), interpreter_variable_data_Initialize(), MC_CallAgentFunc(), MC_CallAgentFuncArg(), MC_CallAgentFuncV(), and MC_CallAgentFuncVar().

6.14.2.29 char* agent_s::sender

Definition at line 60 of file agent.h.

Referenced by agent_Destroy(), agent_Initialize(), agent_NewBinary(), and agent_xml_parse__sender().

6.14.2.30 char* agent_s::wg_code

Definition at line 62 of file agent.h.

Referenced by agent_Destroy(), agent_xml_compose_wg_code(), agent_xml_parse_wg_code(), MC_ComposeAgentWithWorkgroup(), MC_DeleteAgent(), MC_DeleteAgentWG(), and MC_TerminateAgentWG().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/agent.h

6.15 agent_task_s Struct Reference

```
#include <agent_task.h>
```

Data Fields

- int number_of_elements
- int size_of_element_array
- int persistent
- int init_agent_status
- char * var_name
- char * server_name
- char * code_id
- interpreter_variable_data_t * agent_return_data
- list_t * agent_variable_list
- char ** saved_variables
- int num_saved_variables
- list_t * agent_file_list

6.15.1 Detailed Description

Definition at line 40 of file agent_task.h.

6.15.2 Field Documentation

6.15.2.1 list_t* agent_task_s::agent_file_list

Definition at line 57 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_task_New(), agent_xml_compose_task(), agent_xml_parse_file(), MC_AgentAttachFile(), MC_AgentListFiles(), and MC_AgentRetrieveFile().

6.15.2.2 interpreter_variable_data_t* agent_task_s::agent_return_data

Definition at line 52 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_xml_compose_task(), agent_xml_parse_data(), MC_AgentReturnArrayDim(), MC_AgentReturnArrayExtent(), MC_AgentReturnArrayNum(), MC_AgentReturnDataGetSymbolAddr(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_AgentReturnIsArray(), and MC_GetAgentReturnData().

6.15.2.3 list_t* agent_task_s::agent_variable_list

Definition at line 53 of file agent_task.h.

Referenced by agent_AddPersistentVariable(), agent_task_Copy(), agent_task_Destroy(), agent_task_New(), agent_xml_compose_task(), agent_xml_parse_data(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), and MC_SaveData_chdl().

6.15.2.4 char* agent_task_s::code_id

Definition at line 49 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__agent_code(), agent_xml_parse__task(), and MC_AgentAddTask().

6.15.2.5 int agent_task_s::init_agent_status

Definition at line 45 of file agent_task.h.

Referenced by agent_task_Copy().

6.15.2.6 int agent_task_s::num_saved_variables

Definition at line 55 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_New(), and MC_AgentVariableSave().

6.15.2.7 int agent_task_s::number_of_elements

Definition at line 42 of file agent_task.h.

Referenced by agent_task_Copy().

6.15.2.8 int agent_task_s::persistent

Definition at line 44 of file agent_task.h.

Referenced by agent_task_Copy(), agent_xml_compose__task(), agent_xml_parse__data(), agent_xml_parse__task(), MC_AgentAddTask(), and MC_ComposeAgentWithWorkgroup().

6.15.2.9 char agent_task_s::saved_variables**

Definition at line 54 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_task_New(), and MC_AgentVariableSave().

6.15.2.10 char* agent_task_s::server_name

Definition at line 48 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__task(), MC_AgentAddTask(), MC_ComposeAgentWithWorkgroup(), MC_MigrateAgent(), and message_InitializeFromAgent().

6.15.2.11 int agent_task_s::size_of_element_array

Definition at line 43 of file agent_task.h.

Referenced by agent_task_Copy().

6.15.2.12 char* agent_task_s::var_name

Definition at line 47 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__task(), interpreter_variable_data_InitializeFromAgent(), MC_AgentAddTask(), and MC_ComposeAgentWithWorkgroup().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[agent_task.h](#)

6.16 arc4_context Struct Reference

ARC4 context structure.

```
#include <arc4.h>
```

Data Fields

- int [x](#)
- int [y](#)
- unsigned char [m](#) [256]

6.16.1 Detailed Description

ARC4 context structure.

Definition at line 10 of file arc4.h.

6.16.2 Field Documentation

6.16.2.1 unsigned char arc4_context::m[256]

permutation table

Definition at line 14 of file arc4.h.

Referenced by [arc4_crypt\(\)](#), and [arc4_setup\(\)](#).

6.16.2.2 int arc4_context::x

permutation index

Definition at line 12 of file arc4.h.

Referenced by [arc4_crypt\(\)](#), and [arc4_setup\(\)](#).

6.16.2.3 int arc4_context::y

permutation index

Definition at line 13 of file arc4.h.

Referenced by [arc4_crypt\(\)](#), and [arc4_setup\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[arc4.h](#)

6.17 barrier_node_s Struct Reference

```
#include <barrier.h>
```

Data Fields

- MUTEX_T * [lock](#)
- COND_T * [cond](#)
- int [id](#)
- int [num_registered](#)
- int [num_waiting](#)

6.17.1 Detailed Description

Definition at line 42 of file barrier.h.

6.17.2 Field Documentation

6.17.2.1 COND_T* barrier_node_s::cond

Definition at line 43 of file barrier.h.

Referenced by [barrier_node_Destroy\(\)](#), [barrier_node_Initialize\(\)](#), and [MC_Barrier\(\)](#).

6.17.2.2 int barrier_node_s::id

Definition at line 44 of file barrier.h.

Referenced by [barrier_node_CmpID\(\)](#), and [barrier_node_Initialize\(\)](#).

6.17.2.3 MUTEX_T* barrier_node_s::lock

Definition at line 42 of file barrier.h.

Referenced by [barrier_node_CmpID\(\)](#), [barrier_node_Destroy\(\)](#), [barrier_node_Initialize\(\)](#), and [MC_Barrier\(\)](#).

6.17.2.4 int barrier_node_s::num_registered

Definition at line 45 of file barrier.h.

Referenced by [barrier_node_Initialize\(\)](#), and [MC_Barrier\(\)](#).

6.17.2.5 int barrier_node_s::num_waiting

Definition at line 46 of file barrier.h.

Referenced by [barrier_node_Initialize\(\)](#), and [MC_Barrier\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[barrier.h](#)

6.18 barrier_queue_s Struct Reference

```
#include <barrier.h>
```

Data Fields

- RWLOCK_T * [lock](#)
- [list_p](#) [list](#)
- int [size](#)

6.18.1 Detailed Description

Definition at line 51 of file barrier.h.

6.18.2 Field Documentation

6.18.2.1 [list_p](#) [barrier_queue_s::list](#)

Definition at line 54 of file barrier.h.

6.18.2.2 [RWLOCK_T*](#) [barrier_queue_s::lock](#)

Definition at line 52 of file barrier.h.

6.18.2.3 int [barrier_queue_s::size](#)

Definition at line 55 of file barrier.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[barrier.h](#)

6.19 base64_decodestate Struct Reference

```
#include <cdecode.h>
```

Data Fields

- `base64_decodestep step`
- `char plainchar`

6.19.1 Detailed Description

Definition at line 16 of file cdecode.h.

6.19.2 Field Documentation

6.19.2.1 `char base64_decodestate::plainchar`

Definition at line 19 of file cdecode.h.

Referenced by `base64_decode_block()`, and `base64_init_decodestate()`.

6.19.2.2 `base64_decodestep base64_decodestate::step`

Definition at line 18 of file cdecode.h.

Referenced by `base64_decode_block()`, and `base64_init_decodestate()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cdecode.h`

6.20 base64::base64_decodestate Struct Reference

```
#include <decode.h>
```

Data Fields

- `base64_decodestep step`
- `char plainchar`

6.20.1 Detailed Description

Definition at line 17 of file decode.h.

6.20.2 Field Documentation

6.20.2.1 `char base64::base64_decodestate::plainchar`

Definition at line 20 of file decode.h.

6.20.2.2 `base64_decodestep base64::base64_decodestate::step`

Definition at line 19 of file decode.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/decode.h

6.21 base64_encodestate Struct Reference

```
#include <cencode.h>
```

Data Fields

- `base64_encodestep step`
- `char result`
- `int stepcount`

6.21.1 Detailed Description

Definition at line 16 of file cencode.h.

6.21.2 Field Documentation

6.21.2.1 `char base64_encodestate::result`

Definition at line 19 of file cencode.h.

Referenced by `base64_encode_block()`, `base64_encode_blockend()`, and `base64_init_encodestate()`.

6.21.2.2 `base64_encodestep base64_encodestate::step`

Definition at line 18 of file cencode.h.

Referenced by `base64_encode_block()`, `base64_encode_blockend()`, and `base64_init_encodestate()`.

6.21.2.3 `int base64_encodestate::stepcount`

Definition at line 20 of file cencode.h.

Referenced by `base64_encode_block()`, and `base64_init_encodestate()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cencode.h`

6.22 base64::base64_encodestate Struct Reference

```
#include <encode.h>
```

Data Fields

- `base64_encodestep step`
- `char result`
- `int stepcount`

6.22.1 Detailed Description

Definition at line 17 of file encode.h.

6.22.2 Field Documentation

6.22.2.1 `char base64::base64_encodestate::result`

Definition at line 20 of file encode.h.

6.22.2.2 `base64_encodestep base64::base64_encodestate::step`

Definition at line 19 of file encode.h.

6.22.2.3 `int base64::base64_encodestate::stepcount`

Definition at line 21 of file encode.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/encode.h

6.23 cmd_prompt_s Struct Reference

```
#include <cmd_prompt.h>
```

Data Fields

- THREAD_T [thread](#)

6.23.1 Detailed Description

Definition at line 41 of file cmd_prompt.h.

6.23.2 Field Documentation

6.23.2.1 THREAD_T cmd_prompt_s::thread

Definition at line 42 of file cmd_prompt.h.

Referenced by cmd_prompt_Start(), and MC_End().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[cmd_prompt.h](#)

6.24 command_s Struct Reference

```
#include <cmd_prompt.h>
```

Data Fields

- int [index](#)
- int [num_args](#)
- char ** [args](#)

6.24.1 Detailed Description

Definition at line 46 of file cmd_prompt.h.

6.24.2 Field Documentation

6.24.2.1 char** command_s::args

Definition at line 49 of file cmd_prompt.h.

Referenced by [cmd_prompt_Thread\(\)](#), [dealloc_command\(\)](#), [exec_command\(\)](#), [handler_COMPOSE_SEND\(\)](#), [handler_HELP\(\)](#), [handler_SEND\(\)](#), and [process_command\(\)](#).

6.24.2.2 int command_s::index

Definition at line 47 of file cmd_prompt.h.

Referenced by [cmd_prompt_Thread\(\)](#), [exec_command\(\)](#), and [process_command\(\)](#).

6.24.2.3 int command_s::num_args

Definition at line 48 of file cmd_prompt.h.

Referenced by [cmd_prompt_Thread\(\)](#), [dealloc_command\(\)](#), [exec_command\(\)](#), [handler_COMPOSE_SEND\(\)](#), [handler_HELP\(\)](#), [handler_SEND\(\)](#), and [process_command\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[cmd_prompt.h](#)

6.25 connection_s Struct Reference

```
#include <connection.h>
```

Data Fields

- int `connect_id`
- int `nonce`
- char * `remote_hostname`
- struct sockaddr_in `addr`
- u_long `clientfd`
- u_long `serverfd`
- unsigned char * `AES_key`

6.25.1 Detailed Description

Definition at line 46 of file connection.h.

6.25.2 Field Documentation

6.25.2.1 struct sockaddr_in connection_s::addr

Definition at line 56 of file connection.h.

Referenced by `connection_Copy()`, `listen_Thread()`, and `message_InitializeFromConnection()`.

6.25.2.2 unsigned char* connection_s::AES_key

Definition at line 63 of file connection.h.

Referenced by `listen_Thread()`, and `rece_de_msg()`.

6.25.2.3 u_long connection_s::clientfd

Definition at line 59 of file connection.h.

Referenced by `connection_Copy()`, `connection_Destroy()`, `listen_Thread()`, `message_InitializeFromConnection()`, `ntp_http_InitializeFromConnection()`, and `rece_de_msg()`.

6.25.2.4 int connection_s::connect_id

Definition at line 49 of file connection.h.

Referenced by `connection_Copy()`, `connection_Print()`, `listen_Thread()`, and `message_InitializeFromConnection()`.

6.25.2.5 int connection_s::nonce

Definition at line 51 of file connection.h.

Referenced by `listen_Thread()`, and `rece_de_msg()`.

6.25.2.6 char* connection_s::remote_hostname

Definition at line 54 of file connection.h.

Referenced by connection_Copy(), connection_Destroy(), connection_Print(), and listen_Thread().

6.25.2.7 u_long connection_s::serverfd

Definition at line 60 of file connection.h.

Referenced by connection_Copy(), and listen_Thread().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[connection.h](#)

6.26 fipa_expression_s::content_u Union Reference

```
#include <fipa_acl.h>
```

Data Fields

- struct fipa_word_s * word
- struct fipa_string_s * string
- struct fipa_number_s * number
- struct fipa_DateTime_s * datetime
- struct fipa_expression_s ** expression

6.26.1 Detailed Description

Definition at line 196 of file fipa_acl.h.

6.26.2 Field Documentation

6.26.2.1 struct fipa_DateTime_s* fipa_expression_s::content_u::datetime

Definition at line 201 of file fipa_acl.h.

Referenced by fipa_expression_Compose(), fipa_expression_Copy(), and fipa_expression_Destroy().

6.26.2.2 struct fipa_expression_s** fipa_expression_s::content_u::expression

Definition at line 202 of file fipa_acl.h.

Referenced by fipa_expression_Compose(), fipa_expression_Copy(), and fipa_expression_Destroy().

6.26.2.3 struct fipa_number_s* fipa_expression_s::content_u::number

Definition at line 200 of file fipa_acl.h.

Referenced by fipa_expression_Compose(), fipa_expression_Copy(), and fipa_expression_Destroy().

6.26.2.4 struct fipa_string_s* fipa_expression_s::content_u::string

Definition at line 199 of file fipa_acl.h.

Referenced by fipa_expression_Compose(), fipa_expression_Copy(), fipa_expression_Destroy(), MC_AclGetConversationID(), and MC_AclSetConversationID().

6.26.2.5 struct fipa_word_s* fipa_expression_s::content_u::word

Definition at line 198 of file fipa_acl.h.

Referenced by fipa_expression_Compose(), fipa_expression_Copy(), and fipa_expression_Destroy().

The documentation for this union was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_acl.h](#)

6.27 base64::decoder Struct Reference

```
#include <decode.h>
```

Public Member Functions

- `decoder` (int buffersize_in=BUFFERSIZE)
- int `decode` (char value_in)
- int `decode` (const char *code_in, const int length_in, char *plaintext_out)
- void `decode` (std::istream &istream_in, std::ostream &ostream_in)

Data Fields

- `base64_decodestate _state`
- int `_buffersize`

6.27.1 Detailed Description

Definition at line 20 of file decode.h.

6.27.2 Constructor & Destructor Documentation

6.27.2.1 `base64::decoder::decoder (int buffersize_in = BUFFERSIZE) [inline]`

Definition at line 22 of file decode.h.

6.27.3 Member Function Documentation

6.27.3.1 `void base64::decoder::decode (std::istream &istream_in, std::ostream &ostream_in) [inline]`

Definition at line 36 of file decode.h.

6.27.3.2 `int base64::decoder::decode (const char * code_in, const int length_in, char * plaintext_out) [inline]`

Definition at line 31 of file decode.h.

6.27.3.3 `int base64::decoder::decode (char value_in) [inline]`

Definition at line 26 of file decode.h.

Referenced by main().

6.27.4 Field Documentation

6.27.4.1 int base64::decoder::_buffersize

Definition at line 20 of file decode.h.

6.27.4.2 base64_decodestate base64::decoder::_state

Definition at line 19 of file decode.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/[decode.h](#)

6.28 des3_context Struct Reference

Triple-DES context structure.

```
#include <des.h>
```

Data Fields

- int mode
- unsigned long sk [96]

6.28.1 Detailed Description

Triple-DES context structure.

Definition at line 23 of file des.h.

6.28.2 Field Documentation

6.28.2.1 int des3_context::mode

encrypt/decrypt

Definition at line 25 of file des.h.

6.28.2.2 unsigned long des3_context::sk[96]

3DES subkeys

Definition at line 26 of file des.h.

Referenced by des3_crypt_ecb(), des3_set2key_dec(), des3_set2key_enc(), des3_set3key_dec(), and des3_set3key_enc().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[des.h](#)

6.29 des_context Struct Reference

DES context structure.

```
#include <des.h>
```

Data Fields

- int mode
- unsigned long sk [32]

6.29.1 Detailed Description

DES context structure.

Definition at line 13 of file des.h.

6.29.2 Field Documentation

6.29.2.1 int des_context::mode

encrypt/decrypt

Definition at line 15 of file des.h.

6.29.2.2 unsigned long des_context::sk[32]

DES subkeys

Definition at line 16 of file des.h.

Referenced by des_crypt_ecb(), des_setkey_dec(), and des_setkey_enc().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[des.h](#)

6.30 dhm_context Struct Reference

```
#include <dhm.h>
```

Data Fields

- int len
- mpi P
- mpi G
- mpi X
- mpi GX
- mpi GY
- mpi K
- mpi RP

6.30.1 Detailed Description

Definition at line 16 of file dhm.h.

6.30.2 Field Documentation

6.30.2.1 mpi dhm_context::G

generator

Definition at line 20 of file dhm.h.

Referenced by dhm_free(), dhm_make_params(), dhm_make_public(), dhm_read_params(), main(), ssl_parse_server_key_exchange(), ssl_set_dh_param(), and ssl_write_server_key_exchange().

6.30.2.2 mpi dhm_context::GX

$\text{self} = \text{G}^{\wedge} \text{X} \bmod \text{P}$

Definition at line 22 of file dhm.h.

Referenced by dhm_free(), dhm_make_params(), dhm_make_public(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

6.30.2.3 mpi dhm_context::GY

$\text{peer} = \text{G}^{\wedge} \text{Y} \bmod \text{P}$

Definition at line 23 of file dhm.h.

Referenced by dhm_calc_secret(), dhm_free(), dhm_read_params(), dhm_read_public(), ssl_parse_client_key_exchange(), and ssl_parse_server_key_exchange().

6.30.2.4 mpi dhm_context::K

key = GY^X mod P

Definition at line 24 of file dhm.h.

Referenced by dhm_calc_secret(), dhm_free(), ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

6.30.2.5 int dhm_context::len

size(P) in chars

Definition at line 18 of file dhm.h.

Referenced by dhm_make_params(), dhm_make_public(), dhm_read_params(), dhm_read_public(), main(), ssl_parse_client_key_exchange(), ssl_parse_server_key_exchange(), and ssl_write_client_key_exchange().

6.30.2.6 mpi dhm_context::P

prime modulus

Definition at line 19 of file dhm.h.

Referenced by dhm_calc_secret(), dhm_free(), dhm_make_params(), dhm_make_public(), dhm_read_params(), main(), ssl_parse_server_key_exchange(), ssl_set_dh_param(), and ssl_write_server_key_exchange().

6.30.2.7 mpi dhm_context::RP

cached R² mod P

Definition at line 25 of file dhm.h.

Referenced by dhm_calc_secret(), dhm_free(), dhm_make_params(), and dhm_make_public().

6.30.2.8 mpi dhm_context::X

secret value

Definition at line 21 of file dhm.h.

Referenced by dhm_calc_secret(), dhm_free(), dhm_make_params(), dhm_make_public(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[dhm.h](#)

6.31 dynstring_s Struct Reference

```
#include <dynstring.h>
```

Data Fields

- int `len`
- int `size`
- char * `message`

6.31.1 Detailed Description

Definition at line 9 of file dynstring.h.

6.31.2 Field Documentation

6.31.2.1 int dynstring_s::len

Definition at line 10 of file dynstring.h.

Referenced by `dynstring_Append()`, `dynstring_New()`, and `mtp_http_CreateMessage()`.

6.31.2.2 char* dynstring_s::message

Definition at line 12 of file dynstring.h.

Referenced by `dynstring_Append()`, `dynstring_Destroy()`, `dynstring_New()`, `fipa_envelope_Compose__from()`, `MC_AclSend()`, `message_send_Thread()`, and `mtp_http_CreateMessage()`.

6.31.2.3 int dynstring_s::size

Definition at line 11 of file dynstring.h.

Referenced by `dynstring_Append()`, and `dynstring_New()`.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[dynstring.h](#)

6.32 base64::encoder Struct Reference

```
#include <encode.h>
```

Public Member Functions

- `encoder` (int buffersize_in=BUFFERSIZE)
- int `encode` (char value_in)
- int `encode` (const char *code_in, const int length_in, char *plaintext_out)
- int `encode_end` (char *plaintext_out)
- void `encode` (std::istream &istream_in, std::ostream &ostream_in)

Data Fields

- `base64_encodestate _state`
- int `_buffersize`

6.32.1 Detailed Description

Definition at line 20 of file encode.h.

6.32.2 Constructor & Destructor Documentation

6.32.2.1 `base64::encoder::encoder (int bufsize_in = BUFFERSIZE) [inline]`

Definition at line 22 of file encode.h.

6.32.3 Member Function Documentation

6.32.3.1 `void base64::encoder::encode (std::istream & istream_in, std::ostream & ostream_in) [inline]`

Definition at line 41 of file encode.h.

6.32.3.2 `int base64::encoder::encode (const char * code_in, const int length_in, char * plaintext_out) [inline]`

Definition at line 31 of file encode.h.

6.32.3.3 `int base64::encoder::encode (char value_in) [inline]`

Definition at line 26 of file encode.h.

Referenced by main().

6.32.3.4 `int base64::encoder::encode_end (char * plaintext_out) [inline]`

Definition at line 36 of file encode.h.

6.32.4 Field Documentation

6.32.4.1 int base64::encoder::_buffersize

Definition at line 20 of file encode.h.

6.32.4.2 base64_encodestate base64::encoder::_state

Definition at line 19 of file encode.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/encode.h

6.33 fipa_acl_envelope_Received_s Struct Reference

```
#include <fipa_acl_envelope.h>
```

Data Fields

- struct fipa_url_s * received_by
- struct fipa_url_s * received_from
- struct fipa_DateTime_s * received_date
- char * received_id
- struct fipa_url_s * received_via

6.33.1 Detailed Description

Definition at line 7 of file fipa_acl_envelope.h.

6.33.2 Field Documentation

6.33.2.1 struct fipa_url_s* fipa_acl_envelope_Received_s::received_by

Definition at line 9 of file fipa_acl_envelope.h.

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_envelope_Received_Destroy(), and fipa_envelope_HandleReceived().

6.33.2.2 struct fipa_DateTime_s* fipa_acl_envelope_Received_s::received_date

Definition at line 11 of file fipa_acl_envelope.h.

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_envelope_Received_Destroy(), and fipa_envelope_HandleReceived().

6.33.2.3 struct fipa_url_s* fipa_acl_envelope_Received_s::received_from

Definition at line 10 of file fipa_acl_envelope.h.

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_envelope_Received_Destroy(), and fipa_envelope_HandleReceived().

6.33.2.4 char* fipa_acl_envelope_Received_s::received_id

Definition at line 12 of file fipa_acl_envelope.h.

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_envelope_Received_Destroy(), and fipa_envelope_HandleReceived().

6.33.2.5 struct fipa_url_s* fipa_acl_envelope_Received_s::received_via

Definition at line 13 of file fipa_acl_envelope.h.

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_envelope_Received_Destroy(), and fipa_envelope_HandleReceived().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_acl_envelope.h](#)

6.34 fipa_acl_envelope_s Struct Reference

```
#include <fipa_acl_envelope.h>
```

Data Fields

- int num_params
- struct fipa_acl_Param_s ** params

6.34.1 Detailed Description

Definition at line 40 of file fipa_acl_envelope.h.

6.34.2 Field Documentation

6.34.2.1 int fipa_acl_envelope_s::num_params

Definition at line 42 of file fipa_acl_envelope.h.

Referenced by acc_connection_Thread(), fipa_acl_envelope_Copy(), fipa_acl_envelope_Destroy(), and fipa_envelope_HandleParams().

6.34.2.2 struct fipa_acl_Param_s** fipa_acl_envelope_s::params

Definition at line 43 of file fipa_acl_envelope.h.

Referenced by acc_connection_Thread(), fipa_acl_envelope_Copy(), fipa_acl_envelope_Destroy(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleParams(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_HandleReceived(), and fipa_envelope_HandleTo().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h

6.35 fipa_acl_message_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- enum `fipa_performative_e` `performative`
- struct `fipa_agent_identifier_s` * `sender`
- struct `fipa_agent_identifier_set_s` * `receiver`
- int `receiver_num`
- struct `fipa_agent_identifier_set_s` * `reply_to`
- struct `fipa_string_s` * `content`
- struct `fipa_expression_s` * `language`
- struct `fipa_expression_s` * `encoding`
- struct `fipa_expression_s` * `ontology`
- enum `fipa_protocol_e` `protocol`
- struct `fipa_expression_s` * `conversation_id`
- struct `fipa_expression_s` * `reply_with`
- struct `fipa_expression_s` * `in_reply_to`
- struct `fipa_DateTime_s` * `reply_by`

6.35.1 Detailed Description

Definition at line 105 of file fipa_acl.h.

6.35.2 Field Documentation

6.35.2.1 struct fipa_string_s* fipa_acl_message_s::content

Definition at line 117 of file fipa_acl.h.

Referenced by `fipa_acl_Compose()`, `fipa_acl_message_Copy()`, `fipa_acl_message_Destroy()`, `fipa_message_parameter_Parse()`, `MC_AclGetContent()`, `MC_AclSetContent()`, and `MC_AclSetContent_chdl()`.

6.35.2.2 struct fipa_expression_s* fipa_acl_message_s::conversation_id

Definition at line 128 of file fipa_acl.h.

Referenced by `fipa_acl_Compose()`, `fipa_acl_message_Copy()`, `fipa_acl_message_Destroy()`, `fipa_message_parameter_Parse()`, `fipa_Reply()`, `MC_AclGetConversationID()`, and `MC_AclSetConversationID()`.

6.35.2.3 struct fipa_expression_s* fipa_acl_message_s::encoding

Definition at line 121 of file fipa_acl.h.

Referenced by `fipa_acl_Compose()`, `fipa_acl_message_Copy()`, `fipa_acl_message_Destroy()`, and `fipa_message_parameter_Parse()`.

6.35.2.4 struct fipa_expression_s* fipa_acl_message_s::in_reply_to

Definition at line 132 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

6.35.2.5 struct fipa_expression_s* fipa_acl_message_s::language

Definition at line 119 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

6.35.2.6 struct fipa_expression_s* fipa_acl_message_s::ontology

Definition at line 123 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

6.35.2.7 enum fipa_performative_e fipa_acl_message_s::performative

Definition at line 107 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_Parse(), MC_AclGetPerformative(), MC_AclGetProtocol(), MC_AclSetPerformative(), and MC_AclSetPerformative_chdl().

6.35.2.8 enum fipa_protocol_e fipa_acl_message_s::protocol

Definition at line 126 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_message_parameter_Parse(), fipa_Reply(), MC_AclSetProtocol(), and MC_AclSetProtocol_chdl().

6.35.2.9 struct fipa_agent_identifier_set_s* fipa_acl_message_s::receiver

Definition at line 111 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), fipa_envelope_Compose_intended_receiver(), fipa_envelope_Compose_to(), fipa_message_parameter_Parse(), fipa_Reply(), MC_AclAddReceiver(), and MC_AclSend().

6.35.2.10 int fipa_acl_message_s::receiver_num

Definition at line 112 of file fipa_acl.h.

Referenced by MC_AclAddReceiver().

6.35.2.11 struct fipa_DateTime_s* fipa_acl_message_s::reply_by

Definition at line 134 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

6.35.2.12 struct fipa_agent_identifier_set_s* fipa_acl_message_s::reply_to

Definition at line 114 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), fipa_message_parameter_Parse(), fipa_Reply(), and MC_AclAddReplyTo().

6.35.2.13 struct fipa_expression_s* fipa_acl_message_s::reply_with

Definition at line 130 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

6.35.2.14 struct fipa_agent_identifier_s* fipa_acl_message_s::sender

Definition at line 109 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), fipa_envelope_Compose_from(), fipa_message_parameter_Parse(), fipa_Reply(), MC_AclGetSender(), and MC_AclSetSender().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_acl.h

6.36 fipa_acl_Param_s Struct Reference

```
#include <fipa_acl_envelope.h>
```

Data Fields

- struct [fipa_agent_identifier_set_s](#) * `to`
- struct [fipa_agent_identifier_s](#) * `from`
- char * `comments`
- char * `acl_representation`
- char * `payload_length`
- char * `payload_encoding`
- struct [fipa_DateTime_s](#) * `date`
- struct [fipa_agent_identifier_set_s](#) * `intended_receiver`
- struct [fipa_acl_envelope_Received_s](#) * `received`

6.36.1 Detailed Description

Definition at line 22 of file `fipa_acl_envelope.h`.

6.36.2 Field Documentation

6.36.2.1 char* fipa_acl_Param_s::acl_representation

Definition at line 27 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_Param_Copy()`, `fipa_acl_Param_Destroy()`, and `fipa_envelope_HandleAclRepresentation()`.

6.36.2.2 char* fipa_acl_Param_s::comments

Definition at line 26 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_Param_Copy()`, `fipa_acl_Param_Destroy()`, and `fipa_envelope_HandleComments()`.

6.36.2.3 struct fipa_DateTime_s* fipa_acl_Param_s::date

Definition at line 30 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_Param_Copy()`, `fipa_acl_Param_Destroy()`, and `fipa_envelope_HandleDate()`.

6.36.2.4 struct fipa_agent_identifier_s* fipa_acl_Param_s::from

Definition at line 25 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_Param_Copy()`, `fipa_acl_Param_Destroy()`, and `fipa_envelope_HandleFrom()`.

6.36.2.5 struct fipa_agent_identifier_set_s* fipa_acl_Param_s::intended_receiver

Definition at line 31 of file fipa_acl_envelope.h.

Referenced by fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandleIntendedReceiver().

6.36.2.6 char* fipa_acl_Param_s::payload_encoding

Definition at line 29 of file fipa_acl_envelope.h.

Referenced by fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandlePayloadEncoding().

6.36.2.7 char* fipa_acl_Param_s::payload_length

Definition at line 28 of file fipa_acl_envelope.h.

Referenced by fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandlePayloadLength().

6.36.2.8 struct fipa_acl_envelope_Received_s* fipa_acl_Param_s::received

Definition at line 32 of file fipa_acl_envelope.h.

Referenced by fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandleReceived().

6.36.2.9 struct fipa_agent_identifier_set_s* fipa_acl_Param_s::to

Definition at line 24 of file fipa_acl_envelope.h.

Referenced by acc_connection_Thread(), fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandleTo().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h

6.37 fipa_agent_identifier_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- `char * name`
- `struct fipa_url_sequence_s * addresses`
- `struct fipa_agent_identifier_set_s * resolvers`

6.37.1 Detailed Description

Definition at line 180 of file fipa_acl.h.

6.37.2 Field Documentation

6.37.2.1 struct fipa_url_sequence_s* fipa_agent_identifier_s::addresses

Definition at line 183 of file fipa_acl.h.

Referenced by `acc_connection_Thread()`, `fipa_agent_identifier_Compose()`, `fipa_agent_identifier_Copy()`, `fipa_agent_identifier_Destroy()`, `fipa_envelope_Compose_from()`, `fipa_envelope_Compose_intended_receiver()`, `fipa_envelope_Compose_to()`, `fipa_envelope_ParseAddresses()`, `MC_AclAddReceiver()`, `MC_AclAddReplyTo()`, `MC_AclGetSender()`, `MC_AclSend()`, and `MC_AclSetSender()`.

6.37.2.2 char* fipa_agent_identifier_s::name

Definition at line 182 of file fipa_acl.h.

Referenced by `acc_connection_Thread()`, `fipa_agent_identifier_Compose()`, `fipa_agent_identifier_Copy()`, `fipa_agent_identifier_Destroy()`, `fipa_envelope_Compose_from()`, `fipa_envelope_Compose_intended_receiver()`, `fipa_envelope_Compose_to()`, `MC_AclAddReceiver()`, `MC_AclAddReplyTo()`, `MC_AclGetSender()`, `MC_AclSend()`, and `MC_AclSetSender()`.

6.37.2.3 struct fipa_agent_identifier_set_s* fipa_agent_identifier_s::resolvers

Definition at line 184 of file fipa_acl.h.

Referenced by `fipa_agent_identifier_Compose()`, `fipa_agent_identifier_Copy()`, `fipa_agent_identifier_Destroy()`, and `fipa_envelope_ParseResolvers()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/fipa_acl.h`

6.38 fipa_agent_identifier_set_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- int num
- int retain_order
- struct fipa_agent_identifier_s ** fipa_agent_identifiers

6.38.1 Detailed Description

Definition at line 166 of file fipa_acl.h.

6.38.2 Field Documentation

6.38.2.1 struct fipa_agent_identifier_s** fipa_agent_identifier_set_s::fipa_agent_identifiers

Definition at line 170 of file fipa_acl.h.

Referenced by acc_connection_Thread(), fipa_agent_identifier_set_Compose(), fipa_agent_identifier_set_Copy(), fipa_agent_identifier_set_Destroy(), fipa_envelope_Compose_intended_receiver(), fipa_envelope_Compose_to(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), fipa_envelope_ParseResolvers(), fipa_Reply(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSend().

6.38.2.2 int fipa_agent_identifier_set_s::num

Definition at line 168 of file fipa_acl.h.

Referenced by acc_connection_Thread(), fipa_agent_identifier_Compose(), fipa_agent_identifier_set_Compose(), fipa_agent_identifier_set_Copy(), fipa_agent_identifier_set_Destroy(), fipa_envelope_Compose_to(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), fipa_envelope_ParseResolvers(), fipa_Reply(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSend().

6.38.2.3 int fipa_agent_identifier_set_s::retain_order

Definition at line 169 of file fipa_acl.h.

Referenced by fipa_agent_identifier_set_Copy(), fipa_agent_identifier_set_Parse(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), fipa_envelope_ParseResolvers(), and fipa_Reply().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_acl.h

6.39 fipa_comm_action_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- enum fipa_comm_action_type_e type
- fipa_comm_callback callback
- fipa_comm_message_check_p check_list
- fipa_comm_reply_p reply
- struct fipa_comm_action_t * next

6.39.1 Detailed Description

Definition at line 99 of file fipa_comm.h.

6.39.2 Field Documentation

6.39.2.1 fipa_comm_callback fipa_comm_action_t::callback

Definition at line 102 of file fipa_comm.h.

6.39.2.2 fipa_comm_message_check_p fipa_comm_action_t::check_list

Definition at line 103 of file fipa_comm.h.

6.39.2.3 struct fipa_comm_action_t* fipa_comm_action_t::next

Definition at line 105 of file fipa_comm.h.

6.39.2.4 fipa_comm_reply_p fipa_comm_action_t::reply

Definition at line 104 of file fipa_comm.h.

6.39.2.5 enum fipa_comm_action_type_e fipa_comm_action_t::type

Definition at line 101 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_comm.h

6.40 fipa_comm_message_check_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- `char * macro`
- `enum fipa_comm_check_type_e type`
- `struct fipa_comm_message_check_t * next`

6.40.1 Detailed Description

Definition at line 72 of file fipa_comm.h.

6.40.2 Field Documentation

6.40.2.1 `char* fipa_comm_message_check_t::macro`

Definition at line 74 of file fipa_comm.h.

6.40.2.2 `struct fipa_comm_message_check_t* fipa_comm_message_check_t::next`

Definition at line 76 of file fipa_comm.h.

6.40.2.3 `enum fipa_comm_check_type_e fipa_comm_message_check_t::type`

Definition at line 75 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/fipa_comm.h`

6.41 fipa_comm_performative_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- [fipa_comm_action_p action_list](#)
- [fipa_comm_reply_p default_reply](#)

6.41.1 Detailed Description

Definition at line 115 of file fipa_comm.h.

6.41.2 Field Documentation

6.41.2.1 fipa_comm_action_p fipa_comm_performative_t::action_list

Definition at line 117 of file fipa_comm.h.

6.41.2.2 fipa_comm_reply_p fipa_comm_performative_t::default_reply

Definition at line 118 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_comm.h](#)

6.42 fipa_comm_protocol_cn_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- `protocol_contract_net_callback contract_func`
- `fipa_comm_callback proposal_func`
- `char require_inform`
- `int time_out`
- `char * cfp_request`
- `fipa_list_p replies`
- `fipa_list_p queue`

6.42.1 Detailed Description

Definition at line 143 of file fipa_comm.h.

6.42.2 Field Documentation

6.42.2.1 `char* fipa_comm_protocol_cn_t::cfp_request`

Definition at line 149 of file fipa_comm.h.

6.42.2.2 `protocol_contract_net_callback fipa_comm_protocol_cn_t::contract_func`

Definition at line 145 of file fipa_comm.h.

6.42.2.3 `fipa_comm_callback fipa_comm_protocol_cn_t::proposal_func`

Definition at line 146 of file fipa_comm.h.

6.42.2.4 `fipa_list_p fipa_comm_protocol_cn_t::queue`

Definition at line 153 of file fipa_comm.h.

6.42.2.5 `fipa_list_p fipa_comm_protocol_cn_t::replies`

Definition at line 152 of file fipa_comm.h.

6.42.2.6 `char fipa_comm_protocol_cn_t::require_inform`

Definition at line 147 of file fipa_comm.h.

6.42.2.7 int fipa_comm_protocol_cn_t::time_out

Definition at line 148 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_comm.h](#)

6.43 fipa_comm_protocol_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- char `error`
- char `state`
- char * `conversation_id`
- char * `network`
- enum `fipa_protocol_e` `type`
- void * `info`
- struct `fipa_comm_protocol_t` * `next`

6.43.1 Detailed Description

Definition at line 163 of file fipa_comm.h.

6.43.2 Field Documentation

6.43.2.1 char* fipa_comm_protocol_t::conversation_id

Definition at line 166 of file fipa_comm.h.

6.43.2.2 char fipa_comm_protocol_t::error

Definition at line 164 of file fipa_comm.h.

6.43.2.3 void* fipa_comm_protocol_t::info

Definition at line 169 of file fipa_comm.h.

6.43.2.4 char* fipa_comm_protocol_t::network

Definition at line 167 of file fipa_comm.h.

6.43.2.5 struct fipa_comm_protocol_t* fipa_comm_protocol_t::next

Definition at line 170 of file fipa_comm.h.

6.43.2.6 char fipa_comm_protocol_t::state

Definition at line 165 of file fipa_comm.h.

6.43.2.7 enum fipa_protocol_e fipa_comm_protocol_t::type

Definition at line 168 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_comm.h

6.44 fipa_comm_reply_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- enum [fipa_performative_e](#) type
- char * [content](#)

6.44.1 Detailed Description

Definition at line 86 of file fipa_comm.h.

6.44.2 Field Documentation

6.44.2.1 char* fipa_comm_reply_t::content

Definition at line 89 of file fipa_comm.h.

6.44.2.2 enum fipa_performative_e fipa_comm_reply_t::type

Definition at line 88 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_comm.h](#)

6.45 fipa_comm_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- int `error`
- char * `agent_name`
- char * `agent_address`
- void * `agent`
- char `debug`
- fipa_comm_performative_p `performative` [MC_NUM_PERFORMATIVES]
- fipa_comm_reply_p `default_reply`
- fipa_comm_protocol_p `protocol` [FIPA_PROTOCOL_END]
- fipa_comm_callback pCallbacks [FIPA_PROTOCOL_END]

6.45.1 Detailed Description

Definition at line 179 of file fipa_comm.h.

6.45.2 Field Documentation

6.45.2.1 void* fipa_comm_t::agent

Definition at line 184 of file fipa_comm.h.

6.45.2.2 char* fipa_comm_t::agent_address

Definition at line 183 of file fipa_comm.h.

6.45.2.3 char* fipa_comm_t::agent_name

Definition at line 182 of file fipa_comm.h.

6.45.2.4 char fipa_comm_t::debug

Definition at line 185 of file fipa_comm.h.

6.45.2.5 fipa_comm_reply_p fipa_comm_t::default_reply

Definition at line 187 of file fipa_comm.h.

6.45.2.6 int fipa_comm_t::error

Definition at line 181 of file fipa_comm.h.

6.45.2.7 fipa_comm_callback fipa_comm_t::pCallbacks[FIPA_PROTOCOL_END]

Definition at line 189 of file fipa_comm.h.

6.45.2.8 fipa_comm_performative_p fipa_comm_t::performative[MC_NUM_PERFORMATIVES]

Definition at line 186 of file fipa_comm.h.

6.45.2.9 fipa_comm_protocol_p fipa_comm_t::protocol[FIPA_PROTOCOL_END]

Definition at line 188 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_comm.h](#)

6.46 fipa_DateTime_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- int `year`
- int `month`
- int `day`
- int `hour`
- int `minute`
- int `second`
- int `millisecond`
- char `sign`
- int `is_utc`

6.46.1 Detailed Description

Definition at line 234 of file fipa_acl.h.

6.46.2 Field Documentation

6.46.2.1 int fipa_DateTime_s::day

Definition at line 238 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

6.46.2.2 int fipa_DateTime_s::hour

Definition at line 239 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

6.46.2.3 int fipa_DateTime_s::is_utc

Definition at line 244 of file fipa_acl.h.

6.46.2.4 int fipa_DateTime_s::millisecond

Definition at line 242 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

6.46.2.5 int fipa_DateTime_s::minute

Definition at line 240 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

6.46.2.6 int fipa_DateTime_s::month

Definition at line 237 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

6.46.2.7 int fipa_DateTime_s::second

Definition at line 241 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

6.46.2.8 char fipa_DateTime_s::sign

Definition at line 243 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose(), and fipa_datetime_Parse().

6.46.2.9 int fipa_DateTime_s::year

Definition at line 236 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_acl.h](#)

6.47 fipa_expression_s Struct Reference

```
#include <fipa_acl.h>
```

Data Structures

- union [content_u](#)

Data Fields

- enum [fipa_expression_type_e](#) type
- union [fipa_expression_s::content_u](#) content

6.47.1 Detailed Description

Definition at line 193 of file fipa_acl.h.

6.47.2 Field Documentation

6.47.2.1 union fipa_expression_s::content_u fipa_expression_s::content

Referenced by [fipa_expression_Compose\(\)](#), [fipa_expression_Copy\(\)](#), [fipa_expression_Destroy\(\)](#), [MC_AclGetConversationID\(\)](#), and [MC_AclSetConversationID\(\)](#).

6.47.2.2 enum fipa_expression_type_e fipa_expression_s::type

Definition at line 195 of file fipa_acl.h.

Referenced by [fipa_expression_Compose\(\)](#), [fipa_expression_Copy\(\)](#), [fipa_expression_Destroy\(\)](#), [fipa_expression_Parse\(\)](#), and [MC_AclSetConversationID\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_acl.h](#)

6.48 fipa_list_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- void * [data](#)
- struct [fipa_list_t](#) * [next](#)

6.48.1 Detailed Description

Definition at line 136 of file fipa_comm.h.

6.48.2 Field Documentation

6.48.2.1 void* fipa_list_t::data

Definition at line 137 of file fipa_comm.h.

6.48.2.2 struct fipa_list_t* fipa_list_t::next

Definition at line 138 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_comm.h](#)

6.49 fipa_message_string_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [message](#)
- char * [parse](#)

6.49.1 Detailed Description

Definition at line 143 of file fipa_acl.h.

6.49.2 Field Documentation

6.49.2.1 char* fipa_message_string_s::message

Definition at line 145 of file fipa_acl.h.

Referenced by [acc_connection_Thread\(\)](#), [fipa_envelope_HandleDate\(\)](#), [fipa_envelope_HandleReceived\(\)](#), [fipa_message_string_Copy\(\)](#), and [fipa_message_string_Destroy\(\)](#).

6.49.2.2 char* fipa_message_string_s::parse

Definition at line 146 of file fipa_acl.h.

Referenced by [acc_connection_Thread\(\)](#), [fipa_agent_identifier_Parse\(\)](#), [fipa_CheckNextToken\(\)](#), [fipa_datetime_Parse\(\)](#), [fipa_envelope_HandleDate\(\)](#), [fipa_envelope_HandleReceived\(\)](#), [fipa_GetAtom\(\)](#), [fipa_GetNextWord\(\)](#), [fipa_GetWholeToken\(\)](#), [fipa_message_string_Copy\(\)](#), [fipa_string_Parse\(\)](#), and [fipa_word_Parse\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_acl.h](#)

6.50 fipa_number_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [str](#)

6.50.1 Detailed Description

Definition at line 264 of file fipa_acl.h.

6.50.2 Field Documentation

6.50.2.1 char* fipa_number_s::str

Definition at line 266 of file fipa_acl.h.

Referenced by [fipa_number_Compose\(\)](#), [fipa_number_Copy\(\)](#), and [fipa_number_Destroy\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_acl.h](#)

6.51 fipa_string_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [content](#)

6.51.1 Detailed Description

Definition at line 223 of file fipa_acl.h.

6.51.2 Field Documentation

6.51.2.1 char* fipa_string_s::content

Definition at line 225 of file fipa_acl.h.

Referenced by fipa_string_Compose(), fipa_string_Copy(), fipa_string_Destroy(), fipa_string_Parse(), MC_AclGetContent(), MC_AclGetConversationID(), MC_AclSetContent(), and MC_AclSetConversationID().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_acl.h](#)

6.52 fipa_url_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * **str**

6.52.1 Detailed Description

Definition at line 253 of file fipa_acl.h.

6.52.2 Field Documentation

6.52.2.1 char* fipa_url_s::str

Definition at line 255 of file fipa_acl.h.

Referenced by acc_connection_Thread(), fipa_envelope_Compose_from(), fipa_envelope_Compose_intended_receiver(), fipa_envelope_Compose_to(), fipa_envelope_HandleReceived(), fipa_envelope_ParseAddresses(), fipa_url_Compose(), fipa_url_Copy(), fipa_url_Destroy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), MC_AclGetSender(), MC_AclSend(), and MC_AclSetSender().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_acl.h

6.53 fipa_url_sequence_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- int num
- struct fipa_url_s ** urls

6.53.1 Detailed Description

Definition at line 154 of file fipa_acl.h.

6.53.2 Field Documentation

6.53.2.1 int fipa_url_sequence_s::num

Definition at line 156 of file fipa_acl.h.

Referenced by fipa_agent_identifier_Compose(), fipa_envelope_Compose_from(), fipa_envelope_Compose_intended_receiver(), fipa_envelope_Compose_to(), fipa_envelope_ParseAddresses(), fipa_url_sequence_Compose(), fipa_url_sequence_Copy(), fipa_url_sequence_Destroy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), MC_AclSend(), and MC_AclSetSender().

6.53.2.2 struct fipa_url_s** fipa_url_sequence_s::urls

Definition at line 157 of file fipa_acl.h.

Referenced by acc_connection_Thread(), fipa_envelope_Compose_from(), fipa_envelope_Compose_intended_receiver(), fipa_envelope_Compose_to(), fipa_envelope_ParseAddresses(), fipa_url_sequence_Compose(), fipa_url_sequence_Copy(), fipa_url_sequence_Destroy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), MC_AclGetSender(), MC_AclSend(), and MC_AclSetSender().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_acl.h

6.54 fipa_word_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [content](#)

6.54.1 Detailed Description

Definition at line 212 of file fipa_acl.h.

6.54.2 Field Documentation

6.54.2.1 char* fipa_word_s::content

Definition at line 214 of file fipa_acl.h.

Referenced by fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), fipa_protocol_type_Parse(), fipa_url_Parse(), fipa_url_sequence_Parse(), fipa_word_Compose(), fipa_word_Copy(), and fipa_word_Destroy().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[fipa_acl.h](#)

6.55 foo_c Class Reference

Public Member Functions

- `foo_c` (float `f`, int `b`)
- `~foo_c` ()
- int `get_bar` ()
- float `get_foo` ()
- void `set_bar` (int `b`)
- void `set_foo` (float `f`)
- void `set_fobar` (float `f`, int `b=0`)
- int `get_barfoo` ()

Protected Member Functions

- int `get_global` ()

Static Protected Attributes

- static int `global`

Private Attributes

- float `foo`
- int `bar`
- int `barfoo`

6.55.1 Detailed Description

Definition at line 1 of file class.cxx.

6.55.2 Constructor & Destructor Documentation

6.55.2.1 `foo_c::foo_c (float f, int b)`

6.55.2.2 `foo_c::~foo_c ()`

Definition at line 81 of file class.cxx.

6.55.3 Member Function Documentation

6.55.3.1 `int foo_c::get_bar () [inline]`

Definition at line 13 of file class.cxx.

References bar.

6.55.3.2 int foo_c::get_barfoo () [inline]

Definition at line 67 of file class.cxx.

References barfoo.

6.55.3.3 float foo_c::get_foo () [inline]

Definition at line 20 of file class.cxx.

References foo.

6.55.3.4 int foo_c::get_global () [inline, protected]

Definition at line 54 of file class.cxx.

References global.

6.55.3.5 void foo_c::set_bar (int b) [inline]

Definition at line 27 of file class.cxx.

References bar.

6.55.3.6 void foo_c::set_foo (float f) [inline]

Definition at line 34 of file class.cxx.

References foo.

6.55.3.7 void foo_c::set_foobar (float f, int b = 0) [inline]

Definition at line 41 of file class.cxx.

References bar, and foo.

6.55.4 Field Documentation

6.55.4.1 int foo_c::bar [private]

Definition at line 4 of file class.cxx.

Referenced by get_bar(), set_bar(), and set_foobar().

6.55.4.2 int foo_c::barfoo [private]

Definition at line 61 of file class.cxx.

Referenced by get_barfoo().

6.55.4.3 float foo_c::foo [private]

Definition at line 3 of file class.cxx.

Referenced by get_foo(), set_foo(), and set_foobar().

6.55.4.4 int foo_c::global [static, protected]

Definition at line 50 of file class.cxx.

Referenced by get_global().

The documentation for this class was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/test/[class.cxx](#)

6.56 foo_s Struct Reference

Public Member Functions

- `foo_s` (float `f`, int `b`)
- `~foo_s` ()
- int `get_bar` ()
- float `get_foo` ()
- void `set_bar` (int `b`)
- void `set_foo` (float `f`)

Data Fields

- float `foo`
- int `bar`

6.56.1 Detailed Description

Definition at line 1 of file struct.cxx.

6.56.2 Constructor & Destructor Documentation

6.56.2.1 `foo_s::foo_s (float f, int b)`

Definition at line 39 of file struct.cxx.

References bar, and foo.

6.56.2.2 `foo_s::~foo_s ()`

Definition at line 46 of file struct.cxx.

6.56.3 Member Function Documentation

6.56.3.1 `int foo_s::get_bar () [inline]`

Definition at line 11 of file struct.cxx.

References bar.

6.56.3.2 `float foo_s::get_foo () [inline]`

Definition at line 18 of file struct.cxx.

References foo.

6.56.3.3 void foo_s::set_bar (int b) [inline]

Definition at line 25 of file struct.cxx.

References bar.

6.56.3.4 void foo_s::set_foo (float f) [inline]

Definition at line 32 of file struct.cxx.

References foo.

6.56.4 Field Documentation**6.56.4.1 int foo_s::bar**

Definition at line 4 of file struct.cxx.

Referenced by foo_s(), get_bar(), and set_bar().

6.56.4.2 float foo_s::foo

Definition at line 3 of file struct.cxx.

Referenced by foo_s(), get_foo(), and set_foo().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/test/[struct.cxx](#)

6.57 havege_state Struct Reference

HAVEGE state structure.

```
#include <havege.h>
```

Data Fields

- int PT1
- int PT2
- int offset [2]
- int pool [COLLECT_SIZE]
- int WALK [8192]

6.57.1 Detailed Description

HAVEGE state structure.

Definition at line 12 of file havege.h.

6.57.2 Field Documentation

6.57.2.1 int havege_state::offset[2]

Definition at line 14 of file havege.h.

Referenced by havege_fill(), and havege_rand().

6.57.2.2 int havege_state::pool[COLLECT_SIZE]

Definition at line 15 of file havege.h.

Referenced by havege_rand().

6.57.2.3 int havege_state::PT1

Definition at line 14 of file havege.h.

Referenced by havege_fill().

6.57.2.4 int havege_state::PT2

Definition at line 14 of file havege.h.

Referenced by havege_fill().

6.57.2.5 int havege_state::WALK[8192]

Definition at line 16 of file havege.h.

Referenced by havege_fill().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[havege.h](#)

6.58 host_id_s Struct Reference

```
#include <host_id.h>
```

Data Fields

- char * [hostname](#)
- int [port](#)

6.58.1 Detailed Description

Definition at line 38 of file host_id.h.

6.58.2 Field Documentation

6.58.2.1 char* host_id_s::hostname

Definition at line 40 of file host_id.h.

6.58.2.2 int host_id_s::port

Definition at line 41 of file host_id.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[host_id.h](#)

6.59 hr_time Struct Reference

timer structure

```
#include <timing.h>
```

Data Fields

- unsigned char [opaque](#) [32]

6.59.1 Detailed Description

timer structure

Definition at line 10 of file timing.h.

6.59.2 Field Documentation

6.59.2.1 unsigned char hr_time::opaque[32]

Definition at line 12 of file timing.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[timing.h](#)

6.60 interpreter_variable_data_s Struct Reference

```
#include <interpreter_variable_data.h>
```

Data Fields

- `char * name`
- `int size`
- `ChType_t data_type`
- `int array_dim`
- `int * array_extent`
- `void * data`

6.60.1 Detailed Description

Definition at line 41 of file interpreter_variable_data.h.

6.60.2 Field Documentation

6.60.2.1 int interpreter_variable_data_s::array_dim

Definition at line 45 of file interpreter_variable_data.h.

Referenced by `agent_AddPersistentVariable()`, `agent_xml_compose__data()`, `agent_xml_compose__row()`, `agent_xml_parse__data()`, `agent_xml_parse__row()`, `interpreter_variable_data_Copy()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `interpreter_variable_data_New()`, `MC_AgentReturnArrayDim()`, `MC_AgentReturnArrayExtent()`, `MC_AgentReturnArrayNum()`, `MC_AgentReturnIsArray()`, `MC_AgentVariableRetrieveInfo()`, and `MC_GetAgentReturnData()`.

6.60.2.2 int* interpreter_variable_data_s::array_extent

Definition at line 46 of file interpreter_variable_data.h.

Referenced by `agent_AddPersistentVariable()`, `agent_xml_compose__row()`, `agent_xml_parse__row()`, `interpreter_variable_data_Copy()`, `interpreter_variable_data_Destroy()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `interpreter_variable_data_New()`, `MC_AgentReturnArrayExtent()`, `MC_AgentVariableRetrieveInfo()`, and `MC_GetAgentReturnData()`.

6.60.2.3 void* interpreter_variable_data_s::data

Definition at line 47 of file interpreter_variable_data.h.

Referenced by `agent_AddPersistentVariable()`, `agent_xml_compose__data()`, `agent_xml_compose__row()`, `agent_xml_parse__data()`, `agent_xml_parse__row()`, `interpreter_variable_data_Copy()`, `interpreter_variable_data_Destroy()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `interpreter_variable_data_New()`, `MC_AgentReturnDataGetSymbolAddr()`, `MC_AgentVariableRetrieve()`, `MC_AgentVariableRetrieveInfo()`, and `MC_SaveData_chdl()`.

6.60.2.4 ChType_t interpreter_variable_data_s::data_type

Definition at line 44 of file interpreter_variable_data.h.

Referenced by agent_AddPersistentVariable(), agent_xml_compose__data(), agent_xml_compose__row(), agent_xml_parse__data(), agent_xml_parse__row(), interpreter_variable_data_Copy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_GetAgentReturnData(), and MC_SaveData_chdl().

6.60.2.5 char* interpreter_variable_data_s::name

Definition at line 42 of file interpreter_variable_data.h.

Referenced by agent_AddPersistentVariable(), agent_xml_compose__data(), agent_xml_parse__data(), interpreter_variable_data_CmpName(), interpreter_variable_data_Copy(), interpreter_variable_data_Destroy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), and MC_SaveData_chdl().

6.60.2.6 int interpreter_variable_data_s::size

Definition at line 43 of file interpreter_variable_data.h.

Referenced by agent_AddPersistentVariable(), interpreter_variable_data_Copy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), and MC_SaveData_chdl().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[interpreter_variable_data.h](#)

6.61 list_s Struct Reference

```
#include <list.h>
```

Data Fields

- `listNode_p listhead`
- `int size`
- `rwlock_t * rwlock`

6.61.1 Detailed Description

Definition at line 49 of file list.h.

6.61.2 Field Documentation

6.61.2.1 `listNode_p list_s::listhead`

Definition at line 51 of file list.h.

Referenced by `ListAdd()`, `ListAppend()`, `ListCopy()`, `ListDelete()`, `ListDeleteCB()`, `ListForEachCB()`, `ListGetHead()`, `ListInitialize()`, `ListPop()`, `ListSearch()`, `ListSearchCB()`, and `ListTerminate()`.

6.61.2.2 `rwlock_t* list_s::rwlock`

Definition at line 54 of file list.h.

Referenced by `ListInitialize()`, `ListRDLock()`, `ListRDtoWR()`, `ListRDUnlock()`, `ListRDWait()`, `ListTerminate()`, `ListWait()`, `ListWRLock()`, `ListWRtoRD()`, `ListWRUnlock()`, and `ListWRWait()`.

6.61.2.3 `int list_s::size`

Definition at line 52 of file list.h.

Referenced by `agent_task_Copy()`, `ams_ManageAgentList()`, `ams_Print()`, `ListAdd()`, `ListAppend()`, `ListDelete()`, `ListDeleteCB()`, `ListGetSize()`, `ListInitialize()`, `ListPop()`, `ListSearch()`, `ListSearchCB()`, `ListTerminate()`, and `MC_RetrieveAgent()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/mc_list/list.h`

6.62 listNode_s Struct Reference

```
#include <list.h>
```

Data Fields

- void * `node_data`
- struct `listNode_s` * `next`

6.62.1 Detailed Description

Definition at line 40 of file list.h.

6.62.2 Field Documentation

6.62.2.1 struct listNode_s* listNode_s::next

Definition at line 43 of file list.h.

Referenced by `df_SearchForService()`, `ListAdd()`, `ListAppend()`, `ListCopy()`, `ListDelete()`, `ListDeleteCB()`, `ListForEachCB()`, `ListPop()`, `ListSearch()`, `ListSearchCB()`, and `request_handler_DEREGISTER()`.

6.62.2.2 void* listNode_s::node_data

Definition at line 42 of file list.h.

Referenced by `df_SearchForService()`, `ListAdd()`, `ListAppend()`, `ListCopy()`, `ListDelete()`, `ListDeleteCB()`, `ListForEachCB()`, `ListGetHead()`, `ListPop()`, `ListSearch()`, `ListSearchCB()`, and `request_handler_DEREGISTER()`.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mc_list/[list.h](#)

6.63 mc_platform_s Struct Reference

```
#include <mc_platform.h>
```

Data Fields

- int `err`
- char * `hostname`
- unsigned short `port`
- int `initInterps`
- `list_t * asm_message_queue`
- `list_t * message_queue`
- `list_t * agent_queue`
- `list_t * connection_queue`
- int `agent_processing`
- df_p `df`
- ams_p `ams`
- acc_p `acc`
- cmd_prompt_p `cmd_prompt`
- `list_t * syncList`
- `list_t * barrier_queue`
- listen_thread_arg_p `listen_thread_arg`
- listen_thread_arg_p `client_thread_arg`
- int `default_agentstatus`
- int `stack_size` [MC_THREAD_ALL]
- ChOptions_t * `interp_options`
- COND_T * `MC_signal_cond`
- COND_T * `MC_sync_cond`
- MUTEX_T * `MC_signal_lock`
- MUTEX_T * `MC_sync_lock`
- enum MC_Signal_e `MC_signal`
- enum MC_SteerCommand_e `MC_steer_command`
- MUTEX_T * `MC_steer_lock`
- COND_T * `MC_steer_cond`
- int `giant`
- MUTEX_T * `giant_lock`
- COND_T * `giant_cond`
- int `quit`
- MUTEX_T * `quit_lock`
- COND_T * `quit_cond`
- int `sockfd`
- char `private_key` [1210]
- MCAgency_t `agency`
- `list_t * interpreter_queue`
- int `bluetooth`

6.63.1 Detailed Description

Definition at line 49 of file mc_platform.h.

6.63.2 Field Documentation

6.63.2.1 acc_p mc_platform_s::acc

Definition at line 74 of file mc_platform.h.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), acc_Start(), acc_Thread(), listen_Thread(), MC_End(), mc_platform_Destroy(), mc_platform_Initialize(), and message_Send().

6.63.2.2 MCAgency_t mc_platform_s::agency

Definition at line 116 of file mc_platform.h.

Referenced by agent_RunChScriptThread(), handler_COMPOSE_SEND(), listen_Thread(), mc_platform_Initialize(), and message_send_Thread().

6.63.2.3 int mc_platform_s::agent_processing

Definition at line 69 of file mc_platform.h.

Referenced by MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentProcessingBegin(), MC_AgentProcessingEnd(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), mc_platform_Initialize(), MC_RetrieveAgent(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), MC_WaitAgent(), and MC_WaitRetrieveAgent().

6.63.2.4 list_t* mc_platform_s::agent_queue

Definition at line 67 of file mc_platform.h.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), handler_FLUSH_AGENTS(), handler_PRINTLIST_AGENTS(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentProcessingBegin(), MC_AgentProcessingEnd(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), mc_platform_Destroy(), mc_platform_GetQueue(), mc_platform_Initialize(), MC_RetrieveAgent(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), MC_WaitAgent(), and MC_WaitRetrieveAgent().

6.63.2.5 ams_p mc_platform_s::ams

Definition at line 73 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), agent_RunChScriptThread(), ams_Start(), ams_Thread(), MC_AddAgent(), MC_End(), mc_platform_Destroy(), mc_platform_Initialize(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), and MC_SetAgentStatus().

6.63.2.6 list_t* mc_platform_s::asm_message_queue

Definition at line 62 of file mc_platform.h.

6.63.2.7 list_t* mc_platform_s::barrier_queue

Definition at line 81 of file mc_platform.h.

Referenced by MC_BARRIER(), MC_BARRIERDELETE(), MC_BARRIERINIT(), mc_platform_Destroy(), mc_platform_GetQueue(), and mc_platform_Initialize().

6.63.2.8 int mc_platform_s::bluetooth

Definition at line 122 of file mc_platform.h.

Referenced by listen_Thread(), mc_platform_Initialize(), message_InitializeFromAgent(), and message_send_Thread().

6.63.2.9 listen_thread_arg_p mc_platform_s::client_thread_arg

Definition at line 84 of file mc_platform.h.

6.63.2.10 cmd_prompt_p mc_platform_s::cmd_prompt

Definition at line 75 of file mc_platform.h.

Referenced by cmd_prompt_Start(), MC_End(), mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.11 list_t* mc_platform_s::connection_queue

Definition at line 68 of file mc_platform.h.

Referenced by acc_Thread(), handler_PRINT_CONNECTLIST(), listen_Thread(), MC_End(), mc_platform_Destroy(), mc_platform_GetQueue(), and mc_platform_Initialize().

6.63.2.12 int mc_platform_s::default_agentstatus

Definition at line 86 of file mc_platform.h.

Referenced by agent_Initialize(), mc_platform_Initialize(), and MC_SetDefaultAgentStatus().

6.63.2.13 df_p mc_platform_s::df

Definition at line 72 of file mc_platform.h.

Referenced by df_ProcessRequest(), df_Start(), df_Thread(), MC_DeregisterService(), MC_End(), mc_platform_Destroy(), mc_platform_Initialize(), MC_RegisterService(), MC_SearchForService(), request_handler_DEREGISTER(), request_handler_REGISTER(), and request_handler_SEARCH().

6.63.2.14 int mc_platform_s::err

Definition at line 52 of file mc_platform.h.

Referenced by agent_Initialize(), mc_platform_Initialize(), message_InitializeFromAgent(), and message_InitializeFromString().

6.63.2.15 int mc_platform_s::giant

Definition at line 106 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), MC_HaltAgency(), mc_platform_Initialize(), MC_ResetSignal(), MC_ResumeAgency(), and MC_WaitSignal().

6.63.2.16 COND_T* mc_platform_s::giant_cond

Definition at line 108 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), mc_platform_Destroy(), mc_platform_Initialize(), and MC_ResetSignal().

6.63.2.17 MUTEX_T* mc_platform_s::giant_lock

Definition at line 107 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), MC_HaltAgency(), mc_platform_Destroy(), mc_platform_Initialize(), MC_ResetSignal(), MC_ResumeAgency(), and MC_WaitSignal().

6.63.2.18 char* mc_platform_s::hostname

Definition at line 57 of file mc_platform.h.

Referenced by agent_Initialize(), agent_NewBinary(), fipa_envelope_Compose_from(), handler_COMPOSE_SEND(), mc_platform_Destroy(), mc_platform_Initialize(), message_InitializeFromAgent(), message_InitializeFromString(), message_queue_SendOutgoing(), and udplisten_Thread().

6.63.2.19 int mc_platform_s::initInterps

Definition at line 59 of file mc_platform.h.

Referenced by mc_platform_Initialize().

6.63.2.20 ChOptions_t* mc_platform_s::interp_options

Definition at line 90 of file mc_platform.h.

Referenced by agent_RunChScriptThread(), mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.21 list_t* mc_platform_s::interpreter_queue

Definition at line 119 of file mc_platform.h.

Referenced by agent_Destroy(), agent_RunChScriptThread(), mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.22 listen_thread_arg_p mc_platform_s::listen_thread_arg

Definition at line 83 of file mc_platform.h.

6.63.2.23 enum MC_Signal_e mc_platform_s::MC_signal

Definition at line 97 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), mc_platform_Initialize(), MC_ResetSignal(), and MC_WaitSignal().

6.63.2.24 COND_T* mc_platform_s::MC_signal_cond

Definition at line 93 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), mc_platform_Destroy(), mc_platform_Initialize(), and MC_WaitSignal().

6.63.2.25 MUTEX_T* mc_platform_s::MC_signal_lock

Definition at line 95 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), mc_platform_Destroy(), mc_platform_Initialize(), and MC_WaitSignal().

6.63.2.26 enum MC_SteerCommand_e mc_platform_s::MC_steer_command

Definition at line 100 of file mc_platform.h.

Referenced by MC_SendSteerCommand(), MC_Steer(), and MC_SteerControl().

6.63.2.27 COND_T* mc_platform_s::MC_steer_cond

Definition at line 102 of file mc_platform.h.

Referenced by mc_platform_Destroy(), mc_platform_Initialize(), MC_SendSteerCommand(), and MC_SteerControl().

6.63.2.28 MUTEX_T* mc_platform_s::MC_steer_lock

Definition at line 101 of file mc_platform.h.

Referenced by mc_platform_Destroy(), mc_platform_Initialize(), MC_SendSteerCommand(), MC_Steer(), and MC_SteerControl().

6.63.2.29 COND_T* mc_platform_s::MC_sync_cond

Definition at line 94 of file mc_platform.h.

Referenced by mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.30 MUTEX_T* mc_platform_s::MC_sync_lock

Definition at line 96 of file mc_platform.h.

Referenced by mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.31 list_t* mc_platform_s::message_queue

Definition at line 66 of file mc_platform.h.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), handler_PRINTLIST_MESSAGE(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_GetQueue(), mc_platform_Initialize(), and MC_SendAgentMigrationMessage().

6.63.2.32 unsigned short mc_platform_s::port

Definition at line 58 of file mc_platform.h.

Referenced by acc_connection_Thread(), agent_Initialize(), agent_NewBinary(), fipa_envelope_Compose_from(), listen_Thread(), mc_platform_Initialize(), message_InitializeFromAgent(), message_InitializeFromString(), message_queue_SendOutgoing(), and udplisten_Thread().

6.63.2.33 char mc_platform_s::private_key[1210]

Definition at line 114 of file mc_platform.h.

Referenced by acc_connection_Thread(), listen_Thread(), and MC_AclSend().

6.63.2.34 int mc_platform_s::quit

Definition at line 110 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), ams_ManageAgentList(), ams_Thread(), df_Thread(), handler_QUIT(), listen_Thread(), MC_End(), MC_MainLoop(), and mc_platform_Initialize().

6.63.2.35 COND_T* mc_platform_s::quit_cond

Definition at line 112 of file mc_platform.h.

Referenced by handler_QUIT(), MC_End(), MC_MainLoop(), mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.36 MUTEX_T* mc_platform_s::quit_lock

Definition at line 111 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), ams_ManageAgentList(), ams_Thread(), df_Thread(), handler_QUIT(), MC_End(), MC_MainLoop(), mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.37 int mc_platform_s::sockfd

Definition at line 113 of file mc_platform.h.

Referenced by listen_Thread(), and mc_platform_Destroy().

6.63.2.38 int mc_platform_s::stack_size[MC_THREAD_ALL]

Definition at line 88 of file mc_platform.h.

Referenced by acc_Start(), agent_RunChScript(), ams_Start(), cmd_prompt_Start(), df_Start(), and mc_platform_Initialize().

6.63.2.39 list_t* mc_platform_s::syncList

Definition at line 80 of file mc_platform.h.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_MutexLock(), MC_MutexUnlock(), mc_platform_Destroy(), mc_platform_GetQueue(), mc_platform_Initialize(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncDelete(), and MC_SyncInit().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[mc_platform.h](#)

6.64 mc_rwlock_s Struct Reference

```
#include <mc_rwlock.h>
```

Data Fields

- int num_readers
- int write_flag
- int write_request
- MUTEX_T * lock
- COND_T * cond

6.64.1 Detailed Description

Definition at line 39 of file mc_rwlock.h.

6.64.2 Field Documentation

6.64.2.1 COND_T* mc_rwlock_s::cond

Definition at line 44 of file mc_rwlock.h.

Referenced by mc_rwlock_destroy(), mc_rwlock_init(), mc_rwlock_rdlock(), mc_rwlock_runlock(), mc_rwlock_wrlock(), and mc_rwlock_wrunlock().

6.64.2.2 MUTEX_T* mc_rwlock_s::lock

Definition at line 43 of file mc_rwlock.h.

Referenced by mc_rwlock_destroy(), mc_rwlock_init(), mc_rwlock_rdlock(), mc_rwlock_runlock(), mc_rwlock_wrlock(), and mc_rwlock_wrunlock().

6.64.2.3 int mc_rwlock_s::num_readers

Definition at line 40 of file mc_rwlock.h.

Referenced by mc_rwlock_init(), mc_rwlock_rdlock(), mc_rwlock_runlock(), and mc_rwlock_wrlock().

6.64.2.4 int mc_rwlock_s::write_flag

Definition at line 41 of file mc_rwlock.h.

Referenced by mc_rwlock_init(), mc_rwlock_rdlock(), mc_rwlock_wrlock(), and mc_rwlock_wrunlock().

6.64.2.5 int mc_rwlock_s::write_request

Definition at line 42 of file mc_rwlock.h.

Referenced by mc_rwlock_init(), mc_rwlock_rdlock(), and mc_rwlock_wrlock().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[mc_rwlock.h](#)

6.65 MCAgencyOptions_s Struct Reference

User modifiable agency options.

```
#include <libmc.h>
```

Data Fields

- int `threads`
- int `default_agent_status`
- int `modified`
- int `enable_security`
- unsigned char `passphrase` [32]
- int `stack_size` [MC_THREAD_ALL]
- char * `known_host_filename`
- char * `priv_key_filename`
- int `initInterps`
- int `bluetooth`
- ChOptions_t * `ch_options`
- unsigned long long `initialized`

6.65.1 Detailed Description

User modifiable agency options.

Definition at line 264 of file libmc.h.

6.65.2 Field Documentation

6.65.2.1 int MCAgencyOptions_s::bluetooth

Definition at line 277 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.2 ChOptions_t* MCAgencyOptions_s::ch_options

Definition at line 278 of file libmc.h.

Referenced by MC_Initialize().

6.65.2.3 int MCAgencyOptions_s::default_agent_status

Default agent status

Definition at line 266 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.4 int MCAgencyOptions_s::enable_security

security enable flag

Definition at line 268 of file libmc.h.

6.65.2.5 unsigned long long MCAgencyOptions_s::initialized

Definition at line 280 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.6 int MCAgencyOptions_s::initInterps

Definition at line 276 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.7 char* MCAgencyOptions_s::known_host_filename

Definition at line 274 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.8 int MCAgencyOptions_s::modified

unused

Definition at line 267 of file libmc.h.

Referenced by MC_InitializeAgencyOptions().

6.65.2.9 unsigned char MCAgencyOptions_s::passphrase[32]

security enable flag

Definition at line 269 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.10 char* MCAgencyOptions_s::priv_key_filename

Definition at line 275 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.11 int MCAgencyOptions_s::stack_size[MC_THREAD_ALL]

If the stack size is -1, use system def.

Definition at line 272 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.12 int MCAgencyOptions_s::threads

Threads to start

Definition at line 265 of file libmc.h.

Referenced by MC_Initialize(), MC_InitializeAgencyOptions(), MC_SetThreadOff(), MC_SetThreadOn(), MC_SetThreadsAllOff(), and MC_SetThreadsAllOn().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[libmc.h](#)

6.66 md2_context Struct Reference

MD2 context structure.

```
#include <md2.h>
```

Data Fields

- unsigned char `cksum` [16]
- unsigned char `state` [48]
- unsigned char `buffer` [16]
- unsigned char `ipad` [64]
- unsigned char `opad` [64]
- int `left`

6.66.1 Detailed Description

MD2 context structure.

Definition at line 10 of file md2.h.

6.66.2 Field Documentation

6.66.2.1 unsigned char md2_context::buffer[16]

data block being processed

Definition at line 14 of file md2.h.

6.66.2.2 unsigned char md2_context::cksum[16]

checksum of the data block

Definition at line 12 of file md2.h.

6.66.2.3 unsigned char md2_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md2.h.

6.66.2.4 int md2_context::left

amount of data in buffer

Definition at line 18 of file md2.h.

6.66.2.5 unsigned char md2_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md2.h.

6.66.2.6 unsigned char md2_context::state[48]

intermediate digest state

Definition at line 13 of file md2.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[md2.h](#)

6.67 md4_context Struct Reference

MD4 context structure.

```
#include <md4.h>
```

Data Fields

- unsigned long **total** [2]
- unsigned long **state** [4]
- unsigned char **buffer** [64]
- unsigned char **ipad** [64]
- unsigned char **opad** [64]

6.67.1 Detailed Description

MD4 context structure.

Definition at line 10 of file md4.h.

6.67.2 Field Documentation

6.67.2.1 unsigned char md4_context::buffer[64]

data block being processed

Definition at line 14 of file md4.h.

6.67.2.2 unsigned char md4_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md4.h.

6.67.2.3 unsigned char md4_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md4.h.

6.67.2.4 unsigned long md4_context::state[4]

intermediate digest state

Definition at line 13 of file md4.h.

6.67.2.5 unsigned long md4_context::total[2]

number of bytes processed

Definition at line 12 of file md4.h.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[md4.h](#)

6.68 md5_context Struct Reference

MD5 context structure.

```
#include <md5.h>
```

Data Fields

- unsigned long **total** [2]
- unsigned long **state** [4]
- unsigned char **buffer** [64]
- unsigned char **ipad** [64]
- unsigned char **opad** [64]

6.68.1 Detailed Description

MD5 context structure.

Definition at line 10 of file md5.h.

6.68.2 Field Documentation

6.68.2.1 unsigned char md5_context::buffer[64]

data block being processed

Definition at line 14 of file md5.h.

Referenced by md5_update().

6.68.2.2 unsigned char md5_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md5.h.

Referenced by md5_hmac_starts().

6.68.2.3 unsigned char md5_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md5.h.

Referenced by md5_hmac_finish(), and md5_hmac_starts().

6.68.2.4 unsigned long md5_context::state[4]

intermediate digest state

Definition at line 13 of file md5.h.

Referenced by md5_finish(), md5_process(), md5_starts(), and ssl_calc_finished().

6.68.2.5 **unsigned long md5_context::total[2]**

number of bytes processed

Definition at line 12 of file md5.h.

Referenced by md5_finish(), md5_starts(), and md5_update().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[md5.h](#)

6.69 message_s Struct Reference

```
#include <message.h>
```

Data Fields

- struct sockaddr_in * [addr](#)
- int [connect_id](#)
- int [message_id](#)
- int [isHTTP](#)
- enum [message_type_e](#) [message_type](#)
- enum [http_performative_e](#) [http_type](#)
- [mxml_node_t](#) * [xml_root](#)
- [mxml_node_t](#) * [xml_payload](#)
- char * [message_body](#)
- char * [update_name](#)
- int [update_num](#)
- char * [from_address](#)
- char * [to_address](#)
- char * [target](#)
- int [agent_xml_flag](#)
- char * [sending_agent_name](#)

6.69.1 Detailed Description

Definition at line 78 of file message.h.

6.69.2 Field Documentation

6.69.2.1 struct sockaddr_in* message_s::addr

Definition at line 80 of file message.h.

Referenced by [message_Destroy\(\)](#), [message_InitializeFromAgent\(\)](#), [message_InitializeFromConnection\(\)](#), [message_InitializeFromString\(\)](#), [message_New\(\)](#), and [message_xml_parse_message\(\)](#).

6.69.2.2 int message_s::agent_xml_flag

Definition at line 112 of file message.h.

Referenced by [agent_Initialize\(\)](#), [message_Destroy\(\)](#), [message_InitializeFromAgent\(\)](#), and [message_New\(\)](#).

6.69.2.3 int message_s::connect_id

Definition at line 83 of file message.h.

Referenced by [message_InitializeFromConnection\(\)](#), [message_InitializeFromString\(\)](#), [message_New\(\)](#), and [message_Print\(\)](#).

6.69.2.4 char* message_s::from_address

Definition at line 102 of file message.h.

Referenced by message_Destroy(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), and message_xml_parse_message().

6.69.2.5 enum http_performative_e message_s::http_type

Definition at line 91 of file message.h.

Referenced by message_New().

6.69.2.6 int message_s::isHTTP

Definition at line 87 of file message.h.

Referenced by message_New(), mtp_http_ComposeMessage(), and mtp_http_CreateMessage().

6.69.2.7 char* message_s::message_body

Definition at line 97 of file message.h.

Referenced by acc_connection_Thread(), message_Destroy(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), message_send_Thread(), mtp_http_ComposeMessage(), and mtp_http_CreateMessage().

6.69.2.8 int message_s::message_id

Definition at line 84 of file message.h.

Referenced by message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), and message_Print().

6.69.2.9 enum message_type_e message_s::message_type

Definition at line 90 of file message.h.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), agent_Initialize(), MC_AclSend(), message_InitializeFromAgent(), message_InitializeFromString(), message_New(), and message_xml_parse_message().

6.69.2.10 char* message_s::sending_agent_name

Definition at line 113 of file message.h.

Referenced by message_Destroy(), message_InitializeFromAgent(), and message_New().

6.69.2.11 char* message_s::target

Definition at line 105 of file message.h.

Referenced by MC_AclSend(), message_Destroy(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), and mtp_http_ComposeMessage().

6.69.2.12 char* message_s::to_address

Definition at line 103 of file message.h.

Referenced by acc_MessageHandlerThread(), MC_LoadAgentFromFile(), message_Destroy(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), message_queue_SendOutgoing(), message_send_Thread(), mtp_http_ComposeMessage(), and mtp_http_CreateMessage().

6.69.2.13 char* message_s::update_name

Definition at line 99 of file message.h.

Referenced by message_Destroy(), message_InitializeFromAgent(), message_InitializeFromString(), and message_New().

6.69.2.14 int message_s::update_num

Definition at line 100 of file message.h.

Referenced by message_New().

6.69.2.15 mxml_node_t* message_s::xml_payload

Definition at line 94 of file message.h.

Referenced by agent_Initialize(), MC_LoadAgentFromFile(), message_New(), and message_xml_parse_message().

6.69.2.16 mxml_node_t* message_s::xml_root

Definition at line 93 of file message.h.

Referenced by acc_connection_Thread(), agent_Initialize(), MC_LoadAgentFromFile(), message_Destroy(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), and message_xml_parse().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[message.h](#)

6.70 message_send_arg_s Struct Reference

```
#include <message.h>
```

Data Fields

- struct [mc_platform_s](#) * mc_platform
- [message_p](#) message
- char * [privatekey](#)

6.70.1 Detailed Description

Definition at line 117 of file message.h.

6.70.2 Field Documentation

6.70.2.1 struct mc_platform_s* message_send_arg_s::mc_platform

Definition at line 119 of file message.h.

Referenced by [message_Send\(\)](#).

6.70.2.2 message_p message_send_arg_s::message

Definition at line 120 of file message.h.

Referenced by [message_Send\(\)](#).

6.70.2.3 char* message_send_arg_s::privatekey

Definition at line 121 of file message.h.

Referenced by [message_Send\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[message.h](#)

6.71 mpi Struct Reference

MPI structure.

```
#include <bignum.h>
```

Data Fields

- int s
- int n
- t_int * p

6.71.1 Detailed Description

MPI structure.

Definition at line 48 of file bignum.h.

6.71.2 Field Documentation

6.71.2.1 int mpi::n

total # of limbs

Definition at line 51 of file bignum.h.

Referenced by debug_print_mpi(), mpi_add_abs(), mpi_add_int(), mpi_cmp_abs(), mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_div_int(), mpi_div_mpi(), mpi_exp_mod(), mpi_free(), mpi_grow(), mpi_init(), mpi_is_prime(), mpi_lsb(), mpi_lset(), mpi_mod_int(), mpi_montmul(), mpi_montred(), mpi_msb(), mpi_mul_int(), mpi_mul_mpi(), mpi_shift_l(), mpi_shift_r(), mpi_sub_abs(), mpi_sub_int(), mpi_write_string(), and x509parse_cert_info().

6.71.2.2 t_int* mpi::p

pointer to limbs

Definition at line 52 of file bignum.h.

Referenced by debug_print_mpi(), dhm_make_params(), dhm_make_public(), mpi_add_abs(), mpi_add_int(), mpi_cmp_abs(), mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_div_int(), mpi_div_mpi(), mpi_exp_mod(), mpi_free(), mpi_gcd(), mpi_gen_prime(), mpi_grow(), mpi_init(), mpi_inv_mod(), mpi_is_prime(), mpi_lsb(), mpi_lset(), mpi_mod_int(), mpi_montg_init(), mpi_montmul(), mpi_montred(), mpi_msb(), mpi_mul_int(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), mpi_shift_l(), mpi_shift_r(), mpi_sub_abs(), mpi_sub_int(), mpi_write_binary(), mpi_write_string(), and rsa_check_pubkey().

6.71.2.3 int mpi::s

integer sign

Definition at line 50 of file bignum.h.

Referenced by mpi_add_int(), mpi_add_mpi(), mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_div_int(), mpi_div_mpi(), mpi_free(), mpi_gcd(), mpi_init(), mpi_is_prime(), mpi_lset(), mpi_montred(),

mpi_mul_int(), mpi_mul_mpi(), mpi_read_string(), mpi_sub_int(), mpi_sub_mpi(), and mpi_write_string().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[bignum.h](#)

6.72 mtp_http_content_s Struct Reference

```
#include <mtp_http.h>
```

Data Fields

- char * [content_type](#)
- void * [data](#)

6.72.1 Detailed Description

Definition at line 106 of file mtp_http.h.

6.72.2 Field Documentation

6.72.2.1 char* mtp_http_content_s::content_type

Definition at line 108 of file mtp_http.h.

Referenced by MC_AclSend(), mtp_http_CreateMessage(), mtp_http_Destroy(), and mtp_http_Parse().

6.72.2.2 void* mtp_http_content_s::data

Definition at line 109 of file mtp_http.h.

Referenced by acc_connection_Thread(), MC_AclSend(), mtp_http_CreateMessage(), mtp_http_Destroy(), and mtp_http_Parse().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[mtp_http.h](#)

6.73 mtp_http_s Struct Reference

```
#include <mtp_http.h>
```

Data Fields

- enum http_status_code_e http_status_code
- enum http_performative_e http_performative
- char * http_version
- char * host
- char * return_code
- char * target
- char * date
- char * server
- char * accept_ranges
- char * content_length
- char * connection
- char * content_type
- char * user_agent
- char * cache_control
- char * mime_version
- int response_code
- char * response_string
- int message_parts
- char * boundary
- struct mtp_http_content_s * content
- int header_length

6.73.1 Detailed Description

Definition at line 112 of file mtp_http.h.

6.73.2 Field Documentation

6.73.2.1 char* mtp_http_s::accept_ranges

Definition at line 123 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.2 char* mtp_http_s::boundary

Definition at line 139 of file mtp_http.h.

Referenced by mtp_http_Destroy(), and mtp_http_Parse().

6.73.2.3 char* mtp_http_s::cache_control

Definition at line 129 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.4 char* mtp_http_s::connection

Definition at line 125 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.5 struct mtp_http_content_s* mtp_http_s::content

Definition at line 140 of file mtp_http.h.

Referenced by acc_connection_Thread(), MC_AclSend(), mtp_http_CreateMessage(), mtp_http_Destroy(), mtp_http_New(), and mtp_http_Parse().

6.73.2.6 char* mtp_http_s::content_length

Definition at line 124 of file mtp_http.h.

Referenced by mtp_http_Destroy(), mtp_http_InitializeFromConnection(), and mtp_http_Parse().

6.73.2.7 char* mtp_http_s::content_type

Definition at line 126 of file mtp_http.h.

Referenced by mtp_http_Destroy(), and mtp_http_Parse().

6.73.2.8 char* mtp_http_s::date

Definition at line 121 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.9 int mtp_http_s::header_length

Definition at line 143 of file mtp_http.h.

Referenced by mtp_http_InitializeFromConnection(), and mtp_http_ParseHeader().

6.73.2.10 char* mtp_http_s::host

Definition at line 117 of file mtp_http.h.

Referenced by MC_AclSend(), mtp_http_CreateMessage(), and mtp_http_Destroy().

6.73.2.11 enum http_performative_e mtp_http_s::http_performative

Definition at line 115 of file mtp_http.h.

Referenced by acc_connection_Thread(), http_ParseRequest(), mtp_http_InitializeFromConnection(), and mtp_http_Parse().

6.73.2.12 enum http_status_code_e mtp_http_s::http_status_code

Definition at line 114 of file mtp_http.h.

6.73.2.13 char* mtp_http_s::http_version

Definition at line 116 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.14 int mtp_http_s::message_parts

Definition at line 138 of file mtp_http.h.

Referenced by acc_connection_Thread(), MC_AclSend(), mtp_http_CreateMessage(), mtp_http_Destroy(), and mtp_http_Parse().

6.73.2.15 char* mtp_http_s::mime_version

Definition at line 130 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.16 int mtp_http_s::response_code

Definition at line 133 of file mtp_http.h.

Referenced by http_ParseRequest().

6.73.2.17 char* mtp_http_s::response_string

Definition at line 134 of file mtp_http.h.

Referenced by http_ParseRequest(), and mtp_http_Destroy().

6.73.2.18 char* mtp_http_s::return_code

Definition at line 118 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.19 char* mtp_http_s::server

Definition at line 122 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.20 char* mtp_http_s::target

Definition at line 119 of file mtp_http.h.

Referenced by acc_connection_Thread(), http_ParseRequest(), MC_AclSend(), mtp_http_-CreateMessage(), and mtp_http_Destroy().

6.73.2.21 **char* mtp_http_s::user_agent**

Definition at line 127 of file mtp_http.h.

Referenced by mtp_http_Destroy().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/mtp_http.h

6.74 mxml_attr_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- char * **name**
- char * **value**

6.74.1 Detailed Description

Definition at line 86 of file mxml.h.

6.74.2 Field Documentation

6.74.2.1 char* mxml_attr_s::name

Definition at line 88 of file mxml.h.

Referenced by `mxml_write_node()`, `mxmlDelete()`, `mxmlElementGetAttr()`, and `mxmlElementSetAttr()`.

6.74.2.2 char* mxml_attr_s::value

Definition at line 89 of file mxml.h.

Referenced by `mxml_write_node()`, `mxmlDelete()`, `mxmlElementGetAttr()`, and `mxmlElementSetAttr()`.

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/[mxml.h](#)

6.75 mxml_custom_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- void * [data](#)
- void(* [destroy](#))(void *)

6.75.1 Detailed Description

Definition at line 105 of file mxml.h.

6.75.2 Field Documentation

6.75.2.1 void* mxml_custom_s::data

Definition at line 107 of file mxml.h.

Referenced by [mxmlDelete\(\)](#), [mxmlNewCustom\(\)](#), and [mxmlSetCustom\(\)](#).

6.75.2.2 void(* mxml_custom_s::destroy)(void *)

Definition at line 108 of file mxml.h.

Referenced by [mxmlDelete\(\)](#), [mxmlNewCustom\(\)](#), and [mxmlSetCustom\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/[mxml.h](#)

6.76 mxml_fdbuf_s Struct Reference

Data Fields

- int **fd**
- unsigned char * **current**
- unsigned char * **end**
- unsigned char **buffer** [8192]

6.76.1 Detailed Description

Definition at line 84 of file mxmxml-file.c.

6.76.2 Field Documentation

6.76.2.1 unsigned char mxml_fdbuf_s::buffer[8192]

Definition at line 87 of file mxmxml-file.c.

Referenced by mxml_fd_read(), mxml_fd_write(), mxmlLoadFd(), and mxmlSaveFd().

6.76.2.2 unsigned char* mxml_fdbuf_s::current

Definition at line 87 of file mxmxml-file.c.

Referenced by mxml_fd_getc(), mxml_fd_putc(), mxml_fd_read(), mxml_fd_write(), mxmlLoadFd(), and mxmlSaveFd().

6.76.2.3 unsigned char * mxml_fdbuf_s::end

Definition at line 87 of file mxmxml-file.c.

Referenced by mxml_fd_getc(), mxml_fd_putc(), mxml_fd_read(), mxmlLoadFd(), and mxmlSaveFd().

6.76.2.4 int mxml_fdbuf_s::fd

Definition at line 86 of file mxmxml-file.c.

Referenced by mxml_fd_read(), mxml_fd_write(), mxmlLoadFd(), and mxmlSaveFd().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/[mxml-file.c](#)

6.77 mxml_index_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- char * [attr](#)
- int [num_nodes](#)
- int [alloc_nodes](#)
- int [cur_node](#)
- [mxml_node_t ** nodes](#)

6.77.1 Detailed Description

Definition at line 133 of file mxml.h.

6.77.2 Field Documentation

6.77.2.1 int mxml_index_s::alloc_nodes

Definition at line 137 of file mxml.h.

Referenced by [mxmlIndexDelete\(\)](#), and [mxmlIndexNew\(\)](#).

6.77.2.2 char* mxml_index_s::attr

Definition at line 135 of file mxml.h.

Referenced by [index_compare\(\)](#), [index_find\(\)](#), [mxmlIndexDelete\(\)](#), [mxmlIndexFind\(\)](#), and [mxmlIndexNew\(\)](#).

6.77.2.3 int mxml_index_s::cur_node

Definition at line 138 of file mxml.h.

Referenced by [mxmlIndexEnum\(\)](#), [mxmlIndexFind\(\)](#), and [mxmlIndexReset\(\)](#).

6.77.2.4 mxml_node_t** mxml_index_s::nodes

Definition at line 139 of file mxml.h.

Referenced by [index_sort\(\)](#), [mxmlIndexDelete\(\)](#), [mxmlIndexEnum\(\)](#), [mxmlIndexFind\(\)](#), [mxmlIndexNew\(\)](#), and [mxmlIndexReset\(\)](#).

6.77.2.5 int mxml_index_s::num_nodes

Definition at line 136 of file mxml.h.

Referenced by [main\(\)](#), [mxmlIndexEnum\(\)](#), [mxmlIndexFind\(\)](#), [mxmlIndexNew\(\)](#), and [mxmlIndexReset\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/[mxml.h](#)

6.78 mxmxml_node_s Struct Reference

```
#include <mxmxml.h>
```

Data Fields

- `mxmxml_type_t type`
- `struct mxmxml_node_s * next`
- `struct mxmxml_node_s * prev`
- `struct mxmxml_node_s * parent`
- `struct mxmxml_node_s * child`
- `struct mxmxml_node_s * last_child`
- `mxmxml_value_t value`

6.78.1 Detailed Description

Definition at line 122 of file mxmxml.h.

6.78.2 Field Documentation

6.78.2.1 struct mxmxml_node_s* mxmxml_node_s::child

Definition at line 128 of file mxmxml.h.

Referenced by `add_variable()`, `agent_xml_parse__fill_row_data()`, `fipa_envelope_HandleAclRepresentation()`, `fipa_envelope_HandleComments()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandlePayloadEncoding()`, `fipa_envelope_HandlePayloadLength()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseAgentIdentifier()`, `main()`, `mxmxml_write_node()`, `mxmxmlAdd()`, `mxmxmlDelete()`, `mxmxmlRemove()`, `mxmxmlWalkNext()`, `scan_file()`, `sort_node()`, `whitespace_cb()`, `write_documentation()`, `write_element()`, and `xml_get_text()`.

6.78.2.2 struct mxmxml_node_s* mxmxml_node_s::last_child

Definition at line 129 of file mxmxml.h.

Referenced by `add_variable()`, `main()`, `mxmxmlAdd()`, `mxmxmlRemove()`, `mxmxmlWalkPrev()`, and `scan_file()`.

6.78.2.3 struct mxmxml_node_s* mxmxml_node_s::next

Definition at line 125 of file mxmxml.h.

Referenced by `add_variable()`, `main()`, `mxmxml_write_node()`, `mxmxmlAdd()`, `mxmxmlFindElement()`, `mxmxmlRemove()`, `mxmxmlWalkNext()`, `scan_file()`, `sort_node()`, `xml_get_next_element()`, and `xml_get_text()`.

6.78.2.4 struct mxmxml_node_s* mxmxml_node_s::parent

Definition at line 127 of file mxmxml.h.

Referenced by `agent_xml_parse__data()`, `mxmxml_load_data()`, `mxmxmlAdd()`, `mxmxmlRemove()`, `mxmxmlWalkNext()`, `mxmxmlWalkPrev()`, `sort_node()`, `whitespace_cb()`, `ws_cb()`, and `xml_find_sibling()`.

6.78.2.5 struct mxml_node_s* mxml_node_s::prev

Definition at line 126 of file mxml.h.

Referenced by mxml_write_node(), mxmlAdd(), mxmlRemove(), and mxmlWalkPrev().

6.78.2.6 mxml_type_t mxml_node_s::type

Definition at line 124 of file mxml.h.

Referenced by agent_xml_parse_fill_row_data(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), main(), mxml_new(), mxml_write_node(), mxmlDelete(), mxmlElementGetAttr(), mxmlElementSetAttr(), mxmlFindElement(), mxmlSetCustom(), mxmlSetElement(), mxmlSetInteger(), mxmlSetOpaque(), mxmlSetReal(), mxmlSetText(), mxmlSetTextf(), write_element(), xml_get_cdata(), xml_get_element_name(), xml_get_next_element(), and xml_get_text().

6.78.2.7 mxml_value_t mxml_node_s::value

Definition at line 130 of file mxml.h.

Referenced by add_variable(), agent_xml_parse_fill_row_data(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), index_compare(), index_find(), main(), mxml_get_entity(), mxml_load_data(), mxml_parse_element(), mxml_write_node(), mxmlDelete(), mxmlElementGetAttr(), mxmlElementSetAttr(), mxmlFindElement(), mxmlIndexNew(), mxmlNewCustom(), mxmlNewElement(), mxmlNewInteger(), mxmlNewOpaque(), mxmlNewReal(), mxmlNewText(), mxmlNewTextf(), mxmlSetCustom(), mxmlSetElement(), mxmlSetInteger(), mxmlSetOpaque(), mxmlSetReal(), mxmlSetText(), mxmlSetTextf(), scan_file(), sort_node(), type_cb(), update_comment(), whitespace_cb(), write_element(), ws_cb(), xml_get_element_name(), and xml_get_text().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/[mxml.h](#)

6.79 mxmxml_text_s Struct Reference

```
#include <mxmxml.h>
```

Data Fields

- int whitespace
- char * string

6.79.1 Detailed Description

Definition at line 99 of file mxmxml.h.

6.79.2 Field Documentation

6.79.2.1 char* mxmxml_text_s::string

Definition at line 102 of file mxmxml.h.

Referenced by add_variable(), agent_xml_parse__fill_row_data(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), main(), mxml_write_node(), mxmlDelete(), mxmlNewText(), mxmlNewTextf(), mxmlSetText(), mxmlSetTextf(), scan_file(), update_comment(), write_element(), and xml_get_text().

6.79.2.2 int mxmxml_text_s::whitespace

Definition at line 101 of file mxmxml.h.

Referenced by add_variable(), main(), mxml_write_node(), mxmlNewText(), mxmlNewTextf(), mxmlSetText(), mxmlSetTextf(), scan_file(), and write_element().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxmxml-2.2.2/mxmxml.h

6.80 mxml_value_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- `char * name`
- `int numAttrs`
- `mxml_attr_t * attrs`

6.80.1 Detailed Description

Definition at line 92 of file mxml.h.

6.80.2 Field Documentation

6.80.2.1 mxml_attr_t* mxml_value_s::attrs

Definition at line 96 of file mxml.h.

Referenced by `mxml_write_node()`, `mxmlDelete()`, `mxmlElementGetAttr()`, and `mxmlElementSetAttr()`.

6.80.2.2 char* mxml_value_s::name

Definition at line 94 of file mxml.h.

Referenced by `index_compare()`, `index_find()`, `main()`, `mxml_get_entity()`, `mxml_load_data()`, `mxml_parse_element()`, `mxml_write_node()`, `mxmlDelete()`, `mxmlElementSetAttr()`, `mxmlFindElement()`, `mxmlIndexNew()`, `mxmlNewElement()`, `mxmlSetElement()`, `scan_file()`, `sort_node()`, `type_cb()`, `update_comment()`, `whitespace_cb()`, `ws_cb()`, `xml_get_element_name()`, and `xml_get_text()`.

6.80.2.3 int mxml_value_s::numAttrs

Definition at line 95 of file mxml.h.

Referenced by `mxml_write_node()`, `mxmlDelete()`, `mxmlElementGetAttr()`, and `mxmlElementSetAttr()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h`

6.81 mxml_value_u Union Reference

```
#include <mxml.h>
```

Data Fields

- [mxml_element_t element](#)
- [int integer](#)
- [char * opaque](#)
- [double real](#)
- [mxml_text_t text](#)
- [mxml_custom_t custom](#)

6.81.1 Detailed Description

Definition at line 112 of file mxml.h.

6.81.2 Field Documentation

6.81.2.1 mxml_custom_t mxml_value_u::custom

Definition at line 119 of file mxml.h.

Referenced by [mxmlDelete\(\)](#), [mxmlNewCustom\(\)](#), and [mxmlSetCustom\(\)](#).

6.81.2.2 mxml_element_t mxml_value_u::element

Definition at line 114 of file mxml.h.

Referenced by [index_compare\(\)](#), [index_find\(\)](#), [main\(\)](#), [mxml_get_entity\(\)](#), [mxml_load_data\(\)](#), [mxml_parse_element\(\)](#), [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlElementGetAttr\(\)](#), [mxmlElementSetAttr\(\)](#), [mxmlFindElement\(\)](#), [mxmlIndexNew\(\)](#), [mxmlNewElement\(\)](#), [mxmlSetElement\(\)](#), [scan_file\(\)](#), [sort_node\(\)](#), [type_cb\(\)](#), [update_comment\(\)](#), [whitespace_cb\(\)](#), [ws_cb\(\)](#), [xml_get_element_name\(\)](#), and [xml_get_text\(\)](#).

6.81.2.3 int mxml_value_u::integer

Definition at line 115 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlNewInteger\(\)](#), and [mxmlSetInteger\(\)](#).

6.81.2.4 char* mxml_value_u::opaque

Definition at line 116 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlNewOpaque\(\)](#), and [mxmlSetOpaque\(\)](#).

6.81.2.5 double mxml_value_u::real

Definition at line 117 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlNewReal\(\)](#), and [mxmlSetReal\(\)](#).

6.81.2.6 `mxml_text_t mxml_value_u::text`

Definition at line 118 of file `mxml.h`.

Referenced by `add_variable()`, `agent_xml_parse__fill_row_data()`, `fipa_envelope_HandleAclRepresentation()`, `fipa_envelope_HandleComments()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandlePayloadEncoding()`, `fipa_envelope_HandlePayloadLength()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseAgentIdentifier()`, `main()`, `mxml_write_node()`, `mxmlDelete()`, `mxmlNewText()`, `mxmlNewTextf()`, `mxmlSetText()`, `mxmlSetTextf()`, `scan_file()`, `update_comment()`, `write_element()`, and `xml_get_text()`.

The documentation for this union was generated from the following file:

- [/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h](#)

6.82 options Struct Reference

Data Fields

- int [opmode](#)
- int [iomode](#)
- char * [server_name](#)
- int [server_port](#)
- int [command](#)
- int [buffer_size](#)
- int [max_bytes](#)
- int [debug_level](#)
- int [conn_timeout](#)
- int [max_connections](#)
- int [session_reuse](#)
- int [session_lifetime](#)
- int [force_cipher](#) [2]

6.82.1 Detailed Description

Definition at line 75 of file `ssl_test.c`.

6.82.2 Field Documentation

6.82.2.1 int options::buffer_size

Definition at line 82 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

6.82.2.2 int options::command

Definition at line 81 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

6.82.2.3 int options::conn_timeout

Definition at line 85 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

6.82.2.4 int options::debug_level

Definition at line 84 of file `ssl_test.c`.

Referenced by `main()`.

6.82.2.5 int options::force_cipher[2]

Definition at line 89 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.6 int options::iomode

Definition at line 78 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.7 int options::max_bytes

Definition at line 83 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.8 int options::max_connections

Definition at line 86 of file ssl_test.c.

Referenced by main().

6.82.2.9 int options::opmode

Definition at line 77 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.10 char* options::server_name

Definition at line 79 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.11 int options::server_port

Definition at line 80 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.12 int options::session_lifetime

Definition at line 88 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.13 int options::session_reuse

Definition at line 87 of file ssl_test.c.

Referenced by main(), and ssl_test().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/[ssl_test.c](#)

6.83 rsa_context Struct Reference

RSA context structure.

```
#include <rsa.h>
```

Data Fields

- int ver
- int len
- mpi N
- mpi E
- mpi D
- mpi P
- mpi Q
- mpi DP
- mpi DQ
- mpi QP
- mpi RN
- mpi RP
- mpi RQ
- int padding
- int hash_id
- int(* f_rng)(void *)
- void * p_rng

6.83.1 Detailed Description

RSA context structure.

Definition at line 56 of file rsa.h.

6.83.2 Field Documentation

6.83.2.1 mpi rsa_context::D

private exponent

Definition at line 64 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_check_privkey(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

6.83.2.2 mpi rsa_context::DP

D % (P - 1)

Definition at line 67 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

6.83.2.3 mpi rsa_context::DQ

D % (Q - 1)

Definition at line 68 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

6.83.2.4 mpi rsa_context::E

public exponent

Definition at line 62 of file rsa.h.

Referenced by d2i_RSA_PUBKEY(), debug_print_crt(), generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_check_privkey(), rsa_check_pubkey(), rsa_decryption(), rsa_encryption(), rsa_free(), rsa_gen_key(), rsa_public(), rsa_self_test(), x509parse_crt(), and x509parse_key().

6.83.2.5 int(* rsa_context::f_rng)(void *)

RNG function

Definition at line 77 of file rsa.h.

Referenced by rsa_gen_key(), and rsa_init().

6.83.2.6 int rsa_context::hash_id

hash identifier

Definition at line 76 of file rsa.h.

Referenced by rsa_init().

6.83.2.7 int rsa_context::len

size(N) in chars

Definition at line 59 of file rsa.h.

Referenced by d2i_RSA_PUBKEY(), main(), rsa_decryption(), rsa_encryption(), rsa_gen_key(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), rsa_private(), rsa_public(), rsa_self_test(), ssl_parse_certificate_verify(), ssl_parse_client_key_exchange(), ssl_parse_server_key_exchange(), ssl_write_certificate_verify(), ssl_write_client_key_exchange(), ssl_write_server_key_exchange(), x509parse_crt(), and x509parse_key().

6.83.2.8 mpi rsa_context::N

public modulus

Definition at line 61 of file rsa.h.

Referenced by d2i_RSA_PUBKEY(), debug_print_crt(), generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_check_privkey(), rsa_check_pubkey(), rsa_decryption(), rsa_

encryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_public(), rsa_self_test(), x509parse_cert_info(), x509parse_crt(), and x509parse_key().

6.83.2.9 mpi rsa_context::P

1st prime factor

Definition at line 65 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_check_privkey(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

6.83.2.10 void* rsa_context::p_rng

RNG parameter

Definition at line 78 of file rsa.h.

Referenced by rsa_gen_key(), and rsa_init().

6.83.2.11 int rsa_context::padding

1.5 or OAEP/PSS

Definition at line 75 of file rsa.h.

Referenced by rsa_init(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

6.83.2.12 mpi rsa_context::Q

2nd prime factor

Definition at line 66 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_check_privkey(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

6.83.2.13 mpi rsa_context::QP

$1 / (Q \% P)$

Definition at line 69 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

6.83.2.14 mpi rsa_context::RN

cached $R^2 \bmod N$

Definition at line 71 of file rsa.h.

Referenced by rsa_free(), rsa_private(), and rsa_public().

6.83.2.15 mpi rsa_context::RP

cached $R^2 \bmod P$

Definition at line 72 of file rsa.h.

Referenced by rsa_free(), and rsa_private().

6.83.2.16 mpi rsa_context::RQ

cached $R^2 \bmod Q$

Definition at line 73 of file rsa.h.

Referenced by rsa_free(), and rsa_private().

6.83.2.17 int rsa_context::ver

always 0

Definition at line 58 of file rsa.h.

Referenced by x509parse_key().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[rsa.h](#)

6.84 rwlock_s Struct Reference

```
#include <rwlock.h>
```

Data Fields

- int [readers](#)
- MUTEX_T * [lock](#)
- COND_T * [reader_cond](#)
- COND_T * [writer_cond](#)

6.84.1 Detailed Description

Definition at line 6 of file rwlock.h.

6.84.2 Field Documentation

6.84.2.1 MUTEX_T* rwlock_s::lock

Definition at line 9 of file rwlock.h.

Referenced by ListRDtoWR(), ListRDWait(), ListWRtoRD(), ListWRWait(), rwlock_Destroy(), rwlock_New(), rwlock_rdlock(), rwlock_runlock(), rwlock_rdwait(), rwlock_wrlock(), and rwlock_wrunlock().

6.84.2.2 COND_T* rwlock_s::reader_cond

Definition at line 10 of file rwlock.h.

Referenced by ListRDWait(), ListWRWait(), rwlock_Destroy(), rwlock_New(), rwlock_rdwait(), and rwlock_wrunlock().

6.84.2.3 int rwlock_s::readers

Definition at line 8 of file rwlock.h.

Referenced by ListRDtoWR(), ListRDWait(), ListWRtoRD(), rwlock_New(), rwlock_rdlock(), rwlock_runlock(), rwlock_rdwait(), and rwlock_wrlock().

6.84.2.4 COND_T* rwlock_s::writer_cond

Definition at line 11 of file rwlock.h.

Referenced by ListRDtoWR(), rwlock_Destroy(), rwlock_New(), rwlock_runlock(), and rwlock_wrlock().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[rwlock.h](#)

6.85 sha1_context Struct Reference

SHA-1 context structure.

```
#include <sha1.h>
```

Data Fields

- unsigned long **total** [2]
- unsigned long **state** [5]
- unsigned char **buffer** [64]
- unsigned char **ipad** [64]
- unsigned char **opad** [64]

6.85.1 Detailed Description

SHA-1 context structure.

Definition at line 10 of file sha1.h.

6.85.2 Field Documentation

6.85.2.1 unsigned char sha1_context::buffer[64]

data block being processed

Definition at line 14 of file sha1.h.

Referenced by sha1_update().

6.85.2.2 unsigned char sha1_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file sha1.h.

Referenced by sha1_hmac_starts().

6.85.2.3 unsigned char sha1_context::opad[64]

HMAC: outer padding

Definition at line 17 of file sha1.h.

Referenced by sha1_hmac_finish(), and sha1_hmac_starts().

6.85.2.4 unsigned long sha1_context::state[5]

intermediate digest state

Definition at line 13 of file sha1.h.

Referenced by sha1_finish(), sha1_process(), sha1_starts(), and ssl_calc_finished().

6.85.2.5 unsigned long sha1_context::total[2]

number of bytes processed

Definition at line 12 of file sha1.h.

Referenced by sha1_finish(), sha1_starts(), and sha1_update().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[sha1.h](#)

6.86 sha2_context Struct Reference

SHA-256 context structure.

```
#include <sha2.h>
```

Data Fields

- unsigned long `total` [2]
- unsigned long `state` [8]
- unsigned char `buffer` [64]
- unsigned char `ipad` [64]
- unsigned char `opad` [64]
- int `is224`

6.86.1 Detailed Description

SHA-256 context structure.

Definition at line 10 of file sha2.h.

6.86.2 Field Documentation

6.86.2.1 unsigned char sha2_context::buffer[64]

data block being processed

Definition at line 14 of file sha2.h.

Referenced by sha2_update().

6.86.2.2 unsigned char sha2_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file sha2.h.

Referenced by sha2_hmac_starts().

6.86.2.3 int sha2_context::is224

0 => SHA-256, else SHA-224

Definition at line 18 of file sha2.h.

Referenced by sha2_finish(), sha2_hmac_finish(), and sha2_starts().

6.86.2.4 unsigned char sha2_context::opad[64]

HMAC: outer padding

Definition at line 17 of file sha2.h.

Referenced by sha2_hmac_finish(), and sha2_hmac_starts().

6.86.2.5 unsigned long sha2_context::state[8]

intermediate digest state

Definition at line 13 of file sha2.h.

Referenced by sha2_finish(), sha2_process(), and sha2_starts().

6.86.2.6 unsigned long sha2_context::total[2]

number of bytes processed

Definition at line 12 of file sha2.h.

Referenced by sha2_finish(), sha2_starts(), and sha2_update().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[sha2.h](#)

6.87 sha4_context Struct Reference

SHA-512 context structure.

```
#include <sha4.h>
```

Data Fields

- unsigned int64 **total** [2]
- unsigned int64 **state** [8]
- unsigned char **buffer** [128]
- unsigned char **ipad** [128]
- unsigned char **opad** [128]
- int **is384**

6.87.1 Detailed Description

SHA-512 context structure.

Definition at line 18 of file sha4.h.

6.87.2 Field Documentation

6.87.2.1 unsigned char sha4_context::buffer[128]

data block being processed

Definition at line 22 of file sha4.h.

Referenced by sha4_update().

6.87.2.2 unsigned char sha4_context::ipad[128]

HMAC: inner padding

Definition at line 24 of file sha4.h.

Referenced by sha4_hmac_starts().

6.87.2.3 int sha4_context::is384

0 => SHA-512, else SHA-384

Definition at line 26 of file sha4.h.

Referenced by sha4_finish(), sha4_hmac_finish(), and sha4_starts().

6.87.2.4 unsigned char sha4_context::opad[128]

HMAC: outer padding

Definition at line 25 of file sha4.h.

Referenced by sha4_hmac_finish(), and sha4_hmac_starts().

6.87.2.5 unsigned int64 sha4_context::state[8]

intermediate digest state

Definition at line 21 of file sha4.h.

Referenced by sha4_finish(), sha4_process(), and sha4_starts().

6.87.2.6 unsigned int64 sha4_context::total[2]

number of bytes processed

Definition at line 20 of file sha4.h.

Referenced by sha4_finish(), sha4_starts(), and sha4_update().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[sha4.h](#)

6.88 stationary_agent_info_s Struct Reference

```
#include <libmc.h>
```

Data Fields

- void * [args](#)
- struct [agent_s](#) * [agent](#)
- [MCAgency_t](#) [attr](#)
- [MCAgency_t](#) [agency](#)
- pthread_t [thread](#)

6.88.1 Detailed Description

Definition at line 286 of file libmc.h.

6.88.2 Field Documentation

6.88.2.1 [MCAgency_t](#) [stationary_agent_info_s::agency](#)

Definition at line 290 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgency\(\)](#).

6.88.2.2 [struct agent_s*](#) [stationary_agent_info_s::agent](#)

Definition at line 288 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgent\(\)](#).

6.88.2.3 [void*](#) [stationary_agent_info_s::args](#)

Definition at line 287 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgentArgs\(\)](#).

6.88.2.4 [MCAgency_t](#) [stationary_agent_info_s::attr](#)

Definition at line 289 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#).

6.88.2.5 [pthread_t](#) [stationary_agent_info_s::thread](#)

Definition at line 294 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#).

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[libmc.h](#)

6.89 syncListNode_s Struct Reference

```
#include <sync_list.h>
```

Data Fields

- MUTEX_T * [lock](#)
- COND_T * [cond](#)
- SEMAPHORE_T * [sem](#)
- int [id](#)
- int [signalled](#)

6.89.1 Detailed Description

Definition at line 16 of file sync_list.h.

6.89.2 Field Documentation

6.89.2.1 COND_T* syncListNode_s::cond

Definition at line 18 of file sync_list.h.

Referenced by MC_CondBroadcast(), MC_CondSignal(), MC_CondWait(), syncListNodeDestroy(), syncListNodeInit(), and syncListNodeNew().

6.89.2.2 int syncListNode_s::id

Definition at line 20 of file sync_list.h.

Referenced by MC_SyncInit(), syncListAddNode(), syncListNew(), and syncListNode_CmpID().

6.89.2.3 MUTEX_T* syncListNode_s::lock

Definition at line 17 of file sync_list.h.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_MutexLock(), MC_MutexUnlock(), syncListNodeDestroy(), syncListNodeInit(), and syncListNodeNew().

6.89.2.4 SEMAPHORE_T* syncListNode_s::sem

Definition at line 19 of file sync_list.h.

Referenced by MC_SemaphorePost(), MC_SemaphoreWait(), syncListNodeDestroy(), syncListNodeInit(), and syncListNodeNew().

6.89.2.5 int syncListNode_s::signalled

Definition at line 21 of file sync_list.h.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), and syncListNodeNew().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mc_sync/[sync_list.h](#)

Chapter 7

File Documentation

7.1 /home/dko/Projects/mobilec/src/acc.c File Reference

```
#include <sys/socket.h>
#include <arpa/inet.h>
#include <netinet/in.h>
#include <netdb.h>
#include <sys/un.h>
#include <unistd.h>
#include <sys/time.h>
#include <pthread.h>
#include "config.h"
#include <stdlib.h>
#include "include/acc.h"
#include "macros.h"
#include "agent_datastate.h"
#include "agent_task.h"
#include "libmc.h"
#include "message.h"
#include <sys/types.h>
#include <semaphore.h>
#include <errno.h>
#include "acc.h"
#include "ams.h"
#include "barrier.h"
#include "cmd_prompt.h"
#include "connection.h"
```

```
#include "df.h"
#include "../mc_sync/sync_list.h"
#include "../mc_list/list.h"
#include "../security/asm.h"
#include "mtp_http.h"
#include <mxml.h>
#include <stdio.h>
#include <string.h>
#include <sys/stat.h>
#include "xyssl-0.9/include/xyssl/havege.h"
#include "xyssl-0.9/include/xyssl/bignum.h"
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "xyssl-0.9/include/xyssl/sha2.h"
#include "xyssl-0.9/include/xyssl/shal.h"
#include "xyssl-0.9/include/xyssl/aes.h"
#include "xyssl-0.9/include/xyssl/md5.h"
#include "agent.h"
#include "fipa_acl.h"
```

Defines

- #define BACKLOG 200
- #define CONN_THREADS 40
- #define CONNECT_THREAD_EXIT()
- #define BUflen 512
- #define UDPPORT 8866

Functions

- acc_p acc_Initialize (struct mc_platform_s *mc_platform)
- int acc_Destroy (acc_p acc)
- void * acc_MessageHandlerThread (void *arg)
- void * acc_Thread (void *arg)
- void * acc_connection_Thread (void *arg)
- void acc_Start (mc_platform_p mc_platform)
- int auth_conn_rece_key (int sockfd, char *peer_name, int *nonce, unsigned char *aes_key, char *privkey, char *known_host_filename)
- void * listen_Thread (void *arg)
- void * udplisten_Thread (void *arg)

7.1.1 Define Documentation

7.1.1.1 #define BACKLOG 200

Definition at line 74 of file acc.c.

Referenced by listen_Thread().

7.1.1.2 #define BUFSIZE 512

Definition at line 934 of file acc.c.

Referenced by udplisten_Thread().

7.1.1.3 #define CONN_THREADS 40

Definition at line 304 of file acc.c.

Referenced by acc_Thread().

7.1.1.4 #define CONNECT_THREAD_EXIT()

Value:

```
free(arg); \
    MUTEX_LOCK(&acc->conn_thread_lock); \
    acc->num_conn_threads--; \
    COND_SIGNAL(&acc->conn_thread_cond); \
    MUTEX_UNLOCK(&acc->conn_thread_lock); \
    THREAD_EXIT();
```

Definition at line 395 of file acc.c.

Referenced by acc_connection_Thread().

7.1.1.5 #define UDPPORT 8866

Definition at line 935 of file acc.c.

Referenced by udplisten_Thread().

7.1.2 Function Documentation

7.1.2.1 void* acc_connection_Thread (void * arg)

Definition at line 405 of file acc.c.

References mc_platform_s::acc, fipa_agent_identifier_s::addresses, agent_CmpName(), mc_platform_s::agent_queue, AGENT_UPDATE, CANCEL, CONNECT_THREAD_EXIT, connection_Destroy(), mtp_http_s::content, mtp_http_content_s::data, FIPA_ACL, fipa_acl_envelope_Destroy(), fipa_acl_envelope_New(), fipa_acl_message_Destroy(), fipa_acl_message_New(), fipa_acl_Parse(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_Parse(), fipa_message_string_Destroy(), fipa_message_string_New(), mtp_http_s::http_performative, HTTP_POST, HTTP_PUT, ListAdd(), ListRDLock(), ListRDUnlock(), ListSearchCB(), ListWRLock(), ListWRUnlock(), agent_s::mailbox,

agent_s::mc_platform, fipa_message_string_s::message, message_s::message_body, message_Destroy(), message_New(), mtp_http_s::message_parts, mc_platform_s::message_queue, message_s::message_type, message_xml_parse(), MOBILE_AGENT, mtp_http_Destroy(), mtp_http_InitializeFromConnection(), mtp_http_New(), MXML_NO_CALLBACK, mxmLoadString(), N_UNDRSTD, fipa_agent_identifier_s::name, fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::num_params, fipa_acl_envelope_s::params, fipa_message_string_s::parse, mc_platform_s::port, mc_platform_s::private_key, QUER_IF, QUER_REF, RELAY, REQUEST, RETURN_MSG, fipa_url_s::str, strdup, SUBSCRIBE, mtp_http_s::target, fipa_acl_Param_s::to, fipa_url_sequence_s::urls, and message_s::xml_root.

Referenced by acc_Thread().

7.1.2.2 int acc_Destroy (acc_p acc)

Definition at line 102 of file acc.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by mc_platform_Destroy().

7.1.2.3 acc_p acc_Initialize (struct mc_platform_s * mc_platform)

Definition at line 77 of file acc.c.

References COND_INIT, COND_T, MUTEX_INIT, and MUTEX_T.

Referenced by mc_platform_Initialize().

7.1.2.4 void* acc_MessageHandlerThread (void * arg)

Definition at line 118 of file acc.c.

References mc_platform_s::acc, agent_CmpName(), agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, AGENT_UPDATE, mc_platform_s::ams, CANCEL, COND_BROADCAST, COND_WAIT, agent_s::datastate, FIPA_ACL, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, ListAdd(), ListPop(), ListSearchCB(), ListWRLock(), ListWRUnlock(), ListWRWait(), agent_s::lock, MC_AGENT_NEUTRAL, MC_RECV_AGENT, MC_RECV_MESSAGE, MC_RECV_RETURN, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, message_Destroy(), mc_platform_s::message_queue, message_Send(), message_s::message_type, MOBILE_AGENT, MUTEX_LOCK, MUTEX_UNLOCK, N_UNDRSTD, agent_s::name, agent_datastate_s::persistent, QUER_IF, QUER_REF, mc_platform_s::quit, mc_platform_s::quit_lock, RELAY, REQUEST, RETURN_MSG, SUBSCRIBE, THREAD_EXIT, and message_s::to_address.

Referenced by acc_Start().

7.1.2.5 void acc_Start (mc_platform_p mc_platform)

Definition at line 589 of file acc.c.

References mc_platform_s::acc, acc_MessageHandlerThread(), acc_Thread(), listen_Thread(), MC_THREAD_ACC, mc_platform_s::stack_size, THREAD_CREATE, and udplisten_Thread().

Referenced by mc_platform_Initialize().

7.1.2.6 void* acc_Thread (void * arg)

Definition at line 307 of file acc.c.

References mc_platform_s::acc, acc_connection_Thread(), COND_BROADCAST, COND_WAIT, CONN_THREADS, mc_platform_s::connection_queue, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, ListGetSize(), ListPop(), ListRDLock(), ListRDtoWR(), ListRDUunlock(), ListRDWait(), ListWRUnlock(), MC_RECV_CONNECTION, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, THREAD_CREATE, THREAD_DETACH, and THREAD_EXIT.

Referenced by acc_Start().

7.1.2.7 int auth_conn_rece_key (int sockfd, char * peer_name, int * nonce, unsigned char * aes_key, char * privkey, char * known_host_filename)

Definition at line 638 of file acc.c.

References read_known_host_file(), and reply_migration_process().

Referenced by listen_Thread().

7.1.2.8 void* listen_Thread (void * arg)

Definition at line 677 of file acc.c.

References mc_platform_s::acc, connection_s::addr, connection_s::AES_key, mc_platform_s::agency, auth_conn_rece_key(), BACKLOG, mc_platform_s::bluetooth, connection_s::clientfd, COND_BROADCAST, connection_s::connect_id, connection_New(), mc_platform_s::connection_queue, agency_s::known_host_filename, ListAdd(), ListWRLock(), ListWRUnlock(), MUTEX_LOCK, MUTEX_UNLOCK, connection_s::nonce, mc_platform_s::port, agency_s::portno, mc_platform_s::private_key, mc_platform_s::quit, connection_s::remote_hostname, connection_s::serverfd, SOCKET_ERROR, mc_platform_s::sockfd, and THREAD_EXIT.

Referenced by acc_Start().

7.1.2.9 void* udplisten_Thread (void * arg)

Definition at line 938 of file acc.c.

References buf, BUFSIZE, mc_platform_s::hostname, PACKAGE_VERSION, mc_platform_s::port, and UDPPORT.

Referenced by acc_Start().

7.2 /home/dko/Projects/mobilec/src/agent.c File Reference

```
#include <unistd.h>
#include "config.h"
#include <embedch.h>
#include "include/libmc.h"
#include "include/agent.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include <ch.h>
#include "include/xml_parser.h"
#include "dynstring.h"
```

Functions

- int `agent_AddPersistentVariable (agent_p agent, int task_num, const char *var_name)`
- `agent_p agent_Copy (const agent_p agent)`
- `agent_p agent_New (void)`
- `agent_p agent_NewBinary (struct mc_platform_s *mc_platform)`
- `agent_p agent_Initialize (struct mc_platform_s *mc_platform, message_p message, int id)`
- int `agent_Destroy (agent_p agent)`
- void `agent_RunChScript (agent_p agent, mc_platform_p mc_platform)`
- void * `agent_ChScriptInitVar (ChInterp_t *interp)`
- void * `agent_RunChScriptThread (void *ChAgent)`
- int `agent_Print (agent_t *agent)`
- int `agent_CmpName (const void *key, void *element)`
- int `agent_CmpID (int *id, agent_t *agent)`

7.2.1 Function Documentation

7.2.1.1 int `agent_AddPersistentVariable (agent_p agent, int task_num, const char * var_name)`

Definition at line 53 of file agent.c.

References `agent_s::agent_interp`, `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `CH_DATATYPE_SIZE`, `CHECK_NULL`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `interpreter_variable_data_CmpName()`, `interpreter_variable_data_Destroy()`, `ListAdd()`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR`, `agent_s::name`, `interpreter_variable_data_s::name`, `interpreter_variable_data_s::size`, `strdup`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

7.2.1.2 void* `agent_ChScriptInitVar (ChInterp_t * interp)`

Definition at line 554 of file agent.c.

References `MC_AclAddReceiver_chdl()`, `MC_AclAddReplyTo_chdl()`, `MC_AclDestroy_chdl()`, `MC_AclGetContent_chdl()`, `MC_AclGetConversationID_chdl()`, `MC_AclGetPerformative_chdl()`,

MC_AclGetProtocol_chdl(), MC_AclGetSender_chdl(), MC_AclNew_chdl(), MC_AclPost_chdl(), MC_AclReply_chdl(), MC_AclRetrieve_chdl(), MC_AclSend_chdl(), MC_AclSetContent_chdl(), MC_AclSetConversationID_chdl(), MC_AclSetPerformative_chdl(), MC_AclSetProtocol_chdl(), MC_AclSetSender_chdl(), MC_AclWaitRetrieve_chdl(), MC_AddAgent_chdl(), MC_AgentAddTask_chdl(), MC_AgentAttachFile_chdl(), MC_AgentListFiles_chdl(), MC_AgentRetrieveFile_chdl(), MC_AgentVariableRetrieve_chdl(), MC_AgentVariableSave_chdl(), MC_Barrier_chdl(), MC_BarrierDelete_chdl(), MC_BarrierInit_chdl(), MC_CallAgentFunc_chdl(), MC_ComposeAgent_chdl(), MC_ComposeAgentFromFile_chdl(), MC_ComposeAgentFromFileWithWorkgroup_chdl(), MC_ComposeAgentWithWorkgroup_chdl(), MC_CondBroadcast_chdl(), MC_CondReset_chdl(), MC_CondSignal_chdl(), MC_CondWait_chdl(), MC_DeleteAgent_chdl(), MC_DeleteAgentWG_chdl(), MC_DeregisterService_chdl(), MC_DestroyServiceSearchResult_chdl(), MC_End_chdl(), MC_FindAgentByID_chdl(), MC_FindAgentByName_chdl(), MC_GetAgentID_chdl(), MC_GetAgentName_chdl(), MC_GetAgentStatus_chdl(), MC_GetAgentXMLString_chdl(), MC_GetTimeOfDay_chdl(), MC_HaltAgency_chdl(), MC_MigrateAgent_chdl(), MC_MutexLock_chdl(), MC_MutexUnlock_chdl(), MC_PrintAgentCode_chdl(), MC_RegisterService_chdl(), MC_ResumeAgency_chdl(), MC_RetrieveAgent_chdl(), MC_RetrieveAgentCode_chdl(), MC_SaveData_chdl(), MC_SearchForService_chdl(), MC_SemaphorePost_chdl(), MC_SemaphoreWait_chdl(), MC_SendAgentMigrationMessage_chdl(), MC_SendAgentMigrationMessageFile_chdl(), MC_SendSteerCommand_chdl(), MC_SetAgentStatus_chdl(), MC_SetDefaultAgentStatus_chdl(), MC_SyncDelete_chdl(), MC_SyncInit_chdl(), MC_TerminateAgent_chdl(), and MC_TerminateAgentWG_chdl().

Referenced by interpreter_queue_CreateRetrieve(), and mc_platform_Initialize().

7.2.1.3 int agent_CmpID (int * *id*, agent_t * *agent*)

Definition at line 1377 of file agent.c.

References agent_s::id, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_FindAgentByID().

7.2.1.4 int agent_CmpName (const void * *key*, void * *element*)

Definition at line 1366 of file agent.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), MC_DeleteAgent(), MC_DeleteAgentWG(), and MC_FindAgentByName().

7.2.1.5 agent_p agent_Copy (const agent_p *agent*)

Definition at line 140 of file agent.c.

References agent_datastate_Copy(), agent_s::agent_interp, agent_New(), agent_s::agent_persistent, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_type, agent_s::arrival_time, COND_INIT, COND_NEW, agent_s::datastate, agent_s::home, agent_s::home_port, agent_s::id, ListInitialize(), agent_s::lock, agent_s::mailbox, MUTEX_INIT, MUTEX_LOCK, MUTEX_NEW, MUTEX_T, agent_s::name, agent_s::orphan, agent_s::owner, agent_s::return_data, and agent_s::run_lock.

Referenced by MC_CopyAgent().

7.2.1.6 int agent_Destroy (agent_p agent)

Definition at line 455 of file agent.c.

References agent_s::agent_address, agent_datastate_Destroy(), agent_s::agent_interp, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, COND_DESTROY, agent_s::datastate, fipa_acl_message_Destroy(), agent_s::home, mc_platform_s::interpreter_queue, ListAdd(), ListClearCB(), ListTerminate(), ListWRLock(), ListWRUnlock(), agent_s::lock, agent_s::mailbox, MC_AGENT_NEUTRAL, agent_s::mc_platform, MC_SUCCESS, MUTEX_DESTROY, MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, agent_s::owner, agent_s::run_lock, agent_s::sender, and agent_s::wg_code.

Referenced by agent_Initialize(), handler_FLUSH_AGENTS(), MC_DeleteAgentWG(), and mc_platform_Destroy().

7.2.1.7 agent_p agent_Initialize (struct mc_platform_s * mc_platform, message_p message, int id)

Definition at line 318 of file agent.c.

References agent_s::agent_address, agent_datastate_New(), agent_Destroy(), agent_s::agent_pipe_active, agent_s::agent_pipe_ready_to_read, agent_s::agent_ready_to_send, agent_s::agent_script_ready, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_thread_id, agent_s::agent_type, message_s::agent_xml_flag, agent_xml_parse(), agent_s::arrival_time, COND_BROADCAST, COND_DESTROY, COND_INIT, COND_NEW, agent_s::datastate, mc_platform_s::default_agentstatus, mc_platform_s::err, agent_s::home, mc_platform_s::hostname, agent_s::id, ListInitialize(), agent_s::lock, agent_s::mailbox, MC_ERR_PARSE, agent_s::mc_platform, MC_REMOTE_AGENT, MC_RETURN_AGENT, MC_WAIT_CH, message_s::message_type, MOBILE_AGENT, MUTEX_DESTROY, MUTEX_INIT, MUTEX_LOCK, MUTEX_NEW, MUTEX_T, MUTEX_UNLOCK, agent_s::orphan, mc_platform_s::port, RETURN_MSG, agent_s::run_lock, agent_s::sender, agent_datastate_s::xml_agent_root, message_s::xml_payload, message_s::xml_root, and agent_datastate_s::xml_root.

Referenced by acc_MessageHandlerThread(), MC_SendAgent(), MC_SendAgentFile(), and MC_SendAgentMigrationMessageFile().

7.2.1.8 agent_p agent_New (void)

Definition at line 207 of file agent.c.

References agent_s::agent_status_cond, agent_s::agent_status_lock, COND_INIT, COND_NEW, ListInitialize(), agent_s::lock, agent_s::mailbox, MUTEX_INIT, MUTEX_NEW, and agent_s::run_lock.

Referenced by agent_Copy(), and MC_ComposeAgentWithWorkgroup().

7.2.1.9 agent_p agent_NewBinary (struct mc_platform_s * mc_platform)

Definition at line 237 of file agent.c.

References agent_s::agent_address, agent_s::agent_pipe_active, agent_s::agent_pipe_ready_to_read, agent_s::agent_ready_to_send, agent_s::agent_script_ready, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_thread_id, agent_s::arrival_time, agent_s::binary, COND_BROADCAST, COND_INIT, COND_NEW, agent_s::home, mc_platform_s::hostname, agent_s::id, ListInitialize(), agent_s::lock, agent_s::mailbox, MC_AGENT_ACTIVE, agent_s::mc_platform, MUTEX_INIT, MUTEX_LOCK, MUTEX_NEW, MUTEX_T, MUTEX_UNLOCK, agent_s::orphan, mc_platform_s::port, agent_s::run_lock, and agent_s::sender.

Referenced by MC_AddStationaryAgent().

7.2.1.10 int agent_Print (agent_t * *agent*)

Definition at line 1356 of file agent.c.

References agent_s::agent_status, agent_s::agent_status_lock, agent_s::connect_id, agent_s::id, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by ams_Print(), and handler_PRINTLIST_AGENTS().

7.2.1.11 void agent_RunChScript (agent_p *agent*, mc_platform_p *mc_platform*)

Definition at line 513 of file agent.c.

References agent_RunChScriptThread(), agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_thread, COND_BROADCAST, MC_AGENT_ACTIVE, agent_s::mc_platform, MC_THREAD_AGENT, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::stack_size, and THREAD_CREATE.

Referenced by ams_ManageAgentList().

7.2.1.12 void* agent_RunChScriptThread (void * *ChAgent*)

Definition at line 1049 of file agent.c.

References mc_platform_s::agency, agent_s::agent_interp, agency_s::agentInitCallback, agency_s::agentInitUserData, mc_platform_s::ams, COND_SIGNAL, COND_WAIT, agent_s::datastate, agent_s::id, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, interpreter_queue_CreateRetrieve(), interpreter_variable_data_Destroy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), ListAdd(), ListClearCB(), ListWRLock(), ListWRUnlock(), MC_AGENT_NEUTRAL, MC_EXEC_AGENT, agent_s::mc_platform, MC_RETURN_AGENT, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MC_WAIT_FINISHED, MC_WAIT_MESSGSEND, MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, SIGNAL, agent_datastate_s::task_progress, and WARN.

Referenced by agent_RunChScript().

7.3 /home/dko/Projects/mobilec/src/agent_datastate.c File Reference

```
#include "config.h"
#include <mxml.h>
#include "include/agent_datastate.h"
#include "agent_task.h"
#include "include/macros.h"
#include "include/mc_error.h"
```

Functions

- [agent_datastate_p agent_datastate_Copy \(const agent_datastate_p datastate\)](#)
- [agent_datastate_p agent_datastate_New \(void\)](#)
- [int agent_datastate_Destroy \(agent_datastate_p agent_datastate\)](#)

7.3.1 Function Documentation

7.3.1.1 [agent_datastate_p agent_datastate_Copy \(const agent_datastate_p datastate\)](#)

Definition at line 47 of file agent_datastate.c.

References `agent_datastate_s::agent_code`, `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_datastate_New()`, `agent_task_Copy()`, `agent_datastate_s::init_agent_status`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::persistent`, `agent_datastate_s::return_data`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `agent_Copy()`.

7.3.1.2 [int agent_datastate_Destroy \(agent_datastate_p agent_datastate\)](#)

Definition at line 136 of file agent_datastate.c.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_task_Destroy()`, `MC_SUCCESS`, `mxmDelete()`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::tasks`, and `agent_datastate_s::xml_root`.

Referenced by `agent_Destroy()`.

7.3.1.3 [agent_datastate_p agent_datastate_New \(void\)](#)

Definition at line 115 of file agent_datastate.c.

References `agent_datastate_s::agent_code`, `CHECK_NULL`, `agent_datastate_s::init_agent_status`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::persistent`, `agent_datastate_s::progress_modifier`, `agent_datastate_s::return_data`, `agent_datastate_s::task_progress`, `agent_datastate_s::tasks`, `agent_datastate_s::xml_agent_root`, and `agent_datastate_s::xml_root`.

Referenced by `agent_datastate_Copy()`, `agent_Initialize()`, and `MC_ComposeAgentWithWorkgroup()`.

7.4 /home/dko/Projects/mobilec/src/agent_file_data.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/agent_file_data.h"
#include <b64/cencode.h>
```

Functions

- [agent_file_data_p agent_file_data_New \(void\)](#)
- [agent_file_data_p agent_file_data_NewWithData \(const char *name, const char *data\)](#)
- [agent_file_data_p agent_file_data_Copy \(agent_file_data_p src\)](#)
- [agent_file_data_p agent_file_data_InitializeFromFilename \(const char *filename\)](#)
- [agent_file_data_p agent_file_data_Encode \(const char *name, void *data, int size\)](#)
- [int agent_file_data_Destroy \(agent_file_data_p agent_file_data\)](#)
- [int agent_file_data_CmpName \(const void *key, void *element\)](#)

7.4.1 Function Documentation

7.4.1.1 [int agent_file_data_CmpName \(const void * key, void * element\)](#)

Definition at line 102 of file agent_file_data.c.

References agent_file_data_s::name.

Referenced by MC_AgentRetrieveFile().

7.4.1.2 [agent_file_data_p agent_file_data_Copy \(agent_file_data_p src\)](#)

Definition at line 26 of file agent_file_data.c.

References agent_file_data_s::data, agent_file_data_s::name, and strdup.

Referenced by agent_task_Copy().

7.4.1.3 [int agent_file_data_Destroy \(agent_file_data_p agent_file_data\)](#)

Definition at line 89 of file agent_file_data.c.

References agent_file_data_s::data, and agent_file_data_s::name.

Referenced by agent_task_Destroy(), and agent_xml_compose_task().

7.4.1.4 [agent_file_data_p agent_file_data_Encode \(const char * name, void * data, int size\)](#)

Definition at line 84 of file agent_file_data.c.

7.4.1.5 agent_file_data_p agent_file_data_InitializeFromFilename (const char *filename)

Definition at line 44 of file agent_file_data.c.

References base64_encode_block(), base64_encode_blockend(), base64_init_encodestate(), agent_file_data_s::data, agent_file_data_s::name, and strdup.

Referenced by MC_AgentAttachFile().

7.4.1.6 agent_file_data_p agent_file_data_New (void)

Definition at line 8 of file agent_file_data.c.

References agent_file_data_s::data, and agent_file_data_s::name.

Referenced by agent_file_data_NewWithData().

7.4.1.7 agent_file_data_p agent_file_data_NewWithData (const char *name, const char *data)

Definition at line 17 of file agent_file_data.c.

References agent_file_data_New(), agent_file_data_s::data, agent_file_data_s::name, and strdup.

Referenced by agent_xml_parse__file().

7.5 /home/dko/Projects/mobilec/src/agent_return_data.c File Reference

```
#include "config.h"
#include "include/interpreter_variable_data.h"
#include "include/agent.h"
```

Functions

- `interpreter_variable_data_p interpreter_variable_data_New (void)`
- `interpreter_variable_data_p interpreter_variable_data_InitializeFromAgent (agent_p agent)`
- `interpreter_variable_data_p interpreter_variable_data_Initialize (agent_p agent, const char *varname)`
- `int interpreter_variable_data_Destroy (interpreter_variable_data_p agent_variable_data)`
- `interpreter_variable_data_p interpreter_variable_data_Copy (interpreter_variable_data_p src)`
- `int interpreter_variable_data_CmpName (const char *name, interpreter_variable_data_t *data)`

7.5.1 Function Documentation

7.5.1.1 `int interpreter_variable_data_CmpName (const char * name, interpreter_variable_data_t * data)`

Definition at line 256 of file agent_return_data.c.

References `interpreter_variable_data_s::name`.

Referenced by `agent_AddPersistentVariable()`, `MC_AgentVariableRetrieve()`, and `MC_AgentVariableRetrieveInfo()`.

7.5.1.2 `interpreter_variable_data_p interpreter_variable_data_Copy (interpreter_variable_data_p src)`

Definition at line 235 of file agent_return_data.c.

References `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `interpreter_variable_data_New()`, `interpreter_variable_data_s::name`, `interpreter_variable_data_s::size`, and `strdup`.

Referenced by `agent_Task_Copy()`.

7.5.1.3 `int interpreter_variable_data_Destroy (interpreter_variable_data_p agent_variable_data)`

Definition at line 216 of file agent_return_data.c.

References `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `MC_SUCCESS`, and `interpreter_variable_data_s::name`.

Referenced by `agent_AddPersistentVariable()`, `agent_RunChScriptThread()`, and `agent_Task_Destroy()`.

7.5.1.4 interpreter_variable_data_p interpreter_variable_data_Initialize (agent_p *agent*, const char * *varname*)

Definition at line 145 of file agent_return_data.c.

References agent_s::agent_interp, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, CHECK_NULL, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, MUTEX_LOCK, MUTEX_UNLOCK, interpreter_variable_data_s::name, agent_s::run_lock, interpreter_variable_data_s::size, and strdup.

Referenced by agent_RunChScriptThread().

7.5.1.5 interpreter_variable_data_p interpreter_variable_data_InitializeFromAgent (agent_p *agent*)

Definition at line 61 of file agent_return_data.c.

References agent_s::agent_interp, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, CHECK_NULL, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, interpreter_variable_data_s::name, interpreter_variable_data_s::size, strdup, agent_datastate_s::task_progress, agent_datastate_s::tasks, and agent_task_s::var_name.

Referenced by agent_RunChScriptThread().

7.5.1.6 interpreter_variable_data_p interpreter_variable_data_New (void)

Definition at line 46 of file agent_return_data.c.

References interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CHECK_NULL, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, interpreter_variable_data_s::name, and interpreter_variable_data_s::size.

Referenced by agent_xml_parse__data(), interpreter_variable_data_Copy(), and MC_SaveData_chdl().

7.6 /home/dko/Projects/mobilec/src/agent_task.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/agent_file_data.h"
#include "include/agent_task.h"
#include "../mc_list/list.h"
#include "interpreter_variable_data.h"
#include "include/mc_error.h"
#include "../include/macros.h"
#include "../include/rwlock.h"
```

Functions

- [agent_task_p agent_task_New \(void\)](#)
- [agent_task_p agent_task_Copy \(agent_task_p task\)](#)
- [int agent_task_Destroy \(agent_task_p agent_task\)](#)

7.6.1 Function Documentation

7.6.1.1 [agent_task_p agent_task_Copy \(agent_task_p task\)](#)

Definition at line 70 of file agent_task.c.

References `agent_file_data_Copy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_task_s::code_id`, `agent_task_s::init_agent_status`, `interpreter_variable_data_Copy()`, `ListAdd()`, `ListCopy()`, `ListInitialize()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, `ListWRLock()`, `ListWRUnlock()`, `agent_task_s::num_saved_variables`, `agent_task_s::number_of_elements`, `agent_task_s::persistent`, `agent_task_s::saved_variables`, `agent_task_s::server_name`, `list_s::size`, `agent_task_s::size_of_element_array`, `strdup`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Copy()`.

7.6.1.2 [int agent_task_Destroy \(agent_task_p agent_task\)](#)

Definition at line 143 of file agent_task.c.

References `agent_file_data_Destroy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_task_s::code_id`, `interpreter_variable_data_Destroy()`, `ListClearCB()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `MC_SUCCESS`, `agent_task_s::saved_variables`, `agent_task_s::server_name`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Destroy()`.

7.6.1.3 `agent_task_p agent_task_New (void)`

Definition at line 50 of file `agent_task.c`.

References `agent_task_s::agent_file_list`, `agent_task_s::agent_variable_list`, `ListInitialize()`, `agent_task_s::num_saved_variables`, and `agent_task_s::saved_variables`.

Referenced by `agent_xml_parse_tasks()`, `MC_AgentAddTask()`, and `MC_ComposeAgentWithWorkgroup()`.

7.7 /home/dko/Projects/mobilec/src/ams.c File Reference

```
#include "config.h"
#include "include/ams.h"
#include "macros.h"
#include "include/agent.h"
#include "include/mc_platform.h"
```

Functions

- int [ams_Destroy](#) (ams_p ams)
- ams_p [ams_Initialize](#) (mc_platform_p mc_platform)
- void [ams_Print](#) (ams_p ams)
- int [ams_ManageAgentList](#) (ams_p ams)
- void [ams_Start](#) (mc_platform_p mc_platform)
- void * [ams_Thread](#) (void *arg)

7.7.1 Function Documentation

7.7.1.1 int ams_Destroy (ams_p *ams*)

Definition at line 45 of file ams.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by mc_platform_Destroy().

7.7.1.2 ams_p ams_Initialize (mc_platform_p *mc_platform*)

Definition at line 60 of file ams.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, and MUTEX_T.

Referenced by mc_platform_Initialize().

7.7.1.3 int ams_ManageAgentList (ams_p *ams*)

Definition at line 108 of file ams.c.

References agent_RunChScript(), agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::binary, COND_BROADCAST, ListAdd(), ListDelete(), ListRDLock(), ListRDtoWR(), ListRDUnlock(), ListSearch(), ListWRLock(), ListWRtoRD(), ListWRUnlock(), agent_s::lock, MC_AGENT_ACTIVE, MC_AGENT_NEUTRAL, MC_TerminateAgent(), MC_WAIT_CH, MC_WAIT_FINISHED, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromAgent(), message_New(), MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, agent_s::orphan, mc_platform_s::quit, mc_platform_s::quit_lock, agent_s::run_lock, and list_s::size.

Referenced by ams_Thread().

7.7.1.4 void ams_Print (ams_p *ams*)

Definition at line 87 of file ams.c.

References agent_Print(), ListForEachCB(), ListGetSize(), ListRDLock(), ListRDUnlock(), and list_s::size.

7.7.1.5 void ams_Start (mc_platform_p *mc_platform*)

Definition at line 227 of file ams.c.

References mc_platform_s::ams, ams_Thread(), MC_THREAD_AMS, mc_platform_s::stack_size, and THREAD_CREATE.

Referenced by mc_platform_Initialize().

7.7.1.6 void* ams_Thread (void * *arg*)

Definition at line 258 of file ams.c.

References mc_platform_s::ams, ams_ManageAgentList(), COND_BROADCAST, COND_WAIT, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by ams_Start().

7.8 /home/dko/Projects/mobilec/src/barrier.c File Reference

```
#include "config.h"
#include "include/barrier.h"
#include "macros.h"
#include "../mc_list/list.h"
#include "mc_rwlock.h"
#include "include/mc_error.h"
```

Functions

- [barrier_node_p barrier_node_Initialize \(int id, int num_registered\)](#)
- [int barrier_node_Destroy \(barrier_node_p node\)](#)
- [int barrier_node_CmpID \(const void *key, void *element\)](#)

7.8.1 Function Documentation

7.8.1.1 int barrier_node_CmpID (const void * *key*, void * *element*)

Definition at line 86 of file barrier.c.

References barrier_node_s::id, barrier_node_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_Barrier(), MC_BarrierDelete(), and MC_BarrierInit().

7.8.1.2 int barrier_node_Destroy (barrier_node_p *node*)

Definition at line 70 of file barrier.c.

References barrier_node_s::cond, COND_DESTROY, barrier_node_s::lock, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by MC_BarrierDelete(), and mc_platform_Destroy().

7.8.1.3 barrier_node_p barrier_node_Initialize (int *id*, int *num_registered*)

Definition at line 45 of file barrier.c.

References CHECK_NULL, barrier_node_s::cond, COND_INIT, COND_T, barrier_node_s::id, barrier_node_s::lock, MUTEX_INIT, MUTEX_T, barrier_node_s::num_registered, and barrier_node_s::num_waiting.

Referenced by MC_BarrierInit().

7.9 /home/dko/Projects/mobilec/src/cmd_prompt.c File Reference

```
#include <stdio.h>
#include <unistd.h>
#include "config.h"
#include <stdlib.h>
#include <string.h>
#include "include/cmd_prompt.h"
#include "macros.h"
#include "mc_platform.h"
#include "commands.x.h"
#include "include/agent.h"
```

Functions

- `cmd_prompt_p cmd_prompt_Initialize (mc_platform_p mc_platform)`
- `int cmd_prompt_Destroy (cmd_prompt_p cmd_prompt)`
- `void cmd_prompt_Start (mc_platform_p mc_platform)`
- `void * cmd_prompt_Thread (void *arg)`
- `int split_string (char ***args, const char *buf)`
- `int process_command (command_t *cmd)`
- `int exec_command (command_t cmd, mc_platform_p global)`
- `int dealloc_command (command_t *cmd)`
- `int handler_QUIT (void *arg, mc_platform_p global)`
- `int handler_HELP (void *arg, mc_platform_p global)`
- `int handler_SEND (void *arg, mc_platform_p global)`
- `int handler_PRINT_CONNECTLIST (void *arg, mc_platform_p global)`
- `int handler_PRINTLIST_MESSAGE (void *arg, mc_platform_p global)`
- `int handler_PRINTLIST_AGENTS (void *arg, mc_platform_p global)`
- `int handler_FLUSH_AGENTS (void *arg, mc_platform_p global)`
- `int handler_COMPOSE_SEND (void *arg, mc_platform_p global)`

7.9.1 Function Documentation

7.9.1.1 int cmd_prompt_Destroy (cmd_prompt_p *cmd_prompt*)

Definition at line 130 of file cmd_prompt.c.

References MC_SUCCESS.

Referenced by mc_platform_Destroy().

7.9.1.2 cmd_prompt_p cmd_prompt_Initialize (mc_platform_p *mc_platform*)

Definition at line 122 of file cmd_prompt.c.

Referenced by mc_platform_Initialize().

7.9.1.3 void cmd_prompt_Start (mc_platform_p *mc_platform*)

Definition at line 137 of file cmd_prompt.c.

References mc_platform_s::cmd_prompt, cmd_prompt_Thread(), MC_THREAD_CP, mc_platform_s::stack_size, cmd_prompt_s::thread, and THREAD_CREATE.

Referenced by mc_platform_Initialize().

7.9.1.4 void* cmd_prompt_Thread (void * *arg*)

Definition at line 169 of file cmd_prompt.c.

References command_s::args, buf, deallocate_command(), exec_command(), command_s::index, command_s::num_args, process_command(), and split_string().

Referenced by cmd_prompt_Start().

7.9.1.5 int deallocate_command (command_t * *cmd*)

Definition at line 322 of file cmd_prompt.c.

References command_s::args, and command_s::num_args.

Referenced by cmd_prompt_Thread().

7.9.1.6 int exec_command (command_t *cmd*, mc_platform_p *global*)

Definition at line 306 of file cmd_prompt.c.

References command_s::args, cmd_handlers, command_s::index, and command_s::num_args.

Referenced by cmd_prompt_Thread().

7.9.1.7 int handler_COMPOSE_SEND (void * *arg*, mc_platform_p *global*)

Definition at line 427 of file cmd_prompt.c.

References mc_platform_s::agency, command_s::args, command_descriptions, mc_platform_s::hostname, MC_AddAgent(), MC_ComposeAgentFromFile(), and command_s::num_args.

7.9.1.8 int handler_FLUSH_AGENTS (void * *arg*, mc_platform_p *global*)

Definition at line 419 of file cmd_prompt.c.

References agent_Destroy(), mc_platform_s::agent_queue, ListClearCB(), ListWRLock(), and ListWRUnlock().

7.9.1.9 int handler_HELP (void * *arg*, mc_platform_p *global*)

Definition at line 346 of file cmd_prompt.c.

References command_s::args, command_cmds, command_descriptions, and command_s::num_args.

7.9.1.10 int handler_PRINT_CONNECTLIST (void * *arg*, mc_platform_p *global*)

Definition at line 395 of file cmd_prompt.c.

References connection_Print(), mc_platform_s::connection_queue, ListForEachCB(), ListRDLock(), and ListRDUnlock().

7.9.1.11 int handler_PRINTLIST_AGENTS (void * *arg*, mc_platform_p *global*)

Definition at line 411 of file cmd_prompt.c.

References agent_Print(), mc_platform_s::agent_queue, ListForEachCB(), ListRDLock(), and ListRDUnlock().

7.9.1.12 int handler_PRINTLIST_MESSAGE (void * *arg*, mc_platform_p *global*)

Definition at line 403 of file cmd_prompt.c.

References ListForEachCB(), ListRDLock(), ListRDUnlock(), message_Print(), and mc_platform_s::message_queue.

7.9.1.13 int handler_QUIT (void * *arg*, mc_platform_p *global*)

Definition at line 337 of file cmd_prompt.c.

References COND_BROADCAST, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_cond, and mc_platform_s::quit_lock.

7.9.1.14 int handler_SEND (void * *arg*, mc_platform_p *global*)

Definition at line 384 of file cmd_prompt.c.

References command_s::args, command_descriptions, MC_SendAgentFile(), and command_s::num_args.

7.9.1.15 int process_command (command_t * *cmd*)

Definition at line 288 of file cmd_prompt.c.

References command_s::args, command_cmds, command_s::index, and command_s::num_args.

Referenced by cmd_prompt_Thread().

7.9.1.16 int split_string (char * *args*, const char * *buf*)**

Definition at line 240 of file cmd_prompt.c.

Referenced by cmd_prompt_Thread().

7.10 /home/dko/Projects/mobilec/src/connection.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/connection.h"
#include "include/mc_error.h"
#include "include/macros.h"
```

Functions

- int [connection_Destroy \(connection_p connection\)](#)
- [connection_p connection_New \(void\)](#)
- [connection_p connection_Copy \(connection_p connection\)](#)
- int [connection_Print \(connection_p connection\)](#)

7.10.1 Function Documentation

7.10.1.1 [connection_p connection_Copy \(connection_p connection\)](#)

Definition at line 80 of file connection.c.

References `connection_s::addr`, `connection_s::clientfd`, `connection_s::connect_id`, `connection_New()`, `connection_s::remote_hostname`, `connection_s::serverfd`, and `strdup`.

7.10.1.2 [int connection_Destroy \(connection_p connection\)](#)

Definition at line 48 of file connection.c.

References `connection_s::clientfd`, `MC_SUCCESS`, and `connection_s::remote_hostname`.

Referenced by `acc_connection_Thread()`, and `mc_platform_Destroy()`.

7.10.1.3 [connection_p connection_New \(void\)](#)

Definition at line 69 of file connection.c.

Referenced by `connection_Copy()`, and `listen_Thread()`.

7.10.1.4 [int connection_Print \(connection_p connection\)](#)

Definition at line 92 of file connection.c.

References `connection_s::connect_id`, and `connection_s::remote_hostname`.

Referenced by `handler_PRINT_CONNECTLIST()`.

7.11 /home/dko/Projects/mobilec/src/df.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include "config.h"
#include "include/mc_platform.h"
#include "include/df.h"
#include "../mc_list/list.h"
#include "../include/macros.h"
#include "df_request.x.h"
```

Defines

- #define REQUEST(name, string, description)

Functions

- int df_Add (struct df_s *df, struct df_node_s *node)
- int df_AddRequest (struct df_s *df, struct df_request_list_node_s *node)
- int df_Destroy (df_p df)
- df_p df_Initialize (mc_platform_p mc_platform)
- int df_ProcessRequest (struct mc_platform_s *global)
- int df_SearchForService (df_p df, const char *searchstring, char ***agent_names, char ***service_names, int **agent_ids, int *num_entries)
- void df_Start (mc_platform_p mc_platform)
- int df_request_list_node_Destroy (df_request_list_node_p node)
- df_request_list_node_p df_request_list_node_New (void)
- int df_request_list_Destroy (list_t *df_request_list)
- df_request_search_p df_request_search_New (void)
- int df_request_search_Destroy (df_request_search_p node)
- int df_node_Destroy (df_node_p df_node)
- void * df_Thread (void *arg)
- int request_handler_REGISTER (struct mc_platform_s *global, void *data)
- int request_handler_SEARCH (struct mc_platform_s *global, void *data)
- int request_handler_SUBSCRIBE (struct mc_platform_s *global, void *data)
- int request_handler_DEREGISTER (struct mc_platform_s *global, void *data)

7.11.1 Define Documentation

7.11.1.1 #define REQUEST(name, string, description)

Value:

```
if ( !strcmp(request->command, string) ) { \
    return_code = MC_SUCCESS; \
    handler_code = request_handler_##name( \
        global, \
        request->data ); \
    request_code = REQUEST_##name; \
} else
```

Referenced by acc_connection_Thread(), and acc_MessageHandlerThread().

7.11.2 Function Documentation

7.11.2.1 int df_Add (struct df_s * *df*, struct df_node_s * *node*)

Definition at line 50 of file df.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), and MC_SUCCESS.

Referenced by request_handler_REGISTER().

7.11.2.2 int df_AddRequest (struct df_s * *df*, struct df_request_list_node_s * *node*)

Definition at line 62 of file df.c.

References ListAdd(), ListWRLock(), and ListWRUnlock().

Referenced by MC_DeregisterService(), MC_RegisterService(), and MC_SearchForService().

7.11.2.3 int df_Destroy (df_p *df*)

Definition at line 75 of file df.c.

References COND_DESTROY, df_node_Destroy(), df_request_list_Destroy(), ListPop(), ListTerminate(), ListWRLock(), ListWRUnlock(), MC_SUCCESS, MUTEX_DESTROY, and MUTEX_LOCK.

Referenced by mc_platform_Destroy().

7.11.2.4 df_p df_Initialize (mc_platform_p *mc_platform*)

Definition at line 97 of file df.c.

References COND_INIT, COND_T, ListInitialize(), MUTEX_INIT, and MUTEX_T.

Referenced by mc_platform_Initialize().

7.11.2.5 int df_node_Destroy (df_node_p *df_node*)

Definition at line 372 of file df.c.

References MC_SUCCESS, and MUTEX_LOCK.

Referenced by df_Destroy().

7.11.2.6 int df_ProcessRequest (struct mc_platform_s * *global*)

Definition at line 128 of file df.c.

References `mc_platform_s::df`, `ListPop()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_EMPTY`, and `MC_ERR_INVALID`.

Referenced by `df_Thread()`.

7.11.2.7 int df_request_list_Destroy (list_t * *df_request_list*)

Definition at line 320 of file `df.c`.

References `df_request_list_node_Destroy()`, `ListPop()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, and `MC_SUCCESS`.

Referenced by `df_Destroy()`.

7.11.2.8 int df_request_list_node_Destroy (df_request_list_node_p *node*)

Definition at line 291 of file `df.c`.

References `COND_DESTROY`, `MC_SUCCESS`, and `MUTEX_DESTROY`.

Referenced by `df_request_list_Destroy()`, and `MC_SearchForService()`.

7.11.2.9 df_request_list_node_p df_request_list_node_New (void)

Definition at line 302 of file `df.c`.

References `CHECK_NULL`, `COND_INIT`, `COND_T`, `MUTEX_INIT`, and `MUTEX_T`.

Referenced by `MC_DeregisterService()`, `MC_RegisterService()`, and `MC_SearchForService()`.

7.11.2.10 int df_request_search_Destroy (df_request_search_p *node*)

Definition at line 359 of file `df.c`.

References `COND_DESTROY`, `MC_SUCCESS`, and `MUTEX_DESTROY`.

Referenced by `MC_SearchForService()`.

7.11.2.11 df_request_search_p df_request_search_New (void)

Definition at line 344 of file `df.c`.

References `CHECK_NULL`, `COND_INIT`, `COND_T`, `MUTEX_INIT`, `MUTEX_T`, and `search`.

Referenced by `MC_SearchForService()`.

7.11.2.12 int df_SearchForService (df_p *df*, const char * *searchstring*, char * *agent_names*, char *** *service_names*, int ** *agent_ids*, int * *num_entries*)**

Definition at line 175 of file `df.c`.

References `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `listNode_s::next`, `listNode_s::node_data`, and `num_services`.

Referenced by `request_handler_SEARCH()`.

7.11.2.13 void df_Start (mc_platform_p *mc_platform*)

Definition at line 260 of file df.c.

References mc_platform_s::df, df_Thread(), MC_THREAD_DF, mc_platform_s::stack_size, and THREAD_CREATE.

Referenced by mc_platform_Initialize().

7.11.2.14 void* df_Thread (void * *arg*)

Definition at line 386 of file df.c.

References COND_BROADCAST, mc_platform_s::df, df_ProcessRequest(), ListRDLock(), ListRDUnlock(), ListRDWait(), MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by df_Start().

7.11.2.15 int request_handler_DEREGISTER (struct mc_platform_s * *global*, void * *data*)

Definition at line 473 of file df.c.

References mc_platform_s::df, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, listNode_s::next, and listNode_s::node_data.

7.11.2.16 int request_handler_REGISTER (struct mc_platform_s * *global*, void * *data*)

Definition at line 443 of file df.c.

References mc_platform_s::df, and df_Add().

7.11.2.17 int request_handler_SEARCH (struct mc_platform_s * *global*, void * *data*)

Definition at line 449 of file df.c.

References mc_platform_s::df, df_SearchForService(), MC_SUCCESS, search, and SIGNAL.

7.11.2.18 int request_handler_SUBSCRIBE (struct mc_platform_s * *global*, void * *data*)

Definition at line 468 of file df.c.

7.12 /home/dko/Projects/mobilec/src/dynstring.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/dynstring.h"
```

Functions

- [dynstring_t * dynstring_New \(void\)](#)
- [int dynstring_Append \(dynstring_t *msg, const char *str\)](#)
- [int dynstring_Destroy \(dynstring_t *dynstring\)](#)

7.12.1 Function Documentation

7.12.1.1 int dynstring_Append (dynstring_t * msg, const char * str)

Definition at line 30 of file dynstring.c.

References COMPOSE_BLOCKSIZE, dynstring_s::len, dynstring_s::message, and dynstring_s::size.

Referenced by fipa_acl_Compose(), fipa_agent_identifier_Compose(), fipa_agent_identifier_set_Compose(), fipa_DateTime_Compose(), fipa_envelope_Compose_from(), fipa_number_Compose(), fipa_performative_Compose(), fipa_protocol_Compose(), fipa_string_Compose(), fipa_url_Compose(), fipa_url_sequence_Compose(), fipa_word_Compose(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

7.12.1.2 int dynstring_Destroy (dynstring_t * dynstring)

Definition at line 53 of file dynstring.c.

References dynstring_s::message.

Referenced by fipa_envelope_Compose_from(), MC_AclSend(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

7.12.1.3 dynstring_t* dynstring_New (void)

Definition at line 14 of file dynstring.c.

References COMPOSE_BLOCKSIZE, dynstring_s::len, dynstring_s::message, and dynstring_s::size.

Referenced by fipa_acl_Compose(), fipa_envelope_Compose_from(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

7.13 /home/dko/Projects/mobilec/src/fipa_acl.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <strings.h>
#include "include/fipa_acl.h"
#include "include/mc_error.h"
#include "include/macros.h"
```

Defines

- #define FREEMEM(x) if (x != NULL) free(x)

Functions

- `fipa_acl_message_t * fipa_acl_message_New (void)`
- `int fipa_acl_message_Destroy (fipa_acl_message_t *message)`
- `fipa_acl_message_t * fipa_acl_message_Copy (fipa_acl_message_t *src)`
- `fipa_message_string_t * fipa_message_string_New (void)`
- `int fipa_message_string_Destroy (fipa_message_string_t *message)`
- `fipa_message_string_t * fipa_message_string_Copy (fipa_message_string_t *src)`
- `fipa_url_sequence_t * fipa_url_sequence_New (void)`
- `int fipa_url_sequence_Destroy (fipa_url_sequence_t *sequence)`
- `fipa_url_sequence_t * fipa_url_sequence_Copy (fipa_url_sequence_t *src)`
- `fipa_agent_identifier_set_t * fipa_agent_identifier_set_New (void)`
- `int fipa_agent_identifier_set_Destroy (fipa_agent_identifier_set_t *idset)`
- `fipa_agent_identifier_set_t * fipa_agent_identifier_set_Copy (fipa_agent_identifier_set_t *src)`
- `fipa_agent_identifier_t * fipa_agent_identifier_New (void)`
- `int fipa_agent_identifier_Destroy (fipa_agent_identifier_t *id)`
- `fipa_agent_identifier_t * fipa_agent_identifier_Copy (fipa_agent_identifier_t *src)`
- `fipa_expression_t * fipa_expression_New (void)`
- `int fipa_expression_Destroy (fipa_expression_t *expr)`
- `fipa_expression_t * fipa_expression_Copy (fipa_expression_t *src)`
- `fipa_word_t * fipa_word_New (void)`
- `int fipa_word_Destroy (fipa_word_t *word)`
- `fipa_word_t * fipa_word_Copy (fipa_word_t *src)`
- `fipa_string_t * fipa_string_New (void)`
- `int fipa_string_Destroy (fipa_string_t *str)`
- `fipa_string_t * fipa_string_Copy (fipa_string_t *src)`
- `fipa_DateTime_t * fipa_DateTime_New (void)`
- `int fipa_DateTime_Destroy (fipa_DateTime_t *dt)`
- `fipa_DateTime_t * fipa_DateTime_Copy (fipa_DateTime_t *src)`
- `fipa_url_t * fipa_url_New (void)`
- `int fipa_url_Destroy (fipa_url_t *url)`

- `fipa_url_t * fipa_url_Copy (fipa_url_t *src)`
- `fipa_number_t * fipa_number_New (void)`
- `int fipa_number_Destroy (fipa_number_t *number)`
- `fipa_number_t * fipa_number_Copy (fipa_number_t *src)`
- `int fipa_acl_Parse (fipa_acl_message_p acl, fipa_message_string_p message)`
- `int fipa_message_parameter_Parse (fipa_acl_message_p acl, fipa_message_string_p message)`
- `int fipa_protocol_type_Parse (enum fipa_protocol_e *protocol, fipa_message_string_p message)`
- `int fipa_message_type_Parse (enum fipa_performative_e *performative, fipa_message_string_p message)`
- `int fipa_GetAtom (fipa_message_string_p message, char expected_atom)`
- `int fipa_word_Parse (fipa_word_t **word, fipa_message_string_p message)`
- `int fipa_CheckNextToken (const fipa_message_string_p message, const char *token)`
- `int fipa_expression_Parse (fipa_expression_t **expression, fipa_message_string_p message)`
- `int fipa_GetNextWord (char **word, const fipa_message_string_p message)`
- `int fipa_GetWholeToken (char **word, fipa_message_string_p message)`
- `int fipa_datetime_Parse (fipa_DateTime_p *datetime, fipa_message_string_p message)`
- `int fipa_string_Parse (fipa_string_p *fipa_string, fipa_message_string_p message)`
- `int fipa_agent_identifier_Parse (fipa_agent_identifier_p *aid, fipa_message_string_p message)`
- `int fipa_url_sequence_Parse (fipa_url_sequence_p *urls, fipa_message_string_p message)`
- `int fipa_url_Parse (fipa_url_p *url, fipa_message_string_p message)`
- `int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p *agent_ids, fipa_message_string_p message)`
- `int fipa_acl_Compose (dynstring_t **msg, fipa_acl_message_t *acl)`
- `int fipa_protocol_Compose (dynstring_t *msg, enum fipa_protocol_e protocol)`
- `int fipa_performative_Compose (dynstring_t *msg, enum fipa_performative_e performative)`
- `int fipa_url_sequence_Compose (dynstring_t *msg, fipa_url_sequence_t *urls)`
- `int fipa_agent_identifier_set_Compose (dynstring_t *msg, fipa_agent_identifier_set_t *ids)`
- `int fipa_agent_identifier_Compose (dynstring_t *msg, fipa_agent_identifier_t *id)`
- `int fipa_expression_Compose (dynstring_t *msg, fipa_expression_t *expr)`
- `int fipa_word_Compose (dynstring_t *msg, fipa_word_t *word)`
- `int fipa_string_Compose (dynstring_t *msg, fipa_string_t *string)`
- `int fipa_DateTime_Compose (dynstring_t *msg, fipa_DateTime_t *date)`
- `int fipa_url_Compose (dynstring_t *msg, fipa_url_t *url)`
- `int fipa_number_Compose (dynstring_t *msg, fipa_number_t *number)`
- `struct fipa_acl_message_s * fipa_Reply (struct fipa_acl_message_s *acl)`

7.13.1 Define Documentation

7.13.1.1 #define FREEMEM(x) if (x != NULL) free(x)

Definition at line 53 of file fipa_acl.c.

Referenced by fipa_expression_Destroy().

7.13.2 Function Documentation

7.13.2.1 int fipa_acl_Compose (dynstring_t ** msg, fipa_acl_message_t * acl)

Definition at line 1233 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_acl_message_s::conversation_id, dynstring_Append(), dynstring_New(), fipa_acl_message_s::encoding, fipa_agent_identifier_Compose(), fipa_agent_identifier_set_Compose(), fipa_DateTime_Compose(), fipa_expression_Compose(), fipa_performative_Compose(), fipa_protocol_Compose(), FIPA_PROTOCOL_NONE, fipa_string_Compose(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, fipa_acl_message_s::ontology, fipa_acl_message_s::performative, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by MC_AclSend().

7.13.2.2 fipa_acl_message_t* fipa_acl_message_Copy (fipa_acl_message_t * src)

Definition at line 86 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_acl_message_s::conversation_id, fipa_acl_message_s::encoding, fipa_acl_message_New(), fipa_agent_identifier_Copy(), fipa_agent_identifier_set_Copy(), fipa_DateTime_Copy(), fipa_expression_Copy(), fipa_string_Copy(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, fipa_acl_message_s::ontology, fipa_acl_message_s::performative, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by MC_AclSend().

7.13.2.3 int fipa_acl_message_Destroy (fipa_acl_message_t * message)

Definition at line 65 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_acl_message_s::conversation_id, fipa_acl_message_s::encoding, fipa_agent_identifier_Destroy(), fipa_agent_identifier_set_Destroy(), fipa_DateTime_Destroy(), fipa_expression_Destroy(), fipa_string_Destroy(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, fipa_acl_message_s::ontology, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by acc_connection_Thread(), agent_Destroy(), and MC_AclDestroy().

7.13.2.4 fipa_acl_message_t* fipa_acl_message_New (void)

Definition at line 57 of file fipa_acl.c.

Referenced by acc_connection_Thread(), fipa_acl_message_Copy(), fipa_Reply(), and MC_AclNew().

7.13.2.5 int fipa_acl_Parse (fipa_acl_message_p acl, fipa_message_string_p message)

Definition at line 465 of file fipa_acl.c.

References fipa_GetAtom(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), MC_ERR_PARSE, and fipa_acl_message_s::performative.

Referenced by acc_connection_Thread().

7.13.2.6 int fipa_agent_identifier_Compose (dynstring_t * msg, fipa_agent_identifier_t * id)

Definition at line 1447 of file fipa_acl.c.

References fipa_agent_identifier_s::addresses, dynstring_Append(), fipa_agent_identifier_set_Compose(), fipa_url_sequence_Compose(), fipa_agent_identifier_s::name, fipa_agent_identifier_set_s::num, fipa_url_sequence_s::num, and fipa_agent_identifier_s::resolvers.

Referenced by fipa_acl_Compose(), and fipa_agent_identifier_set_Compose().

7.13.2.7 fipa_agent_identifier_t* fipa_agent_identifier_Copy (fipa_agent_identifier_t * src)

Definition at line 236 of file fipa_acl.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_New(), fipa_agent_identifier_set_Copy(), fipa_url_sequence_Copy(), fipa_agent_identifier_s::name, fipa_agent_identifier_s::resolvers, and strdup.

Referenced by fipa_acl_message_Copy(), fipa_acl_Param_Copy(), fipa_agent_identifier_set_Copy(), and fipa_Reply().

7.13.2.8 int fipa_agent_identifier_Destroy (fipa_agent_identifier_t * id)

Definition at line 224 of file fipa_acl.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_set_Destroy(), fipa_url_sequence_Destroy(), fipa_agent_identifier_s::name, and fipa_agent_identifier_s::resolvers.

Referenced by fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), fipa_agent_identifier_set_Destroy(), and MC_AclSetSender().

7.13.2.9 fipa_agent_identifier_t* fipa_agent_identifier_New (void)

Definition at line 216 of file fipa_acl.c.

Referenced by fipa_agent_identifier_Copy(), fipa_envelope_ParseAgentIdentifier(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.13.2.10 int fipa_agent_identifier_Parse (fipa_agent_identifier_p * aid, fipa_message_string_p message)

Definition at line 1033 of file fipa_acl.c.

References CHECK_NULL, fipa_word_s::content, fipa_agent_identifier_set_Parse(), fipa_GetAtom(), fipa_url_sequence_Parse(), fipa_word_Destroy(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_agent_identifier_set_Parse(), and fipa_message_parameter_Parse().

7.13.2.11 int fipa_agent_identifier_set_Compose (dynstring_t * msg, fipa_agent_identifier_set_t * ids)

Definition at line 1434 of file fipa_acl.c.

References dynstring_Append(), fipa_agent_identifier_Compose(), fipa_agent_identifier_set_s::fipa_agent_identifiers, and fipa_agent_identifier_set_s::num.

Referenced by fipa_acl_Compose(), and fipa_agent_identifier_Compose().

7.13.2.12 fipa_agent_identifier_set_t* fipa_agent_identifier_set_Copy (fipa_agent_identifier_set_t * src)

Definition at line 195 of file fipa_acl.c.

References fipa_agent_identifier_Copy(), fipa_agent_identifier_Set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_agent_identifier_set_s::num, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_acl_message_Copy(), fipa_acl_Param_Copy(), fipa_agent_identifier_Copy(), and fipa_Reply().

7.13.2.13 int fipa_agent_identifier_set_Destroy (fipa_agent_identifier_set_t * idset)

Definition at line 183 of file fipa_acl.c.

References fipa_agent_identifier_Destroy(), fipa_agent_identifier_set_s::fipa_agent_identifiers, and fipa_agent_identifier_set_s::num.

Referenced by fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_agent_identifier_Destroy().

7.13.2.14 fipa_agent_identifier_set_t* fipa_agent_identifier_set_New (void)

Definition at line 175 of file fipa_acl.c.

Referenced by fipa_agent_identifier_set_Copy(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), fipa_Reply(), MC_AclAddReceiver(), and MC_AclAddReplyTo().

7.13.2.15 int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p * agent_ids, fipa_message_string_p message)

Definition at line 1192 of file fipa_acl.c.

References fipa_word_s::content, fipa_agent_identifier_Parse(), fipa_GetAtom(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_agent_identifier_Parse(), and fipa_message_parameter_Parse().

7.13.2.16 int fipa_CheckNextToken (const fipa_message_string_p message, const char * token)

Definition at line 695 of file fipa_acl.c.

References fipa_message_string_s::parse.

Referenced by fipa_expression_Parse().

7.13.2.17 int fipa_DateTime_Compose (dynstring_t * msg, fipa_DateTime_t * date)

Definition at line 1520 of file fipa_acl.c.

References buf, fipa_DateTime_s::day, dynstring_Append(), fipa_DateTime_s::hour, fipa_DateTime_s::millisecond, fipa_DateTime_s::minute, fipa_DateTime_s::month, fipa_DateTime_s::second, fipa_DateTime_s::sign, and fipa_DateTime_s::year.

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

7.13.2.18 fipa_DateTime_t* fipa_DateTime_Copy (fipa_DateTime_t * src)

Definition at line 399 of file fipa_acl.c.

References fipa_DateTime_New().

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_message_Copy(), fipa_acl_Param_Copy(), and fipa_expression_Copy().

7.13.2.19 int fipa_DateTime_Destroy (fipa_DateTime_t * dt)

Definition at line 392 of file fipa_acl.c.

Referenced by fipa_acl_envelope_Received_Destroy(), fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_expression_Destroy().

7.13.2.20 fipa_DateTime_t* fipa_DateTime_New (void)

Definition at line 384 of file fipa_acl.c.

Referenced by fipa_DateTime_Copy().

7.13.2.21 int fipa_datetime_Parse (fipa_DateTime_p * datetime, fipa_message_string_p message)

Definition at line 850 of file fipa_acl.c.

References buf, fipa_GetWholeToken(), MC_ERR_PARSE, MC_SUCCESS, fipa_message_string_s::parse, and fipa_DateTime_s::sign.

Referenced by fipa_envelope_HandleDate(), fipa_envelope_HandleReceived(), fipa_expression_Parse(), and fipa_message_parameter_Parse().

7.13.2.22 int fipa_expression_Compose (dynstring_t * msg, fipa_expression_t * expr)

Definition at line 1473 of file fipa_acl.c.

References fipa_expression_s::content, fipa_expression_s::content_u::datetime, fipa_expression_s::content_u::expression, fipa_DateTime_Compose(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_NUMBER, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Compose(), fipa_number_Compose(), fipa_string_Compose(), fipa_word_Compose(), MC_ERR_PARSE, fipa_expression_s::content_u::number, fipa_expression_s::content_u::string, fipa_expression_s::type, and fipa_expression_s::content_u::word.

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

7.13.2.23 fipa_expression_t* fipa_expression_Copy (fipa_expression_t * src)

Definition at line 287 of file fipa_acl.c.

References fipa_expression_s::content, fipa_expression_s::content_u::datetime, fipa_expression_s::content_u::expression, fipa_DateTime_Copy(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_NUMBER, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Copy(), fipa_expression_Destroy(), fipa_expression_New(), fipa_number_Copy(), fipa_string_Copy(), fipa_word_Copy(), fipa_expression_s::content_u::number, fipa_expression_s::content_u::string, fipa_expression_s::type, and fipa_expression_s::content_u::word.

Referenced by fipa_acl_message_Copy(), fipa_expression_Copy(), and fipa_Reply().

7.13.2.24 int fipa_expression_Destroy (fipa_expression_t * expr)

Definition at line 256 of file fipa_acl.c.

References fipa_expression_s::content, fipa_expression_s::content_u::datetime, fipa_expression_s::content_u::expression, fipa_DateTime_Destroy(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_NUMBER, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Destroy(), fipa_number_Destroy(), fipa_string_Destroy(), fipa_word_Destroy(), FREEMEM, fipa_expression_s::content_u::number, fipa_expression_s::content_u::string, fipa_expression_s::type, and fipa_expression_s::content_u::word.

Referenced by fipa_acl_message_Destroy(), fipa_expression_Copy(), and fipa_expression_Destroy().

7.13.2.25 fipa_expression_t* fipa_expression_New (void)

Definition at line 248 of file fipa_acl.c.

Referenced by fipa_expression_Copy(), and MC_AclSetConversationID().

7.13.2.26 int fipa_expression_Parse (fipa_expression_t ** expression, fipa_message_string_p message)

Definition at line 714 of file fipa_acl.c.

References fipa_CheckNextToken(), fipa_datetime_Parse(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Parse(), fipa_GetAtom(), fipa_string_Parse(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_expression_s::type.

Referenced by fipa_expression_Parse(), and fipa_message_parameter_Parse().

7.13.2.27 int fipa_GetAtom (fipa_message_string_p message, char expected_atom)

Definition at line 630 of file fipa_acl.c.

References MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_acl_Parse(), fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_expression_Parse(), fipa_message_parameter_Parse(), fipa_string_Parse(), and fipa_url_sequence_Parse().

7.13.2.28 int fipa_GetNextWord (char ** word, const fipa_message_string_p message)

Definition at line 765 of file fipa_acl.c.

References ERR, MC_SUCCESS, and fipa_message_string_s::parse.

7.13.2.29 int fipa_GetWholeToken (char ** *word*, fipa_message_string_p *message*)

Definition at line 813 of file fipa_acl.c.

References MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_datetime_Parse().

7.13.2.30 int fipa_message_parameter_Parse (fipa_acl_message_p *acl*, fipa_message_string_p *message*)

Definition at line 485 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_word_s::content, fipa_acl_message_s::conversation_id, fipa_acl_message_s::encoding, fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_datetime_Parse(), fipa_expression_Parse(), fipa_GetAtom(), fipa_protocol_type_Parse(), fipa_string_Parse(), fipa_word_Destroy(), fipa_word_Parse(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, MC_ERR_PARSE, fipa_acl_message_s::ontology, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by fipa_acl_Parse().

7.13.2.31 fipa_message_string_t* fipa_message_string_Copy (fipa_message_string_t * *src*)

Definition at line 128 of file fipa_acl.c.

References fipa_message_string_s::message, fipa_message_string_s::parse, and strdup.

7.13.2.32 int fipa_message_string_Destroy (fipa_message_string_t * *message*)

Definition at line 118 of file fipa_acl.c.

References fipa_message_string_s::message.

Referenced by acc_connection_Thread().

7.13.2.33 fipa_message_string_t* fipa_message_string_New (void)

Definition at line 110 of file fipa_acl.c.

Referenced by acc_connection_Thread().

7.13.2.34 int fipa_message_type_Parse (enum fipa_performative_e * *performative*, fipa_message_string_p *message*)

Definition at line 568 of file fipa_acl.c.

References fipa_word_s::content, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE, FIPA_CALL_FOR_PROPOSAL, FIPA_CANCEL, FIPA_CONFIRM, FIPA_DISCONFIRM, FIPA_FAILURE,

FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF, FIPA_NOT_UNDERSTOOD, FIPA_PROPAGATE, FIPA_PROPOSE, FIPA_PROXY, FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL, FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_SUBSCRIBE, fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by fipa_acl_Parse().

7.13.2.35 int fipa_number_Compose (dynstring_t * msg, fipa_number_t * number)

Definition at line 1548 of file fipa_acl.c.

References dynstring_Append(), and fipa_number_s::str.

Referenced by fipa_expression_Compose().

7.13.2.36 fipa_number_t* fipa_number_Copy (fipa_number_t * src)

Definition at line 455 of file fipa_acl.c.

References fipa_number_New(), fipa_number_s::str, and strdup.

Referenced by fipa_expression_Copy().

7.13.2.37 int fipa_number_Destroy (fipa_number_t * number)

Definition at line 445 of file fipa_acl.c.

References fipa_number_s::str.

Referenced by fipa_expression_Destroy().

7.13.2.38 fipa_number_t* fipa_number_New (void)

Definition at line 437 of file fipa_acl.c.

Referenced by fipa_number_Copy().

7.13.2.39 int fipa_performative_Compose (dynstring_t * msg, enum fipa_performative_e performative)

Definition at line 1346 of file fipa_acl.c.

References dynstring_Append(), FIPA_ACCEPT_PROPOSAL, FIPA_AGREE, FIPA_CALL_FOR_PROPOSAL, FIPA_CANCEL, FIPA_CONFIRM, FIPA_DISCONFIRM, FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF, FIPA_NOT_UNDERSTOOD, FIPA_PROPAGATE, FIPA_PROPOSE, FIPA_PROXY, FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL, FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_SUBSCRIBE, and MC_ERR_PARSE.

Referenced by fipa_acl_Compose().

7.13.2.40 int fipa_protocol_Compose (dynstring_t * msg, enum fipa_protocol_e protocol)

Definition at line 1303 of file fipa_acl.c.

References dynstring_Append(), FIPA_PROTOCOL_BROKERING, FIPA_PROTOCOL_CONTRACT_NET, FIPA_PROTOCOL_DUTCH_AUCTION, FIPA_PROTOCOL_ENGLISH_AUCTION, FIPA_PROTOCOL_ITERATED_CONTRACT_NET, FIPA_PROTOCOL_PROPOSE, FIPA_PROTOCOL_QUERY, FIPA_PROTOCOL_RECRUITING, FIPA_PROTOCOL_REQUEST, FIPA_PROTOCOL_REQUEST_WHEN, FIPA_PROTOCOL_SUBSCRIBE, and MC_ERR_PARSE.

Referenced by fipa_acl_Compose().

7.13.2.41 int fipa_protocol_type_Parse (enum fipa_protocol_e * protocol, fipa_message_string_p message)

Definition at line 528 of file fipa_acl.c.

References fipa_word_s::content, FIPA_PROTOCOL_BROKERING, FIPA_PROTOCOL_CONTRACT_NET, FIPA_PROTOCOL_DUTCH_AUCTION, FIPA_PROTOCOL_ENGLISH_AUCTION, FIPA_PROTOCOL_ITERATED_CONTRACT_NET, FIPA_PROTOCOL_PROPOSE, FIPA_PROTOCOL_QUERY, FIPA_PROTOCOL_RECRUITING, FIPA_PROTOCOL_REQUEST, FIPA_PROTOCOL_REQUEST_WHEN, FIPA_PROTOCOL_SUBSCRIBE, fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by fipa_message_parameter_Parse().

7.13.2.42 struct fipa_acl_message_s* fipa_Reply (struct fipa_acl_message_s * acl) [read]

Definition at line 1556 of file fipa_acl.c.

References fipa_acl_message_s::conversation_id, fipa_acl_message_New(), fipa_agent_identifier_Copy(), fipa_agent_identifier_set_Copy(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_expression_Copy(), fipa_agent_identifier_set_s::num, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_to, fipa_agent_identifier_set_s::retain_order, and fipa_acl_message_s::sender.

Referenced by MC_AclReply().

7.13.2.43 int fipa_string_Compose (dynstring_t * msg, fipa_string_t * string)

Definition at line 1511 of file fipa_acl.c.

References fipa_string_s::content, and dynstring_Append().

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

7.13.2.44 fipa_string_t* fipa_string_Copy (fipa_string_t * src)

Definition at line 374 of file fipa_acl.c.

References fipa_string_s::content, fipa_string_New(), and strdup.

Referenced by fipa_acl_message_Copy(), and fipa_expression_Copy().

7.13.2.45 int fipa_string_Destroy (fipa_string_t * str)

Definition at line 364 of file fipa_acl.c.

References fipa_string_s::content.

Referenced by fipa_acl_message_Destroy(), fipa_expression_Destroy(), and MC_AclSetContent().

7.13.2.46 **fipa_string_t* fipa_string_New (void)**

Definition at line 356 of file fipa_acl.c.

Referenced by fipa_string_Copy(), MC_AclSetContent(), and MC_AclSetConversationID().

7.13.2.47 **int fipa_string_Parse (fipa_string_p **fipa_string*, fipa_message_string_p *message*)**

Definition at line 988 of file fipa_acl.c.

References fipa_string_s::content, fipa_GetAtom(), MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_expression_Parse(), and fipa_message_parameter_Parse().

7.13.2.48 **int fipa_url_Compose (dynstring_t **msg*, fipa_url_t **url*)**

Definition at line 1540 of file fipa_acl.c.

References dynstring_Append(), and fipa_url_s::str.

Referenced by fipa_url_sequence_Compose().

7.13.2.49 **fipa_url_t* fipa_url_Copy (fipa_url_t **src*)**

Definition at line 427 of file fipa_acl.c.

References fipa_url_New(), fipa_url_s::str, and strdup.

Referenced by fipa_acl_envelope_Received_Copy(), and fipa_url_sequence_Copy().

7.13.2.50 **int fipa_url_Destroy (fipa_url_t **url*)**

Definition at line 417 of file fipa_acl.c.

References fipa_url_s::str.

Referenced by fipa_acl_envelope_Received_Destroy(), and fipa_url_sequence_Destroy().

7.13.2.51 **fipa_url_t* fipa_url_New (void)**

Definition at line 409 of file fipa_acl.c.

Referenced by fipa_envelope_HandleReceived(), fipa_envelope_ParseAddresses(), fipa_url_Copy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.13.2.52 **int fipa_url_Parse (fipa_url_p **url*, fipa_message_string_p *message*)**

Definition at line 1172 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_Destroy(), fipa_word_Parse(), and strdup.

Referenced by fipa_url_sequence_Parse().

7.13.2.53 int fipa_url_sequence_Compose (dynstring_t * msg, fipa_url_sequence_t * urls)

Definition at line 1421 of file fipa_acl.c.

References dynstring_Append(), fipa_url_Compose(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Compose().

7.13.2.54 fipa_url_sequence_t* fipa_url_sequence_Copy (fipa_url_sequence_t * src)

Definition at line 159 of file fipa_acl.c.

References fipa_url_Copy(), fipa_url_sequence_New(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Copy().

7.13.2.55 int fipa_url_sequence_Destroy (fipa_url_sequence_t * sequence)

Definition at line 147 of file fipa_acl.c.

References fipa_url_Destroy(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Destroy().

7.13.2.56 fipa_url_sequence_t* fipa_url_sequence_New (void)

Definition at line 139 of file fipa_acl.c.

Referenced by fipa_url_sequence_Copy(), fipa_url_sequence_Parse(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.13.2.57 int fipa_url_sequence_Parse (fipa_url_sequence_p * urls, fipa_message_string_p message)

Definition at line 1140 of file fipa_acl.c.

References fipa_word_s::content, fipa_GetAtom(), fipa_url_Parse(), fipa_url_sequence_New(), fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by fipa_agent_identifier_Parse().

7.13.2.58 int fipa_word_Compose (dynstring_t * msg, fipa_word_t * word)

Definition at line 1503 of file fipa_acl.c.

References fipa_word_s::content, and dynstring_Append().

Referenced by fipa_expression_Compose().

7.13.2.59 fipa_word_t* fipa_word_Copy (fipa_word_t * src)

Definition at line 346 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_New(), and strdup.

Referenced by fipa_expression_Copy().

7.13.2.60 int fipa_word_Destroy (fipa_word_t * *word*)

Definition at line 336 of file fipa_acl.c.

References fipa_word_s::content.

Referenced by fipa_agent_identifier_Parse(), fipa_expression_Destroy(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), fipa_protocol_type_Parse(), fipa_url_Parse(), and fipa_url_sequence_Parse().

7.13.2.61 fipa_word_t* fipa_word_New (void)

Definition at line 328 of file fipa_acl.c.

Referenced by fipa_word_Copy().

7.13.2.62 int fipa_word_Parse (fipa_word_t ** *word*, fipa_message_string_p *message*)

Definition at line 653 of file fipa_acl.c.

References CHECK_NULL, MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_expression_Parse(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), fipa_protocol_type_Parse(), fipa_url_Parse(), and fipa_url_sequence_Parse().

7.14 /home/dko/Projects/mobilec/src/fipa_envelope.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <mxml.h>
#include <time.h>
#include "include/fipa_acl_envelope.h"
#include "include/mc_error.h"
#include "include/mc_platform.h"
```

Functions

- [fipa_acl_envelope_Received_t * fipa_acl_envelope_Received_New \(void\)](#)
- [int fipa_acl_envelope_Received_Destroy \(fipa_acl_envelope_Received_t *received\)](#)
- [fipa_acl_envelope_Received_t * fipa_acl_envelope_Received_Copy \(fipa_acl_envelope_Received_t *received\)](#)
- [fipa_acl_Param_t * fipa_acl_Param_New \(void\)](#)
- [int fipa_acl_Param_Destroy \(fipa_acl_Param_t *param\)](#)
- [fipa_acl_Param_t * fipa_acl_Param_Copy \(fipa_acl_Param_t *param\)](#)
- [fipa_acl_envelope_t * fipa_acl_envelope_New \(void\)](#)
- [int fipa_acl_envelope_Destroy \(fipa_acl_envelope_t *envelope\)](#)
- [fipa_acl_envelope_t * fipa_acl_envelope_Copy \(fipa_acl_envelope_t *envelope\)](#)
- [int fipa_envelope_Parse \(struct fipa_acl_envelope_s *envelope, const char *message\)](#)
- [int fipa_envelope_HandleEnvelope \(struct fipa_acl_envelope_s *envelope, mxml_node_t *node\)](#)
- [int fipa_envelope_HandleParams \(struct fipa_acl_envelope_s *envelope, mxml_node_t *node\)](#)
- [int fipa_envelope_HandleTo \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_HandleFrom \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_HandleComments \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_HandleAclRepresentation \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_HandlePayloadLength \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_HandlePayloadEncoding \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_HandleDate \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_HandleIntendedReceiver \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_HandleReceived \(struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param\)](#)
- [int fipa_envelope_ParseAgentIdentifier \(struct fipa_agent_identifier_s **aid, mxml_node_t *agent_identifier_node\)](#)
- [int fipa_envelope_ParseAddresses \(struct fipa_agent_identifier_s *aid, mxml_node_t *addresses_node\)](#)

- int `fipa_envelope_ParseResolvers` (struct `fipa_agent_identifier_s` *aid, `mxml_node_t` *resolvers_node)
- char * `fipa_envelope_Compose` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_envelope` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_params` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_to` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_from` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_acl_representation` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_payload_encoding` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_date` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_intended_receiver` (`fipa_acl_message_t` *fipa_acl)

7.14.1 Function Documentation

7.14.1.1 `fipa_acl_envelope_t*` `fipa_acl_envelope_Copy` (`fipa_acl_envelope_t` * *envelope*)

Definition at line 150 of file fipa_envelope.c.

References `fipa_acl_envelope_New()`, `fipa_acl_Param_Copy()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

7.14.1.2 int `fipa_acl_envelope_Destroy` (`fipa_acl_envelope_t` * *envelope*)

Definition at line 137 of file fipa_envelope.c.

References `fipa_acl_Param_Destroy()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

Referenced by `acc_connection_Thread()`.

7.14.1.3 `fipa_acl_envelope_t*` `fipa_acl_envelope_New` (`void`)

Definition at line 129 of file fipa_envelope.c.

Referenced by `acc_connection_Thread()`, and `fipa_acl_envelope_Copy()`.

7.14.1.4 `fipa_acl_envelope_Received_t*` `fipa_acl_envelope_Received_Copy` (`fipa_acl_envelope_Received_t` * *received*)

Definition at line 69 of file fipa_envelope.c.

References `fipa_acl_envelope_Received_New()`, `fipa_DateTime_Copy()`, `fipa_url_Copy()`, `fipa_acl_envelope_Received_s::received_by`, `fipa_acl_envelope_Received_s::received_date`, `fipa_acl_envelope_Received_s::received_from`, `fipa_acl_envelope_Received_s::received_id`, `fipa_acl_envelope_Received_s::received_via`, and `strdup`.

Referenced by `fipa_acl_Param_Copy()`.

7.14.1.5 int `fipa_acl_envelope_Received_Destroy` (`fipa_acl_envelope_Received_t` * *received*)

Definition at line 57 of file fipa_envelope.c.

References `fipa_DateTime_Destroy()`, `fipa_url_Destroy()`, `fipa_acl_envelope_Received_s::received_by`, `fipa_acl_envelope_Received_s::received_date`, `fipa_acl_envelope_Received_s::received_from`, `fipa_acl_envelope_Received_s::received_id`, and `fipa_acl_envelope_Received_s::received_via`.

Referenced by `fipa_acl_Param_Destroy()`.

7.14.1.6 `fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_New (void)`

Definition at line 48 of file `fipa_envelope.c`.

Referenced by `fipa_acl_envelope_Received_Copy()`, and `fipa_envelope_HandleReceived()`.

7.14.1.7 `fipa_acl_Param_t* fipa_acl_Param_Copy (fipa_acl_Param_t *param)`

Definition at line 110 of file `fipa_envelope.c`.

References `fipa_acl_Param_s::acl_representation`, `fipa_acl_Param_s::comments`, `fipa_acl_Param_s::date`, `fipa_acl_envelope_Received_Copy()`, `fipa_acl_Param_New()`, `fipa_agent_identifier_Copy()`, `fipa_agent_identifier_set_Copy()`, `fipa_DateTime_Copy()`, `fipa_acl_Param_s::from`, `fipa_acl_Param_s::intended_receiver`, `fipa_acl_Param_s::payload_encoding`, `fipa_acl_Param_s::payload_length`, `fipa_acl_Param_s::received`, `strdup`, and `fipa_acl_Param_s::to`.

Referenced by `fipa_acl_envelope_Copy()`.

7.14.1.8 `int fipa_acl_Param_Destroy (fipa_acl_Param_t *param)`

Definition at line 93 of file `fipa_envelope.c`.

References `fipa_acl_Param_s::acl_representation`, `fipa_acl_Param_s::comments`, `fipa_acl_Param_s::date`, `fipa_acl_envelope_Received_Destroy()`, `fipa_agent_identifier_Destroy()`, `fipa_agent_identifier_set_Destroy()`, `fipa_DateTime_Destroy()`, `fipa_acl_Param_s::from`, `fipa_acl_Param_s::intended_receiver`, `fipa_acl_Param_s::payload_encoding`, `fipa_acl_Param_s::payload_length`, `fipa_acl_Param_s::received`, and `fipa_acl_Param_s::to`.

Referenced by `fipa_acl_envelope_Destroy()`.

7.14.1.9 `fipa_acl_Param_t* fipa_acl_Param_New (void)`

Definition at line 85 of file `fipa_envelope.c`.

Referenced by `fipa_acl_Param_Copy()`, and `fipa_envelope_HandleTo()`.

7.14.1.10 `char* fipa_envelope_Compose (fipa_acl_message_t *fipa_acl)`

Definition at line 869 of file `fipa_envelope.c`.

References `fipa_envelope_Compose_envelope()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmlAdd()`, `mxmlDelete()`, `mxmlLoadString()`, and `mxmlSaveAllocString()`.

Referenced by `MC_AclSend()`.

**7.14.1.11 mxml_node_t* fipa_envelope_Compose_acl_representation (fipa_acl_message_t *
fipa_acl)**

Definition at line 1089 of file fipa_envelope.c.

References mxmNewElement(), and mxmNewText().

Referenced by fipa_envelope_Compose_params().

7.14.1.12 mxml_node_t* fipa_envelope_Compose_date (fipa_acl_message_t **fipa_acl*)

Definition at line 1117 of file fipa_envelope.c.

References buf, mxmNewElement(), and mxmNewText().

Referenced by fipa_envelope_Compose_params().

7.14.1.13 mxml_node_t* fipa_envelope_Compose_envelope (fipa_acl_message_t **fipa_acl*)

Definition at line 894 of file fipa_envelope.c.

References fipa_envelope_Compose_params(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmAdd(), and mxmNewElement().

Referenced by fipa_envelope_Compose().

7.14.1.14 mxml_node_t* fipa_envelope_Compose_from (fipa_acl_message_t **fipa_acl*)

Definition at line 1021 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, buf, dynstring_Append(), dynstring_Destroy(), dynstring_New(), g_mc_platform, mc_platform_s::hostname, dynstring_s::message, mxmNewElement(), mxmNewText(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, mc_platform_s::port, fipa_acl_message_s::sender, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose_params().

**7.14.1.15 mxml_node_t* fipa_envelope_Compose_intended_receiver (fipa_acl_message_t *
fipa_acl)**

Definition at line 1146 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_set_s::fipa_agent_identifiers, mxmNewElement(), mxmNewText(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_acl_message_s::receiver, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose_params().

7.14.1.16 mxml_node_t* fipa_envelope_Compose_params (fipa_acl_message_t **fipa_acl*)

Definition at line 914 of file fipa_envelope.c.

References fipa_envelope_Compose_acl_representation(), fipa_envelope_Compose_date(), fipa_envelope_Compose_from(), fipa_envelope_Compose_intended_receiver(), fipa_envelope_Compose_payload_encoding(), fipa_envelope_Compose_to(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmAdd(), mxmElementSetAttr(), and mxmNewElement().

Referenced by `fipa_envelope_Compose__envelope()`.

7.14.1.17 `mxml_node_t* fipa_envelope_Compose_payload_encoding (fipa_acl_message_t * fipa_acl)`

Definition at line 1103 of file `fipa_envelope.c`.

References `mxmlNewElement()`, and `mxmlNewText()`.

Referenced by `fipa_envelope_Compose_params()`.

7.14.1.18 `mxml_node_t* fipa_envelope_Compose_to (fipa_acl_message_t *fipa_acl)`

Definition at line 975 of file `fipa_envelope.c`.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `mxmlNewElement()`, `mxmlNewText()`, `fipa_agent_identifier_s::name`, `fipa_url_sequence_s::num`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::receiver`, `fipa_url_s::str`, and `fipa_url_sequence_s::urls`.

Referenced by `fipa_envelope_Compose_params()`.

7.14.1.19 `int fipa_envelope_HandleAclRepresentation (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 381 of file `fipa_envelope.c`.

References `fipa_acl_Param_s::acl_representation`, `mxml_node_s::child`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.20 `int fipa_envelope_HandleComments (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 357 of file `fipa_envelope.c`.

References `mxml_node_s::child`, `fipa_acl_Param_s::comments`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.21 `int fipa_envelope_HandleDate (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 452 of file `fipa_envelope.c`.

References `mxml_node_s::child`, `fipa_acl_Param_s::date`, `fipa_datetime_Parse()`, `MC_ERR_PARSE`, `fipa_message_string_s::message`, `MXML_DESCEND_FIRST`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `fipa_message_string_s::parse`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.22 int fipa_envelope_HandleEnvelope (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *node*)

Definition at line 178 of file fipa_envelope.c.

References fipa_envelope_HandleParams(), MC_ERR_PARSE, MXML_DESCEND_FIRST, and mxmlFindElement().

Referenced by fipa_envelope_Parse().

7.14.1.23 int fipa_envelope_HandleFrom (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 328 of file fipa_envelope.c.

References fipa_envelope_ParseAgentIdentifier(), fipa_acl_Param_s::from, MC_ERR_PARSE, MXML_DESCEND_FIRST, mxmlFindElement(), and fipa_acl_envelope_s::params.

Referenced by fipa_envelope_HandleParams().

7.14.1.24 int fipa_envelope_HandleIntendedReceiver (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 482 of file fipa_envelope.c.

References fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), fipa_acl_Param_s::intended_receiver, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::params, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_envelope_HandleParams().

7.14.1.25 int fipa_envelope_HandleParams (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *node*)

Definition at line 198 of file fipa_envelope.c.

References buf, fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_HandleReceived(), fipa_envelope_HandleTo(), MC_ERR_PARSE, MXML_DESCEND_FIRST, mxmlFindElement(), fipa_acl_envelope_s::num_params, and fipa_acl_envelope_s::params.

Referenced by fipa_envelope_HandleEnvelope().

7.14.1.26 int fipa_envelope_HandlePayloadEncoding (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 428 of file fipa_envelope.c.

References mxml_node_s::child, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, fipa_acl_Param_s::payload_encoding, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

7.14.1.27 int fipa_envelope_HandlePayloadLength (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)

Definition at line 405 of file fipa_envelope.c.

References `mxml_node_s::child`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `fipa_acl_Param_s::payload_length`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.28 int fipa_envelope_HandleReceived (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)

Definition at line 560 of file fipa_envelope.c.

References `fipa_acl_envelope_Received_New()`, `fipa_datetime_Parse()`, `fipa_url_New()`, `MC_ERR_PARSE`, `fipa_message_string_s::message`, `MXML_DESCEND_FIRST`, `mxmlElementGetAttr()`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `fipa_message_string_s::parse`, `fipa_acl_Param_s::received`, `fipa_acl_envelope_Received_s::received_by`, `fipa_acl_envelope_Received_s::received_date`, `fipa_acl_envelope_Received_s::received_from`, `fipa_acl_envelope_Received_s::received_id`, `fipa_acl_envelope_Received_s::received_via`, and `fipa_url_s::str`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.29 int fipa_envelope_HandleTo (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)

Definition at line 250 of file fipa_envelope.c.

References `fipa_acl_Param_New()`, `fipa_agent_identifier_set_New()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_envelope_ParseAgentIdentifier()`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_NO_DESCEND`, `mxmlFindElement()`, `fipa_agent_identifier_set_s::num`, `fipa_acl_envelope_s::params`, `fipa_agent_identifier_set_s::retain_order`, and `fipa_acl_Param_s::to`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.30 int fipa_envelope_Parse (struct fipa_acl_envelope_s * envelope, const char * message)

Definition at line 165 of file fipa_envelope.c.

References `fipa_envelope_HandleEnvelope()`, `MXML_NO_CALLBACK`, `mxmlDelete()`, and `mxmlLoadString()`.

Referenced by `acc_connection_Thread()`.

7.14.1.31 int fipa_envelope_ParseAddresses (struct fipa_agent_identifier_s * aid, mxml_node_t * addresses_node)

Definition at line 737 of file fipa_envelope.c.

References `fipa_agent_identifier_s::addresses`, `mxml_node_s::child`, `fipa_url_New()`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_NO_DESCEND`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_url_sequence_s::num`, `fipa_url_s::str`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, `fipa_url_sequence_s::urls`, and `mxml_node_s::value`.

Referenced by fipa_envelope_ParseAgentIdentifier().

**7.14.1.32 int fipa_envelope_ParseAgentIdentifier (struct fipa_agent_identifier_s ** aid,
mxml_node_t * agent_identifier_node)**

Definition at line 687 of file fipa_envelope.c.

References mxml_node_s::child, fipa_agent_identifier_New(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseResolvers(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), and fipa_envelope_ParseResolvers().

**7.14.1.33 int fipa_envelope_ParseResolvers (struct fipa_agent_identifier_s * aid, mxml_node_t *
resolvers_node)**

Definition at line 804 of file fipa_envelope.c.

References fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_agent_identifier_s::resolvers, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_envelope_ParseAgentIdentifier().

7.15 /home/dko/Projects/mobilec/src/include/acc.h File Reference

```
#include <sys/socket.h>
#include "macros.h"
```

Functions

- **STRUCT** (acc, struct mc_platform_s *mc_platform;THREAD_T thread;THREAD_T message_handler_thread;THREAD_T listen_thread;THREAD_T udplisten_thread;int waiting;Mutex_T *waiting_lock;COND_T *waiting_cond;int num_conn_threads;THREAD_T conn_thread;Mutex_T conn_thread_lock;COND_T conn_thread_cond;struct connection_thread_arg_s *connection_thread_arg;int num_msg_threads;THREAD_T msg_thread;Mutex_T msg_thread_lock;COND_T msg_thread_cond;) STRUCT(listen_thread_arg)
- **STRUCT** (connection_thread_arg, struct mc_platform_s *mc_platform;struct connection_s *connection;) acc_p acc_Initialize(struct mc_platform_s *mc_platform)
- int **acc_Destroy** (acc_p acc)
- void **acc_Start** (struct mc_platform_s *mc_platform)
- void * **acc_MessageHandlerThread** (void *arg)
- void * **acc_Thread** (void *arg)
- void * **acc_connection_Thread** (void *arg)
- void * **listen_Thread** (void *arg)
- void * **udplisten_Thread** (void *arg)

Variables

- u_long port
- struct sockaddr_in * addr
- unsigned long int client_fd
- unsigned long int server_fd

7.15.1 Function Documentation

7.15.1.1 void* acc_connection_Thread (void * arg)

Definition at line 405 of file acc.c.

References mc_platform_s::acc, fipa_agent_identifier_s::addresses, agent_CmpName(), mc_platform_s::agent_queue, AGENT_UPDATE, CANCEL, CONNECT_THREAD_EXIT, connection_Destroy(), mtp_http_s::content, mtp_http_content_s::data, FIPA_ACL, fipa_acl_envelope_Destroy(), fipa_acl_envelope_New(), fipa_acl_message_Destroy(), fipa_acl_message_New(), fipa_acl_Parse(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_Parse(), fipa_message_string_Destroy(), fipa_message_string_New(), mtp_http_s::http_performative, HTTP_POST, HTTP_PUT, ListAdd(), ListRDLock(), ListRDUnlock(), ListSearchCB(), ListWRLock(), ListWRUnlock(), agent_s::mailbox, agent_s::mc_platform, fipa_message_string_s::message, message_s::message_body, message_Destroy(), message_New(), mtp_http_s::message_parts, mc_platform_s::message_queue, message_s::message_type, message_xml_parse(), MOBILE_AGENT, mtp_http_Destroy(), mtp_http_InitializeFromConnection(), mtp_http_New(), MXML_NO_CALLBACK, mxmlloadString(), N_UNDRSTD, fipa_agent_identifier_s::name, fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::num_params, fipa_acl_envelope_s::params, fipa_message_string_s::parse, mc_platform_s::port, mc_platform_s::private_key, QUER_IF,

QUER_REF, RELAY, REQUEST, RETURN_MSG, fipa_url_s::str, strdup, SUBSCRIBE, mtp_http_s::target, fipa_acl_Param_s::to, fipa_url_sequence_s::urls, and message_s::xml_root.

Referenced by acc_Thread().

7.15.1.2 int acc_Destroy (acc_p acc)

Definition at line 102 of file acc.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by mc_platform_Destroy().

7.15.1.3 void* acc_MessageHandlerThread (void * arg)

Definition at line 118 of file acc.c.

References mc_platform_s::acc, agent_CmpName(), agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, AGENT_UPDATE, mc_platform_s::ams, CANCEL, COND_BROADCAST, COND_WAIT, agent_s::datastate, FIPA_ACL, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, ListAdd(), ListPop(), ListSearchCB(), ListWRLock(), ListWRUnlock(), ListWRWait(), agent_s::lock, MC_AGENT_NEUTRAL, MC_RECV_AGENT, MC_RECV_MESSAGE, MC_RECV_RETURN, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, message_Destroy(), mc_platform_s::message_queue, message_Send(), message_s::message_type, MOBILE_AGENT, MUTEX_LOCK, MUTEX_UNLOCK, N_UNDRSTD, agent_s::name, agent_datastate_s::persistent, QUER_IF, QUER_REF, mc_platform_s::quit, mc_platform_s::quit_lock, RELAY, REQUEST, RETURN_MSG, SUBSCRIBE, THREAD_EXIT, and message_s::to_address.

Referenced by acc_Start().

7.15.1.4 void acc_Start (struct mc_platform_s * mc_platform)

7.15.1.5 void* acc_Thread (void * arg)

Definition at line 307 of file acc.c.

References mc_platform_s::acc, acc_connection_Thread(), COND_BROADCAST, COND_WAIT, CONN_THREADS, mc_platform_s::connection_queue, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, ListGetSize(), ListPop(), ListRDLock(), ListRDtoWR(), ListRDUnlock(), ListRDWait(), ListWRUnlock(), MC_RECV_CONNECTION, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, THREAD_CREATE, THREAD_DETACH, and THREAD_EXIT.

Referenced by acc_Start().

7.15.1.6 void* listen_Thread (void * arg)

Definition at line 677 of file acc.c.

References mc_platform_s::acc, connection_s::addr, connection_s::AES_key, mc_platform_s::agency, auth_conn_rece_key(), BACKLOG, mc_platform_s::bluetooth, connection_s::clientfd, COND_BROADCAST, connection_s::connect_id, connection_New(), mc_platform_s::connection_queue, agency_s::known_host_filename, ListAdd(), ListWRLock(), ListWRUnlock(), MUTEX_LOCK,

MUTEX_UNLOCK, connection_s::nonce, mc_platform_s::port, agency_s::portno, mc_platform_s::private_key, mc_platform_s::quit, connection_s::remote_hostname, connection_s::serverfd, SOCKET_ERROR, mc_platform_s::sockfd, and THREAD_EXIT.

Referenced by acc_Start().

7.15.1.7 STRUCT (connection_thread_arg, struct mc_platform_s *mc_platform;struct connection_s *connection;)

7.15.1.8 STRUCT (acc, struct mc_platform_s *mc_platform;THREAD_T thread;THREAD_T message_handler_thread;THREAD_T listen_thread;THREAD_T udplisten_thread;int waiting;MUTEX_T *waiting_lock;COND_T *waiting_cond;int num_conn_threads;THREAD_T conn_thread;MUTEX_T conn_thread_lock;COND_T conn_thread_cond;struct connection_thread_arg_s *connection_thread_arg;int num_msg_threads;THREAD_T msg_thread;MUTEX_T msg_thread_lock;COND_T msg_thread_cond;)

7.15.1.9 void* udplisten_Thread (void * arg)

Definition at line 938 of file acc.c.

References buf, BUflen, mc_platform_s::hostname, PACKAGE_VERSION, mc_platform_s::port, and UDPPORT.

Referenced by acc_Start().

7.15.2 Variable Documentation

7.15.2.1 struct sockaddr_in* addr

Definition at line 78 of file acc.h.

7.15.2.2 unsigned long int client_fd

Definition at line 79 of file acc.h.

Referenced by main(), and ssl_test().

7.15.2.3 u_long port

Definition at line 77 of file acc.h.

Referenced by MC_AclSend(), MC_MigrateAgent_chdl(), MC_SendAgentMigrationMessage_chdl(), MC_SendAgentMigrationMessageFile_chdl(), message_send_Thread(), and message_xml_parse_message().

7.15.2.4 unsigned long int server_fd

Definition at line 80 of file acc.h.

Referenced by main(), and ssl_test().

7.16 /home/dko/Projects/mobilec/src/include/agent.h File Reference

```
#include "agent_datastate.h"
#include "agent_task.h"
#include "libmc.h"
#include "message.h"
#include "macros.h"
```

Data Structures

- struct [agent_s](#)

Typedefs

- [typedef struct agent_s agent_t](#)
- [typedef agent_t * MCAgent_t](#)
- [typedef agent_t * agent_p](#)

Functions

- [int agent_AddPersistentVariable \(agent_p agent, int task_num, const char *var_name\)](#)
- [agent_p agent_New \(void\)](#)
- [agent_p agent_NewBinary \(struct mc_platform_s *mc_platform\)](#)
- [agent_p agent_Copy \(const agent_p agent\)](#)
- [int agent_Destroy \(agent_p agent\)](#)
- [agent_p agent_Initialize \(struct mc_platform_s *mc_platform, message_p message, int id\)](#)
- [void agent_RunChScript \(MCAgent_t agent, struct mc_platform_s *global\)](#)
- [void * agent_RunChScriptThread \(void *agent\)](#)
- [void * agent_ChScriptInitVar \(ChInterp_t *interp\)](#)
- [int agent_Print \(agent_t *agent\)](#)
- [int agent_CmpName \(const void *key, void *element\)](#)
- [int agent_CmpID \(int *id, agent_t *agent\)](#)

7.16.1 Typedef Documentation

7.16.1.1 [typedef agent_t* agent_p](#)

Definition at line 111 of file agent.h.

7.16.1.2 [typedef struct agent_s agent_t](#)

Definition at line 109 of file agent.h.

7.16.1.3 [typedef agent_t* MCAgent_t](#)

Definition at line 110 of file agent.h.

7.16.2 Function Documentation

7.16.2.1 int agent_AddPersistentVariable (agent_p *agent*, int *task_num*, const char * *var_name*)

Definition at line 53 of file agent.c.

References agent_s::agent_interp, agent_task_s::agent_variable_list, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, CHECK_NULL, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, interpreter_variable_data_CmpName(), interpreter_variable_data_Destroy(), ListAdd(), ListDeleteCB(), ListWRLock(), ListWRUnlock(), MC_ERR, agent_s::name, interpreter_variable_data_s::name, interpreter_variable_data_s::size, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

7.16.2.2 void* agent_ChScriptInitVar (ChInterp_t * *interp*)

Definition at line 554 of file agent.c.

References MC_AclAddReceiver_chdl(), MC_AclAddReplyTo_chdl(), MC_AclDestroy_chdl(), MC_AclGetContent_chdl(), MC_AclGetConversationID_chdl(), MC_AclGetPerformative_chdl(), MC_AclGetProtocol_chdl(), MC_AclGetSender_chdl(), MC_AclNew_chdl(), MC_AclPost_chdl(), MC_AclReply_chdl(), MC_AclRetrieve_chdl(), MC_AclSend_chdl(), MC_AclSetContent_chdl(), MC_AclSetConversationID_chdl(), MC_AclSetPerformative_chdl(), MC_AclSetProtocol_chdl(), MC_AclSetSender_chdl(), MC_AclWaitRetrieve_chdl(), MC_AddAgent_chdl(), MC_AgentAddTask_chdl(), MC_AgentAttachFile_chdl(), MC_AgentListFiles_chdl(), MC_AgentRetrieveFile_chdl(), MC_AgentVariableRetrieve_chdl(), MC_AgentVariableSave_chdl(), MC_Barrier_chdl(), MC_BarrierDelete_chdl(), MC_BarrierInit_chdl(), MC_CallAgentFunc_chdl(), MC_ComposeAgent_chdl(), MC_ComposeAgentFromFile_chdl(), MC_ComposeAgentFromFileWithWorkgroup_chdl(), MC_ComposeAgentWithWorkgroup_chdl(), MC_CondBroadcast_chdl(), MC_CondReset_chdl(), MC_CondSignal_chdl(), MC_CondWait_chdl(), MC_DeleteAgent_chdl(), MC_DeleteAgentWG_chdl(), MC_DeregisterService_chdl(), MC_DestroyServiceSearchResult_chdl(), MC_End_chdl(), MC_FindAgentByID_chdl(), MC_FindAgentByName_chdl(), MC_GetAgentID_chdl(), MC_GetAgentName_chdl(), MC_GetAgentStatus_chdl(), MC_GetAgentXMLString_chdl(), MC_GetTimeOfDay_chdl(), MC_HaltAgency_chdl(), MC_MigrateAgent_chdl(), MC_MutexLock_chdl(), MC_MutexUnlock_chdl(), MC_PrintAgentCode_chdl(), MC_RegisterService_chdl(), MC_ResumeAgency_chdl(), MC_RetrieveAgent_chdl(), MC_RetrieveAgentCode_chdl(), MC_SaveData_chdl(), MC_SearchForService_chdl(), MC_SemaphorePost_chdl(), MC_SemaphoreWait_chdl(), MC_SendAgentMigrationMessage_chdl(), MC_SendAgentMigrationMessageFile_chdl(), MC_SendSteerCommand_chdl(), MC_SetAgentStatus_chdl(), MC_SetDefaultAgentStatus_chdl(), MC_SyncDelete_chdl(), MC_SyncInit_chdl(), MC_TerminateAgent_chdl(), and MC_TerminateAgentWG_chdl().

Referenced by interpreter_queue_CreateRetrieve(), and mc_platform_Initialize().

7.16.2.3 int agent_CmpID (int * *id*, agent_t * *agent*)

Definition at line 1377 of file agent.c.

References agent_s::id, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_FindAgentByID().

7.16.2.4 int agent_CmpName (const void * *key*, void * *element*)

Definition at line 1366 of file agent.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), MC_DeleteAgent(), MC_DeleteAgentWG(), and MC_FindAgentByName().

7.16.2.5 agent_p agent_Copy (const agent_p *agent*)

Definition at line 140 of file agent.c.

References agent_datastate_Copy(), agent_s::agent_interp, agent_New(), agent_s::agent_persistent, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_type, agent_s::arrival_time, COND_INIT, COND_NEW, agent_s::datastate, agent_s::home, agent_s::home_port, agent_s::id, ListInitialize(), agent_s::lock, agent_s::mailbox, MUTEX_INIT, MUTEX_LOCK, MUTEX_NEW, MUTEX_T, agent_s::name, agent_s::orphan, agent_s::owner, agent_s::return_data, and agent_s::run_lock.

Referenced by MC_CopyAgent().

7.16.2.6 int agent_Destroy (agent_p *agent*)

Definition at line 455 of file agent.c.

References agent_s::agent_address, agent_datastate_Destroy(), agent_s::agent_interp, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, COND_DESTROY, agent_s::datastate, fipa_acl_message_Destroy(), agent_s::home, mc_platform_s::interpreter_queue, ListAdd(), ListClearCB(), ListTerminate(), ListWRLock(), ListWRUnlock(), agent_s::lock, agent_s::mailbox, MC_AGENT_NEUTRAL, agent_s::mc_platform, MC_SUCCESS, MUTEX_DESTROY, MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, agent_s::owner, agent_s::run_lock, agent_s::sender, and agent_s::wg_code.

Referenced by agent_Initialize(), handler_FLUSH_AGENTS(), MC_DeleteAgentWG(), and mc_platform_Destroy().

7.16.2.7 agent_p agent_Initialize (struct mc_platform_s * *mc_platform*, message_p *message*, int *id*)

Definition at line 318 of file agent.c.

References agent_s::agent_address, agent_datastate_New(), agent_Destroy(), agent_s::agent_pipe_active, agent_s::agent_pipe_ready_to_read, agent_s::agent_ready_to_send, agent_s::agent_script_ready, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_thread_id, agent_s::agent_type, message_s::agent_xml_flag, agent_xml_parse(), agent_s::arrival_time, COND_BROADCAST, COND_DESTROY, COND_INIT, COND_NEW, agent_s::datastate, mc_platform_s::default_agentstatus, mc_platform_s::err, agent_s::home, mc_platform_s::hostname, agent_s::id, ListInitialize(), agent_s::lock, agent_s::mailbox, MC_ERR_PARSE, agent_s::mc_platform, MC_REMOTE_AGENT, MC_RETURN_AGENT, MC_WAIT_CH, message_s::message_type, MOBILE_AGENT, MUTEX_DESTROY, MUTEX_INIT, MUTEX_LOCK, MUTEX_NEW, MUTEX_T, MUTEX_UNLOCK, agent_s::orphan, mc_platform_s::port, RETURN_MSG, agent_s::run_lock, agent_s::sender, agent_datastate_s::xml_agent_root, message_s::xml_payload, message_s::xml_root, and agent_datastate_s::xml_root.

Referenced by acc_MessageHandlerThread(), MC_SendAgent(), MC_SendAgentFile(), and MC_SendAgentMigrationMessageFile().

7.16.2.8 **agent_p agent_New (void)**

Definition at line 207 of file agent.c.

References agent_s::agent_status_cond, agent_s::agent_status_lock, COND_INIT, COND_NEW, ListInitialize(), agent_s::lock, agent_s::mailbox, MUTEX_INIT, MUTEX_NEW, and agent_s::run_lock.

Referenced by agent_Copy(), and MC_ComposeAgentWithWorkgroup().

7.16.2.9 **agent_p agent_NewBinary (struct mc_platform_s * mc_platform)**

Definition at line 237 of file agent.c.

References agent_s::agent_address, agent_s::agent_pipe_active, agent_s::agent_pipe_ready_to_read, agent_s::agent_ready_to_send, agent_s::agent_script_ready, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_thread_id, agent_s::arrival_time, agent_s::binary, COND_BROADCAST, COND_INIT, COND_NEW, agent_s::home, mc_platform_s::hostname, agent_s::id, ListInitialize(), agent_s::lock, agent_s::mailbox, MC_AGENT_ACTIVE, agent_s::mc_platform, MUTEX_INIT, MUTEX_LOCK, MUTEX_NEW, MUTEX_T, MUTEX_UNLOCK, agent_s::orphan, mc_platform_s::port, agent_s::run_lock, and agent_s::sender.

Referenced by MC_AddStationaryAgent().

7.16.2.10 **int agent_Print (agent_t * agent)**

Definition at line 1356 of file agent.c.

References agent_s::agent_status, agent_s::agent_status_lock, agent_s::connect_id, agent_s::id, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by ams_Print(), and handler_PRINTLIST_AGENTS().

7.16.2.11 **void agent_RunChScript (MCAGENT_t agent, struct mc_platform_s * global)**

7.16.2.12 **void* agent_RunChScriptThread (void * agent)**

Definition at line 1049 of file agent.c.

References mc_platform_s::agency, agent_s::agent_interp, agency_s::agentInitCallback, agency_s::agentInitUserData, mc_platform_s::ams, COND_SIGNAL, COND_WAIT, agent_s::datastate, agent_s::id, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, interpreter_queue_CreateRetrieve(), interpreter_variable_data_Destroy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), ListAdd(), ListClearCB(), ListWRLock(), ListWRUnlock(), MC_AGENT_NEUTRAL, MC_EXEC_AGENT, agent_s::mc_platform, MC_RETURN_AGENT, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MC_WAIT_FINISHED, MC_WAIT_MESSGSEND, MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, SIGNAL, agent_datastate_s::task_progress, and WARN.

Referenced by agent_RunChScript().

7.17 /home/dko/Projects/mobilec/src/include/agent_datastate.h File Reference

```
#include <mxmxml.h>
#include "agent_task.h"
```

Data Structures

- struct [agent_datastate_s](#)

Typedefs

- [typedef struct agent_datastate_s agent_datastate_t](#)
- [typedef agent_datastate_t * agent_datastate_p](#)

Functions

- [agent_datastate_p agent_datastate_Copy \(const agent_datastate_p datastate\)](#)
- [agent_datastate_p agent_datastate_New \(void\)](#)
- [int agent_datastate_Destroy \(agent_datastate_p agent_datastate\)](#)

7.17.1 Typedef Documentation

7.17.1.1 [typedef agent_datastate_t* agent_datastate_p](#)

Definition at line 73 of file agent_datastate.h.

7.17.1.2 [typedef struct agent_datastate_s agent_datastate_t](#)

7.17.2 Function Documentation

7.17.2.1 [agent_datastate_p agent_datastate_Copy \(const agent_datastate_p datastate\)](#)

Definition at line 47 of file agent_datastate.c.

References `agent_datastate_s::agent_code`, `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_datastate_New()`, `agent_task_Copy()`, `agent_datastate_s::init_agent_status`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::persistent`, `agent_datastate_s::return_data`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `agent_Copy()`.

7.17.2.2 [int agent_datastate_Destroy \(agent_datastate_p agent_datastate\)](#)

Definition at line 136 of file agent_datastate.c.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_task_Destroy()`, `MC_SUCCESS`, `mxmxmlDelete()`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::tasks`, and `agent_datastate_s::xml_root`.

Referenced by agent_Destroy().

7.17.2.3 **agent_datastate_p agent_datastate_New (void)**

Definition at line 115 of file agent_datastate.c.

References agent_datastate_s::agent_code, CHECK_NULL, agent_datastate_s::init_agent_status, agent_datastate_s::number_of_tasks, agent_datastate_s::persistent, agent_datastate_s::progress_modifier, agent_datastate_s::return_data, agent_datastate_s::task_progress, agent_datastate_s::tasks, agent_datastate_s::xml_agent_root, and agent_datastate_s::xml_root.

Referenced by agent_datastate_Copy(), agent_Initialize(), and MC_ComposeAgentWithWorkgroup().

7.18 /home/dko/Projects/mobilec/src/include/agent_file_data.h File Reference

Data Structures

- struct `agent_file_data_s`

Typedefs

- typedef struct `agent_file_data_s` `agent_file_data_t`
- typedef struct `agent_file_data_s` * `agent_file_data_p`

Functions

- `agent_file_data_p agent_file_data_New (void)`
- `agent_file_data_p agent_file_data_NewWithData (const char *name, const char *data)`
- `agent_file_data_p agent_file_data_Copy (agent_file_data_p src)`
- `agent_file_data_p agent_file_data_InitializeFromFilename (const char *filename)`
- `agent_file_data_p agent_file_data_Encode (const char *name, void *data, int size)`
- `int agent_file_data_SaveToFile (const char *filename, agent_file_data_p afd)`
- `int agent_file_data_Destroy (agent_file_data_p agent_file_data)`
- `int agent_file_data_CmpName (const void *key, void *element)`

7.18.1 Typedef Documentation

7.18.1.1 `typedef struct agent_file_data_s* agent_file_data_p`

Definition at line 41 of file `agent_file_data.h`.

7.18.1.2 `typedef struct agent_file_data_s agent_file_data_t`

7.18.2 Function Documentation

7.18.2.1 `int agent_file_data_CmpName (const void * key, void * element)`

Definition at line 102 of file `agent_file_data.c`.

References `agent_file_data_s::name`.

Referenced by `MC_AgentRetrieveFile()`.

7.18.2.2 `agent_file_data_p agent_file_data_Copy (agent_file_data_p src)`

Definition at line 26 of file `agent_file_data.c`.

References `agent_file_data_s::data`, `agent_file_data_s::name`, and `strdup`.

Referenced by `agent_task_Copy()`.

7.18.2.3 int agent_file_data_Destroy (agent_file_data_p *agent_file_data*)

Definition at line 89 of file agent_file_data.c.

References agent_file_data_s::data, and agent_file_data_s::name.

Referenced by agent_task_Destroy(), and agent_xml_compose__task().

7.18.2.4 agent_file_data_p agent_file_data_Encode (const char * *name*, void * *data*, int *size*)

Definition at line 84 of file agent_file_data.c.

7.18.2.5 agent_file_data_p agent_file_data_InitializeFromFilename (const char * *filename*)

Definition at line 44 of file agent_file_data.c.

References base64_encode_block(), base64_encode_blockend(), base64_init_encodestate(), agent_file_data_s::data, agent_file_data_s::name, and strdup.

Referenced by MC_AgentAttachFile().

7.18.2.6 agent_file_data_p agent_file_data_New (void)

Definition at line 8 of file agent_file_data.c.

References agent_file_data_s::data, and agent_file_data_s::name.

Referenced by agent_file_data_NewWithData().

7.18.2.7 agent_file_data_p agent_file_data_NewWithData (const char * *name*, const char * *data*)

Definition at line 17 of file agent_file_data.c.

References agent_file_data_New(), agent_file_data_s::data, agent_file_data_s::name, and strdup.

Referenced by agent_xml_parse__file().

7.18.2.8 int agent_file_data_SaveToFile (const char * *filename*, agent_file_data_p *afd*)

7.19 /home/dko/Projects/mobilec/src/include/agent_lib.h File Reference

Functions

- EXPORTCH int `MC_AclGetProtocol_chdl` (void *varg)
- EXPORTCH char * `MC_AclGetConversationID_chdl` (void *varg)
- EXPORTCH int `MC_AclGetPerformative_chdl` (void *varg)
- EXPORTCH int `MC_AclGetSender_chdl` (void *varg)
- EXPORTCH char * `MC_AclGetContent_chdl` (void *varg)
- EXPORTCH int `MC_AclDestroy_chdl` (void *varg)
- EXPORTCH void * `MC_AclNew_chdl` (void *varg)
- EXPORTCH int `MC_AclPost_chdl` (void *varg)
- EXPORTCH void * `MC_AclReply_chdl` (void *varg)
- EXPORTCH void * `MC_AclRetrieve_chdl` (void *varg)
- EXPORTCH int `MC_AclSend_chdl` (void *varg)
- EXPORTCH void * `MC_AclWaitRetrieve_chdl` (void *varg)
- EXPORTCH int `MC_AclSetProtocol_chdl` (void *varg)
- EXPORTCH int `MC_AclSetConversationID_chdl` (void *varg)
- EXPORTCH int `MC_AclSetPerformative_chdl` (void *varg)
- EXPORTCH int `MC_AclSetSender_chdl` (void *varg)
- EXPORTCH int `MC_AclAddReceiver_chdl` (void *varg)
- EXPORTCH int `MC_AclAddReplyTo_chdl` (void *varg)
- EXPORTCH int `MC_AclSetContent_chdl` (void *varg)
- EXPORTCH int `MC_AddAgent_chdl` (void *varg)
- EXPORTCH int `MC_AgentAddTask_chdl` (void *varg)
- EXPORTCH int `MC_AgentAttachFile_chdl` (void *varg)
- EXPORTCH int `MC_AgentListFiles_chdl` (void *varg)
- EXPORTCH int `MC_AgentRetrieveFile_chdl` (void *varg)
- EXPORTCH const void * `MC_AgentVariableRetrieve_chdl` (void *varg)
- EXPORTCH int `MC_AgentVariableSave_chdl` (void *varg)
- EXPORTCH int `MC_Barrier_chdl` (void *varg)
- EXPORTCH int `MC_BarrierDelete_chdl` (void *varg)
- EXPORTCH int `MC_BarrierInit_chdl` (void *varg)
- EXPORTCH int `MC_CallAgentFunc_chdl` (void *varg)
- EXPORTCH MCAgent_t `MC_ComposeAgent_chdl` (void *varg)
- EXPORTCH MCAgent_t `MC_ComposeAgentWithWorkgroup_chdl` (void *varg)
- EXPORTCH MCAgent_t `MC_ComposeAgentFromFile_chdl` (void *varg)
- EXPORTCH MCAgent_t `MC_ComposeAgentFromFileWithWorkgroup_chdl` (void *varg)
- EXPORTCH int `MC_CondBroadcast_chdl` (void *varg)
- EXPORTCH int `MC_CondWait_chdl` (void *varg)
- EXPORTCH int `MC_CondReset_chdl` (void *varg)
- EXPORTCH int `MC_CondSignal_chdl` (void *varg)
- EXPORTCH int `MC_DeleteAgent_chdl` (void *varg)
- EXPORTCH int `MC_DeleteAgentWG_chdl` (void *varg)
- EXPORTCH int `MC_DeregisterService_chdl` (void *varg)
- EXPORTCH int `MC_DestroyServiceSearchResult_chdl` (void *varg)
- EXPORTCH int `MC_End_chdl` (void *varg)
- EXPORTCH MCAgent_t `MC_FindAgentByID_chdl` (void *varg)
- EXPORTCH MCAgent_t `MC_FindAgentByName_chdl` (void *varg)

- EXPORTCH int [MC_GetAgentID_chdl](#) (void *varg)
- EXPORTCH char * [MC_GetAgentName_chdl](#) (void *varg)
- EXPORTCH int [MC_GetAgentNumTasks_chdl](#) (void *varg)
- EXPORTCH char * [MC_GetAgentXMLString_chdl](#) (void *varg)
- EXPORTCH int [MC_GetTimeOfDay_chdl](#) (void *varg)
- EXPORTCH int [MC_HaltAgency_chdl](#) (void *varg)
- EXPORTCH int [MC_PrintAgentCode_chdl](#) (void *varg)
- EXPORTCH int [MC_MigrateAgent_chdl](#) (void *varg)
- EXPORTCH int [MC_MutexLock_chdl](#) (void *varg)
- EXPORTCH int [MC_MutexUnlock_chdl](#) (void *varg)
- EXPORTCH int [MC_RegisterService_chdl](#) (void *varg)
- EXPORTCH int [MC_ResumeAgency_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t](#) [MC_RetrieveAgent_chdl](#) (void *varg)
- EXPORTCH char * [MC_RetrieveAgentCode_chdl](#) (void *varg)
- EXPORTCH int [MC_SearchForService_chdl](#) (void *varg)
- EXPORTCH int [MC_SemaphorePost_chdl](#) (void *varg)
- EXPORTCH int [MC_SemaphoreWait_chdl](#) (void *varg)
- EXPORTCH int [MC_SendSteerCommand_chdl](#) (void *varg)
- EXPORTCH int [MC_TerminateAgent_chdl](#) (void *varg)
- EXPORTCH int [MC_TerminateAgentWG_chdl](#) (void *varg)
- EXPORTCH int [MC_GetAgentStatus_chdl](#) (void *varg)
- EXPORTCH int [MC_SaveData_chdl](#) (void *varg)
- EXPORTCH int [MC_SendAgentMigrationMessage_chdl](#) (void *varg)
- EXPORTCH int [MC_SendAgentMigrationMessageFile_chdl](#) (void *varg)
- EXPORTCH int [MC_SetAgentStatus_chdl](#) (void *varg)
- EXPORTCH int [MC_SetDefaultAgentStatus_chdl](#) (void *varg)
- EXPORTCH int [MC_SyncDelete_chdl](#) (void *varg)
- EXPORTCH int [MC_SyncInit_chdl](#) (void *varg)

7.19.1 Function Documentation

7.19.1.1 EXPORTCH int MC_AclAddReceiver_chdl (void * *varg*)

Definition at line 3261 of file libmc.c.

References [MC_AclAddReceiver\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.19.1.2 EXPORTCH int MC_AclAddReplyTo_chdl (void * *varg*)

Definition at line 3281 of file libmc.c.

References [MC_AclAddReplyTo\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.19.1.3 EXPORTCH int MC_AclDestroy_chdl (void * *varg*)

Definition at line 2993 of file libmc.c.

References [MC_AclDestroy\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.19.1.4 EXPORTCH char* MC_AclGetContent_chdl (void * *varg*)

Definition at line 3172 of file libmc.c.

References MC_AclGetContent().

Referenced by agent_ChScriptInitVar().

7.19.1.5 EXPORTCH char* MC_AclGetConversationID_chdl (void * *varg*)

Definition at line 3123 of file libmc.c.

References MC_AclGetConversationID().

Referenced by agent_ChScriptInitVar().

7.19.1.6 EXPORTCH int MC_AclGetPerformative_chdl (void * *varg*)

Definition at line 3138 of file libmc.c.

References MC_AclGetPerformative().

Referenced by agent_ChScriptInitVar().

7.19.1.7 EXPORTCH int MC_AclGetProtocol_chdl (void * *varg*)

Definition at line 3108 of file libmc.c.

References MC_AclGetProtocol().

Referenced by agent_ChScriptInitVar().

7.19.1.8 EXPORTCH int MC_AclGetSender_chdl (void * *varg*)

Definition at line 3153 of file libmc.c.

References MC_AclGetSender().

Referenced by agent_ChScriptInitVar().

7.19.1.9 EXPORTCH void* MC_AclNew_chdl (void * *varg*)

Definition at line 3008 of file libmc.c.

References MC_AclNew().

Referenced by agent_ChScriptInitVar().

7.19.1.10 EXPORTCH int MC_AclPost_chdl (void * *varg*)

Definition at line 3016 of file libmc.c.

References MC_AclPost().

Referenced by agent_ChScriptInitVar().

7.19.1.11 EXPORTCH void* MC_AclReply_chdl (void *varg)

Definition at line 3034 of file libmc.c.

References MC_AclReply().

Referenced by agent_ChScriptInitVar().

7.19.1.12 EXPORTCH void* MC_AclRetrieve_chdl (void *varg)

Definition at line 3050 of file libmc.c.

References MC_AclRetrieve().

Referenced by agent_ChScriptInitVar().

7.19.1.13 EXPORTCH int MC_AclSend_chdl (void *varg)

Definition at line 3066 of file libmc.c.

References CHECK_NULL, MC_AclSend(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.14 EXPORTCH int MC_AclSetContent_chdl (void *varg)

Definition at line 3301 of file libmc.c.

References fipa_acl_message_s::content, and MC_AclSetContent().

Referenced by agent_ChScriptInitVar().

7.19.1.15 EXPORTCH int MC_AclSetConversationID_chdl (void *varg)

Definition at line 3205 of file libmc.c.

References MC_AclSetConversationID().

Referenced by agent_ChScriptInitVar().

7.19.1.16 EXPORTCH int MC_AclSetPerformative_chdl (void *varg)

Definition at line 3223 of file libmc.c.

References MC_AclSetPerformative(), and fipa_acl_message_s::performative.

Referenced by agent_ChScriptInitVar().

7.19.1.17 EXPORTCH int MC_AclSetProtocol_chdl (void *varg)

Definition at line 3187 of file libmc.c.

References MC_AclSetProtocol(), and fipa_acl_message_s::protocol.

Referenced by agent_ChScriptInitVar().

7.19.1.18 EXPORTCH int MC_AclSetSender_chdl (void * *varg*)

Definition at line 3241 of file libmc.c.

References MC_AclSetSender().

Referenced by agent_ChScriptInitVar().

7.19.1.19 EXPORTCH void* MC_AclWaitRetrieve_chdl (void * *varg*)

Definition at line 3090 of file libmc.c.

References MC_AclWaitRetrieve().

Referenced by agent_ChScriptInitVar().

7.19.1.20 EXPORTCH int MC_AddAgent_chdl (void * *varg*)

Definition at line 3321 of file libmc.c.

References CHECK_NULL, MC_AddAgent(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.21 EXPORTCH int MC_AgentAddTask_chdl (void * *varg*)

Definition at line 3345 of file libmc.c.

References MC_AgentAddTask().

Referenced by agent_ChScriptInitVar().

7.19.1.22 EXPORTCH int MC_AgentAttachFile_chdl (void * *varg*)

Definition at line 3379 of file libmc.c.

References MC_AgentAttachFile().

Referenced by agent_ChScriptInitVar().

7.19.1.23 EXPORTCH int MC_AgentListFiles_chdl (void * *varg*)

Definition at line 3403 of file libmc.c.

References MC_AgentListFiles().

Referenced by agent_ChScriptInitVar().

7.19.1.24 EXPORTCH int MC_AgentRetrieveFile_chdl (void * *varg*)

Definition at line 3430 of file libmc.c.

References MC_AgentRetrieveFile().

Referenced by agent_ChScriptInitVar().

7.19.1.25 EXPORTCH const void* MC_AgentVariableRetrieve_chdl (void * varg)

Definition at line 3458 of file libmc.c.

References MC_AgentVariableRetrieve().

Referenced by agent_ChScriptInitVar().

7.19.1.26 EXPORTCH int MC_AgentVariableSave_chdl (void * varg)

Definition at line 3482 of file libmc.c.

References MC_AgentVariableSave().

Referenced by agent_ChScriptInitVar().

7.19.1.27 EXPORTCH int MC_Barrier_chdl (void * varg)

Definition at line 3534 of file libmc.c.

References CHECK_NULL, MC_Barrier(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.28 EXPORTCH int MC_BarrierDelete_chdl (void * varg)

Definition at line 3557 of file libmc.c.

References CHECK_NULL, MC_BarrierDelete(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.29 EXPORTCH int MC_BarrierInit_chdl (void * varg)

Definition at line 3580 of file libmc.c.

References CHECK_NULL, MC_BarrierInit(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.30 EXPORTCH int MC_CallAgentFunc_chdl (void * varg)

Definition at line 3504 of file libmc.c.

References MC_CallAgentFuncVar().

Referenced by agent_ChScriptInitVar().

7.19.1.31 EXPORTCH MCAgent_t MC_ComposeAgent_chdl (void * varg)

Definition at line 3628 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.19.1.32 EXPORTCH MCAgent_t MC_ComposeAgentFromFile_chdl (void * *varg*)

Definition at line 3712 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.19.1.33 EXPORTCH MCAgent_t MC_ComposeAgentFromFileWithWorkgroup_chdl (void * *varg*)

Definition at line 3753 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.19.1.34 EXPORTCH MCAgent_t MC_ComposeAgentWithWorkgroup_chdl (void * *varg*)

Definition at line 3669 of file libmc.c.

References MC_ComposeAgentS().

Referenced by agent_ChScriptInitVar().

7.19.1.35 EXPORTCH int MC_CondBroadcast_chdl (void * *varg*)

Definition at line 3605 of file libmc.c.

References CHECK_NULL, MC_CondBroadcast(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.36 EXPORTCH int MC_CondReset_chdl (void * *varg*)

Definition at line 3819 of file libmc.c.

References CHECK_NULL, MC_CondReset(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.37 EXPORTCH int MC_CondSignal_chdl (void * *varg*)

Definition at line 3796 of file libmc.c.

References CHECK_NULL, MC_CondSignal(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.38 EXPORTCH int MC_CondWait_chdl (void * *varg*)

Definition at line 3842 of file libmc.c.

References CHECK_NULL, MC_CondWait(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.39 EXPORTCH int MC_DeleteAgent_chdl (void * *varg*)

Definition at line 3864 of file libmc.c.

References MC_DeleteAgent(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

7.19.1.40 EXPORTCH int MC_DeleteAgentWG_chdl (void * *varg*)

Definition at line 3884 of file libmc.c.

References MC_DeleteAgentWG(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

7.19.1.41 EXPORTCH int MC_DeregisterService_chdl (void * *varg*)

Definition at line 3933 of file libmc.c.

References CHECK_NULL, MC_DeregisterService(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.42 EXPORTCH int MC_DestroyServiceSearchResult_chdl (void * *varg*)

Definition at line 3906 of file libmc.c.

References MC_DestroyServiceSearchResult().

Referenced by agent_ChScriptInitVar().

7.19.1.43 EXPORTCH int MC_End_chdl (void * *varg*)

Definition at line 3960 of file libmc.c.

References CHECK_NULL, MC_End(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.44 EXPORTCH MCAgent_t MC_FindAgentByID_chdl (void * *varg*)

Definition at line 3977 of file libmc.c.

References CHECK_NULL, MC_FindAgentByID(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.45 EXPORTCH MCAgent_t MC_FindAgentByName_chdl (void * *varg*)

Definition at line 4000 of file libmc.c.

References CHECK_NULL, MC_FindAgentByName(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.46 EXPORTCH int MC_GetAgentID_chdl (void * *varg*)

Definition at line 4047 of file libmc.c.

References MC_GetAgentID().

Referenced by agent_ChScriptInitVar().

7.19.1.47 EXPORTCH char* MC_GetAgentName_chdl (void * *varg*)

Definition at line 4063 of file libmc.c.

References MC_GetAgentName().

Referenced by agent_ChScriptInitVar().

7.19.1.48 EXPORTCH int MC_GetAgentNumTasks_chdl (void * *varg*)

Definition at line 4079 of file libmc.c.

References MC_GetAgentNumTasks().

7.19.1.49 EXPORTCH int MC_GetAgentStatus_chdl (void * *varg*)

Definition at line 4095 of file libmc.c.

References MC_GetAgentStatus().

Referenced by agent_ChScriptInitVar().

7.19.1.50 EXPORTCH char* MC_GetAgentXMLString_chdl (void * *varg*)

Definition at line 4111 of file libmc.c.

References MC_GetAgentXMLString().

Referenced by agent_ChScriptInitVar().

7.19.1.51 EXPORTCH int MC_GetTimeOfDay_chdl (void * *varg*)

Definition at line 4127 of file libmc.c.

Referenced by agent_ChScriptInitVar().

7.19.1.52 EXPORTCH int MC_HaltAgency_chdl (void * *varg*)

Definition at line 4142 of file libmc.c.

References CHECK_NULL, MC_HaltAgency(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.53 EXPORTCH int MC_MigrateAgent_chdl (void * *varg*)

Definition at line 4159 of file libmc.c.

References MC_MigrateAgent(), and port.

Referenced by agent_ChScriptInitVar().

7.19.1.54 EXPORTCH int MC_MutexLock_chdl (void * *varg*)

Definition at line 4178 of file libmc.c.

References CHECK_NULL, MC_MutexLock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.55 EXPORTCH int MC_MutexUnlock_chdl (void * *varg*)

Definition at line 4202 of file libmc.c.

References CHECK_NULL, MC_MutexUnlock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.56 EXPORTCH int MC_PrintAgentCode_chdl (void * *varg*)

Definition at line 4226 of file libmc.c.

References MC_PrintAgentCode().

Referenced by agent_ChScriptInitVar().

7.19.1.57 EXPORTCH int MC_RegisterService_chdl (void * *varg*)

Definition at line 4242 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RegisterService().

Referenced by agent_ChScriptInitVar().

7.19.1.58 EXPORTCH int MC_ResumeAgency_chdl (void * *varg*)

Definition at line 4279 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_ResumeAgency().

Referenced by agent_ChScriptInitVar().

7.19.1.59 EXPORTCH MCAgent_t MC_RetrieveAgent_chdl (void * *varg*)

Definition at line 4297 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RetrieveAgent().

Referenced by agent_ChScriptInitVar().

7.19.1.60 EXPORTCH char* MC_RetrieveAgentCode_chdl (void * *varg*)

Definition at line 4314 of file libmc.c.

References MC_RetrieveAgentCode().

Referenced by agent_ChScriptInitVar().

7.19.1.61 EXPORTCH int MC_SaveData_chdl (void * *varg*)

Definition at line 4330 of file libmc.c.

References agent_task_s::agent_variable_list, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, interpreter_variable_data_New(), ListAdd(), ListWRLock(), ListWRUnlock(), interpreter_variable_data_s::name, interpreter_variable_data_s::size, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by agent_ChScriptInitVar().

7.19.1.62 EXPORTCH int MC_SearchForService_chdl (void * *varg*)

Definition at line 4369 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SearchForService().

Referenced by agent_ChScriptInitVar().

7.19.1.63 EXPORTCH int MC_SemaphorePost_chdl (void * *varg*)

Definition at line 4410 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphorePost().

Referenced by agent_ChScriptInitVar().

7.19.1.64 EXPORTCH int MC_SemaphoreWait_chdl (void * *varg*)

Definition at line 4434 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphoreWait().

Referenced by agent_ChScriptInitVar().

7.19.1.65 EXPORTCH int MC_SendAgentMigrationMessage_chdl (void * *varg*)

Definition at line 4458 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, MC_SendAgentMigrationMessage(), and port.

Referenced by agent_ChScriptInitVar().

7.19.1.66 EXPORTCH int MC_SendAgentMigrationMessageFile_chdl (void * *varg*)

Definition at line 4483 of file libmc.c.

References MC_SendAgentMigrationMessageFile(), and port.

Referenced by agent_ChScriptInitVar().

7.19.1.67 EXPORTCH int MC_SendSteerCommand_chdl (void * *varg*)

Definition at line 4503 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SendSteerCommand().

Referenced by agent_ChScriptInitVar().

7.19.1.68 EXPORTCH int MC_SetAgentStatus_chdl (void * *varg*)

Definition at line 4526 of file libmc.c.

References MC_SetAgentStatus().

Referenced by agent_ChScriptInitVar().

7.19.1.69 EXPORTCH int MC_SetDefaultAgentStatus_chdl (void * *varg*)

Definition at line 4544 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SetDefaultAgentStatus().

Referenced by agent_ChScriptInitVar().

7.19.1.70 EXPORTCH int MC_SyncDelete_chdl (void * *varg*)

Definition at line 4567 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncDelete().

Referenced by agent_ChScriptInitVar().

7.19.1.71 EXPORTCH int MC_SyncInit_chdl (void * *varg*)

Definition at line 4590 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncInit().

Referenced by agent_ChScriptInitVar().

7.19.1.72 EXPORTCH int MC_TerminateAgent_chdl (void * *varg*)

Definition at line 4614 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgent().

Referenced by agent_ChScriptInitVar().

7.19.1.73 EXPORTCH int MC_TerminateAgentWG_chdl (void * *varg*)

Definition at line 4635 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgentWG().

Referenced by agent_ChScriptInitVar().

7.20 /home/dko/Projects/mobilec/src/include/agent_task.h File Reference

```
#include "../mc_list/list.h"
#include "interpreter_variable_data.h"
```

Data Structures

- struct [agent_task_s](#)

Typedefs

- typedef struct [agent_task_s](#) [agent_task_t](#)
- typedef [agent_task_t](#) * [agent_task_p](#)

Functions

- [agent_task_p agent_task_New \(void\)](#)
- [agent_task_p agent_task_Copy \(agent_task_p task\)](#)
- int [agent_task_Destroy \(agent_task_p agent_task\)](#)

7.20.1 Typedef Documentation

7.20.1.1 typedef [agent_task_t*](#) [agent_task_p](#)

Definition at line 61 of file [agent_task.h](#).

7.20.1.2 typedef struct [agent_task_s](#) [agent_task_t](#)

7.20.2 Function Documentation

7.20.2.1 [agent_task_p agent_task_Copy \(agent_task_p task\)](#)

Definition at line 70 of file [agent_task.c](#).

References [agent_file_data_Copy\(\)](#), [agent_task_s::agent_file_list](#), [agent_task_s::agent_return_data](#), [agent_task_s::agent_variable_list](#), [agent_task_s::code_id](#), [agent_task_s::init_agent_status](#), [interpreter_variable_data_Copy\(\)](#), [ListAdd\(\)](#), [ListCopy\(\)](#), [ListInitialize\(\)](#), [ListRDLock\(\)](#), [ListRDUnlock\(\)](#), [ListSearch\(\)](#), [ListWRLock\(\)](#), [ListWRUnlock\(\)](#), [agent_task_s::num_saved_variables](#), [agent_task_s::number_of_elements](#), [agent_task_s::persistent](#), [agent_task_s::saved_variables](#), [agent_task_s::server_name](#), [list_s::size](#), [agent_task_s::size_of_element_array](#), [strdup](#), and [agent_task_s::var_name](#).

Referenced by [agent_datastate_Copy\(\)](#).

7.20.2.2 int [agent_task_Destroy \(agent_task_p agent_task\)](#)

Definition at line 143 of file [agent_task.c](#).

References `agent_file_data_Destroy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_task_s::code_id`, `interpreter_variable_data_Destroy()`, `ListClearCB()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `MC_SUCCESS`, `agent_task_s::saved_variables`, `agent_task_s::server_name`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Destroy()`.

7.20.2.3 `agent_task_p agent_task_New (void)`

Definition at line 50 of file `agent_task.c`.

References `agent_task_s::agent_file_list`, `agent_task_s::agent_variable_list`, `ListInitialize()`, `agent_task_s::num_saved_variables`, and `agent_task_s::saved_variables`.

Referenced by `agent_xml_parse_tasks()`, `MC_AgentAddTask()`, and `MC_ComposeAgentWithWorkgroup()`.

7.21 /home/dko/Projects/mobilec/src/include/ams.h File Reference

```
#include "macros.h"
```

Functions

- **STRUCT** (ams, struct [mc_platform_s](#) *mc_platform;Mutex_T *runflag_lock;Cond_T *runflag_cond;int run;int waiting;Mutex_T *waiting_lock;Cond_T *waiting_cond;Thread_T thread;) ams_p ams_Initialize(struct [mc_platform_s](#) *_mc_platform)
- int [ams_Destroy](#) (ams_p ams)
- int [ams_RemoveFinishedAgents](#) (ams_p ams)
- int [ams_ManageAgentList](#) (ams_p ams)
- void [ams_Print](#) (ams_p ams)
- void [ams_Start](#) (struct [mc_platform_s](#) *mc_platform)
- void * [ams_Thread](#) (void *arg)

7.21.1 Function Documentation

7.21.1.1 int ams_Destroy (ams_p ams)

Definition at line 45 of file ams.c.

References COND_DESTROY, MC_SUCCESS, and Mutex_DESTROY.

Referenced by [mc_platform_Destroy\(\)](#).

7.21.1.2 int ams_ManageAgentList (ams_p ams)

Definition at line 108 of file ams.c.

References [agent_RunChScript\(\)](#), [agent_s::agent_status](#), [agent_s::agent_status_cond](#), [agent_s::agent_status_lock](#), [agent_s::binary](#), [COND_BROADCAST](#), [ListAdd\(\)](#), [ListDelete\(\)](#), [ListRDLock\(\)](#), [ListRDtoWR\(\)](#), [ListRDUlock\(\)](#), [ListSearch\(\)](#), [ListWRlock\(\)](#), [ListWRtoRD\(\)](#), [ListWRUnlock\(\)](#), [agent_s::lock](#), [MC_AGENT_ACTIVE](#), [MC_AGENT_NEUTRAL](#), [MC_TerminateAgent\(\)](#), [MC_WAIT_CH](#), [MC_WAIT_FINISHED](#), [MC_WAIT_MESSGSEND](#), [message_Destroy\(\)](#), [message_InitializeFromAgent\(\)](#), [message_New\(\)](#), [Mutex_LOCK](#), [Mutex_UNLOCK](#), [agent_s::name](#), [agent_s::orphan](#), [mc_platform_s::quit](#), [mc_platform_s::quit_lock](#), [agent_s::run_lock](#), and [list_s::size](#).

Referenced by [ams_Thread\(\)](#).

7.21.1.3 void ams_Print (ams_p ams)

Definition at line 87 of file ams.c.

References [agent_Print\(\)](#), [ListForEachCB\(\)](#), [ListGetSize\(\)](#), [ListRDLock\(\)](#), [ListRDUlock\(\)](#), and [list_s::size](#).

7.21.1.4 int ams_RemoveFinishedAgents (ams_p *ams*)

7.21.1.5 void ams_Start (struct mc_platform_s * *mc_platform*)

7.21.1.6 void* ams_Thread (void * *arg*)

Definition at line 258 of file ams.c.

References *mc_platform_s::ams*, *ams_ManageAgentList()*, *COND_BROADCAST*, *COND_WAIT*, *MUTEX_LOCK*, *MUTEX_UNLOCK*, *mc_platform_s::quit*, *mc_platform_s::quit_lock*, and *THREAD_EXIT*.

Referenced by *ams_Start()*.

7.21.1.7 STRUCT (ams, struct mc_platform_s **mc_platform*;MUTEX_T **runflag_lock*;COND_T **runflag_cond*;int *run*;int *waiting*;MUTEX_T **waiting_lock*;COND_T **waiting_cond*;THREAD_T *thread*);

7.22 /home/dko/Projects/mobilec/src/include/barrier.h File Reference

```
#include "macros.h"
#include "../mc_list/list.h"
#include "mc_rwlock.h"
```

Data Structures

- struct [barrier_node_s](#)
- struct [barrier_queue_s](#)

Typedefs

- typedef struct [barrier_node_s](#) [barrier_node_t](#)
- typedef [barrier_node_t](#) * [barrier_node_p](#)
- typedef struct [barrier_queue_s](#) [barrier_queue_t](#)
- typedef [barrier_queue_t](#) * [barrier_queue_p](#)

Functions

- [barrier_node_p barrier_node_Initialize](#) (int id, int num_registered)
- int [barrier_node_Destroy](#) ([barrier_node_p](#) node)
- int [barrier_node_CmpID](#) (const void *key, void *element)

7.22.1 Typedef Documentation

7.22.1.1 [typedef barrier_node_t* barrier_node_p](#)

Definition at line 49 of file barrier.h.

7.22.1.2 [typedef struct barrier_node_s barrier_node_t](#)

7.22.1.3 [typedef barrier_queue_t* barrier_queue_p](#)

Definition at line 57 of file barrier.h.

7.22.1.4 [typedef struct barrier_queue_s barrier_queue_t](#)

7.22.2 Function Documentation

7.22.2.1 [int barrier_node_CmpID \(const void * key, void * element\)](#)

Definition at line 86 of file barrier.c.

References [barrier_node_s::id](#), [barrier_node_s::lock](#), [MUTEX_LOCK](#), and [MUTEX_UNLOCK](#).

Referenced by [MC_Barrier\(\)](#), [MC_BarrierDelete\(\)](#), and [MC_BarrierInit\(\)](#).

7.22.2.2 int barrier_node_Destroy (barrier_node_p *node*)

Definition at line 70 of file barrier.c.

References barrier_node_s::cond, COND_DESTROY, barrier_node_s::lock, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by MC_BarrierDelete(), and mc_platform_Destroy().

7.22.2.3 barrier_node_p barrier_node_Initialize (int *id*, int *num_registered*)

Definition at line 45 of file barrier.c.

References CHECK_NULL, barrier_node_s::cond, COND_INIT, COND_T, barrier_node_s::id, barrier_node_s::lock, MUTEX_INIT, MUTEX_T, barrier_node_s::num_registered, and barrier_node_s::num_waiting.

Referenced by MC_BarrierInit().

7.23 /home/dko/Projects/mobilec/src/include/cmd_prompt.h File Reference

```
#include "macros.h"
```

Data Structures

- struct cmd_prompt_s
- struct command_s

Defines

- #define CMDLINE_SIZE 80

Typedefs

- typedef struct cmd_prompt_s cmd_prompt_t
- typedef cmd_prompt_t * cmd_prompt_p
- typedef struct command_s command_t
- typedef command_t * command_p

Functions

- int cmd_prompt_Destroy (cmd_prompt_p cmd_prompt)
- cmd_prompt_p cmd_prompt_Initialize (struct mc_platform_s *mc_platform)
- void cmd_prompt_Start (struct mc_platform_s *mc_platform)
- int split_string (char ***args, const char *buf)
- int process_command (command_t *cmd)
- void * cmd_prompt_Thread (void *arg)
- int exec_command (command_t cmd, struct mc_platform_s *global)
- int dealloc_command (command_t *cmd)

7.23.1 Define Documentation

7.23.1.1 #define CMDLINE_SIZE 80

Definition at line 37 of file cmd_prompt.h.

7.23.2 Typedef Documentation

7.23.2.1 typedef cmd_prompt_t* cmd_prompt_p

Definition at line 44 of file cmd_prompt.h.

7.23.2.2 `typedef struct cmd_prompt_s cmd_prompt_t`**7.23.2.3 `typedef command_t* command_p`**

Definition at line 51 of file cmd_prompt.h.

7.23.2.4 `typedef struct command_s command_t`**7.23.3 Function Documentation****7.23.3.1 `int cmd_prompt_Destroy (cmd_prompt_p cmd_prompt)`**

Definition at line 130 of file cmd_prompt.c.

References MC_SUCCESS.

Referenced by mc_platform_Destroy().

7.23.3.2 `cmd_prompt_p cmd_prompt_Initialize (struct mc_platform_s * mc_platform)`**7.23.3.3 `void cmd_prompt_Start (struct mc_platform_s * mc_platform)`****7.23.3.4 `void* cmd_prompt_Thread (void * arg)`**

Definition at line 169 of file cmd_prompt.c.

References command_s::args, buf, deallocate_command(), exec_command(), command_s::index, command_s::num_args, process_command(), and split_string().

Referenced by cmd_prompt_Start().

7.23.3.5 `int deallocate_command (command_t * cmd)`

Definition at line 322 of file cmd_prompt.c.

References command_s::args, and command_s::num_args.

Referenced by cmd_prompt_Thread().

7.23.3.6 `int exec_command (command_t cmd, struct mc_platform_s * global)`**7.23.3.7 `int process_command (command_t * cmd)`**

Definition at line 288 of file cmd_prompt.c.

References command_s::args, command_cmds, command_s::index, and command_s::num_args.

Referenced by cmd_prompt_Thread().

7.23.3.8 `int split_string (char * args, const char * buf)`**

Definition at line 240 of file cmd_prompt.c.

Referenced by cmd_prompt_Thread().

7.24 /home/dko/Projects/mobilec/src/include/commands.h File Reference

```
#include "macros.h"
#include "mc_platform.h"
#include "commands.x.h"
```

Defines

- #define **COMMAND**(name, cmd, desc) int handler_##name (void *arg, **mc_platform_p** global);
- #define **COMMAND**(name, cmd, description) COMMAND_##name ,
- #define **COMMAND**(name, cmd, description) &handler_##name ,
- #define **COMMAND**(name, cmd, description) description ,
- #define **COMMAND**(name, cmd, description) cmd ,

Typedefs

- typedef int(* **cmd_handler_t**)(void *, **mc_platform_p** global)

Enumerations

- enum **command_indices_e**

Functions

- **COMMAND** (QUIT,"quit","This command ends the MobileC application.") COMMAND(HELP)
- This command displays **help** for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList **COMMAND** (PRINTLIST_MESSAGE,"printlist_message","This command prints all the list entries on the linked list:\n \ message_queue") COMMAND(PRINTLIST_AGENTS)
- This command displays **help** for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n **COMMAND** (FLUSH_AGENTS,"flush_agents","This command flushes all of the agents on the system which are still\n\ on the agent list.\n") COMMAND(COMPOSE_SEND)

Variables

- **cmd_handler_t cmd_handlers []**
- **char * command_descriptions []**
- **char * command_cmds []**

7.24.1 Define Documentation

7.24.1.1 #define COMMAND(name, cmd, description) cmd ,

Definition at line 48 of file commands.h.

7.24.1.2 #define COMMAND(name, cmd, description) description ,

Definition at line 48 of file commands.h.

7.24.1.3 #define COMMAND(name, cmd, description) &handler_##name ,

Definition at line 48 of file commands.h.

7.24.1.4 #define COMMAND(name, cmd, description) COMMAND_##name ,

Definition at line 48 of file commands.h.

7.24.1.5 #define COMMAND(name, cmd, desc) int handler_##name (void *arg, mc_platform_p global);

Definition at line 48 of file commands.h.

7.24.2 Typedef Documentation

7.24.2.1 typedef int(* cmd_handler_t)(void *, mc_platform_p global)

Definition at line 45 of file commands.h.

7.24.3 Enumeration Type Documentation

7.24.3.1 enum command_indices_e

Definition at line 47 of file commands.h.

7.24.4 Function Documentation

7.24.4.1 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n command_indices_e::COMMAND (FLUSH_AGENTS, "flush_agents", "This command flushes all of the agents on the system which are still\n on the agent list.\n")

Type Constraints

7.24.4.2 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList command_indices_e::COMMAND (PRINTLIST_MESSAGE, "printlist_message", "This command prints all the list entries on the linked list:\n \ message_queue")

Type Constraints

7.24.4.3 command_indices_e::COMMAND (QUIT, "quit", "This command ends the MobileC application.")

7.24.5 Variable Documentation

7.24.5.1 cmd_handler_t cmd_handlers[]

Definition at line 54 of file commands.h.

Referenced by exec_command().

7.24.5.2 char* command_cmds[]

Definition at line 68 of file commands.h.

Referenced by handler_HELP(), and process_command().

7.24.5.3 char* command_descriptions[]

Definition at line 61 of file commands.h.

Referenced by handler_COMPOSE_SEND(), handler_HELP(), and handler_SEND().

7.25 /home/dko/Projects/mobilec/src/include/commands.x.h File Reference

Functions

- **COMMAND** (QUIT,"quit","This command ends the MobileC application.") COMMAND(HELP)
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList **COMMAND** (PRINTLIST_MESSAGE,"printlist_message","This command prints all the list entries on the linked list:\n \ message_queue") COMMAND(PRINTLIST_AGENTS)
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n **COMMAND** (FLUSH_AGENTS,"flush_agents","This command flushes all of the agents on the system which are still\n\ on the agent list.\n") COMMAND(COMPOSE_SEND)

Variables

- [help](#)
- This command displays [help](#) for any command Usage [is](#)
- This command displays [help](#) for any command Usage [send](#)
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage [print_connectlist](#)
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList [printlist_agents](#)
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n [compose_send](#)

7.25.1 Function Documentation

- 7.25.1.1** This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n **COMMAND** (FLUSH_AGENTS, "flush_agents", "This command flushes all of the agents on the system which are still\n\ on the agent list.\n")

Type Constraints

- 7.25.1.2** This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList **COMMAND** (PRINTLIST_MESSAGE, "printlist_message", "This command prints all the list entries on the linked list:\n \ message_queue")

Type Constraints

7.25.1.3 COMMAND (QUIT, "quit", "This command ends the MobileC application.")

7.25.2 Variable Documentation

7.25.2.1 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n compose_send

Definition at line 62 of file commands.x.h.

7.25.2.2 help

Definition at line 40 of file commands.x.h.

7.25.2.3 This command displays help for any command Usage This command sends an agent XML file to a host Usage is

Definition at line 40 of file commands.x.h.

7.25.2.4 This command displays help for any command Usage This command sends an agent XML file to a host Usage print_connectlist

Definition at line 40 of file commands.x.h.

7.25.2.5 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList printlist_agents

Definition at line 55 of file commands.x.h.

7.25.2.6 This command displays help for any command Usage send

Definition at line 40 of file commands.x.h.

Referenced by extract_nonce_from_MA(), initiate_migration_process(), MC_End(), message_send_Thread(), mtp_http_InitializeFromConnection(), reply_migration_process(), and send_AES_en_MA().

7.26 /home/dko/Projects/mobilec/src/include/connection.h File Reference

```
#include <sys/types.h>
#include <netinet/in.h>
```

Data Structures

- struct [connection_s](#)

Typedefs

- [typedef struct connection_s connection_t](#)
- [typedef connection_t * connection_p](#)

Functions

- [connection_p connection_New \(void\)](#)
- [int connection_Destroy \(connection_p connection\)](#)
- [connection_p connection_Copy \(connection_p connection\)](#)
- [int connection_Print \(connection_p connection\)](#)
- [void connection_Close \(connection_p connection\)](#)
- [void connection_SetHosts \(connection_p connection, char *remote_host, char *local_host\)](#)
- [int connection_CreateMessage \(connection_p connection\)](#)
- [int connection_SendtoConnection \(connection_p connection, char *send_buffer\)](#)
- [int connection_RecvFromConnection \(connection_p connection, struct mc_platform_s *global\)](#)

7.26.1 Typedef Documentation

7.26.1.1 [typedef connection_t* connection_p](#)

Definition at line 66 of file connection.h.

7.26.1.2 [typedef struct connection_s connection_t](#)

7.26.2 Function Documentation

7.26.2.1 [void connection_Close \(connection_p connection\)](#)

7.26.2.2 [connection_p connection_Copy \(connection_p connection\)](#)

Definition at line 80 of file connection.c.

References `connection_s::addr`, `connection_s::clientfd`, `connection_s::connect_id`, `connection_New()`, `connection_s::remote_hostname`, `connection_s::serverfd`, and `strdup`.

7.26.2.3 int connection_CreateMessage (connection_p *connection*)**7.26.2.4 int connection_Destroy (connection_p *connection*)**

Definition at line 48 of file connection.c.

References connection_s::clientfd, MC_SUCCESS, and connection_s::remote_hostname.

Referenced by acc_connection_Thread(), and mc_platform_Destroy().

7.26.2.5 connection_p connection_New (void)

Definition at line 69 of file connection.c.

Referenced by connection_Copy(), and listen_Thread().

7.26.2.6 int connection_Print (connection_p *connection*)

Definition at line 92 of file connection.c.

References connection_s::connect_id, and connection_s::remote_hostname.

Referenced by handler_PRINT_CONNECTLIST().

7.26.2.7 int connection_RecvFromConnection (connection_p *connection*, struct mc_platform_s * *global*)**7.26.2.8 int connection_SendtoConnection (connection_p *connection*, char * *send_buffer*)****7.26.2.9 void connection_SetHosts (connection_p *connection*, char * *remote_host*, char * *local_host*)**

7.27 /home/dko/Projects/mobilec/src/include/df.h File Reference

```
#include "../mc_list/list.h"
#include "../include/macros.h"
#include "df_request.x.h"
```

Defines

- #define REQUEST(name, string, description) REQUEST_##name,
- #define REQUEST(name, string, description) int request_handler_##name (struct mc_platform_s *global, void* data);

Enumerations

- enum df_request_list_index_e
- enum service_types_e {
 ZERO, MISC, INSERT, SOME,
 TYPES, HERE }

Functions

- REQUEST(SUBSCRIBE,"subscribe","Subscribe to a directory facilitator") REQUEST(REGISTER)
- Register services with the directory facilitator REQUEST(DEREGISTER,"deregister","Deregisters mobile agent services from a directory facilitator.") REQUEST(SEARCH)
- STRUCT (df_request_list_node, MUTEX_T *lock;COND_T *cond;const char *command;void *data;int data_size;) STRUCT(df_search_results)
- STRUCT (df_request_search, MUTEX_T *lock;COND_T *cond;char *search_string;df_search_results_p search_results;) STRUCT(df_node)
- STRUCT (df, struct mc_platform_s *mc_platform;MUTEX_T *lock;COND_T *cond;list_p service_list;list_p request_list;int num_entries;int waiting;MUTEX_T *waiting_lock;COND_T *waiting_cond;THREAD_T thread;) STRUCT(df_deregister)
- int df_Add (struct df_s *df, struct df_node_s *node)
- int df_AddRequest (struct df_s *df, struct df_request_list_node_s *node)
- int df_Destroy (df_p df)
- df_p df_Initialize (struct mc_platform_s *mc_platform)
- int df_ProcessRequest (struct mc_platform_s *global)
- int df_SearchForService (df_p df, const char *searchstring, char ***agent_names, char ***service_names, int **agent_ids, int *num_entries)
- void df_Start (struct mc_platform_s *mc_platform)
- int df_node_Destroy (df_node_p df_node)
- int df_request_list_node_Destroy (df_request_list_node_p node)
- df_request_list_node_p df_request_list_node_New (void)
- int df_request_list_Destroy (list_t *df_request_list)
- df_request_search_p df_request_search_New (void)
- int df_request_search_Destroy (df_request_search_p node)
- void * df_Thread (void *arg)

Variables

- char ** `agent_names`
- char ** `service_names`
- int * `agent_ids`
- int `num_results`
- MUTEX_T * `lock`
- int `agent_id`
- char * `agent_name`
- int `num_services`
- enum `service_types_e` `service_types`
- char * `service_name`

7.27.1 Define Documentation

7.27.1.1 #define REQUEST(name, string, description) int request_handler_##name (struct mc_platform_s *global, void* data);

Definition at line 179 of file df.h.

7.27.1.2 #define REQUEST(name, string, description) REQUEST_##name,

Definition at line 179 of file df.h.

7.27.2 Enumeration Type Documentation

7.27.2.1 enum df_request_list_index_e

Definition at line 46 of file df.h.

7.27.2.2 enum service_types_e

Enumerator:

ZERO

MISC

INSERT

SOME

TYPES

HERE

Definition at line 53 of file df.h.

7.27.3 Function Documentation

7.27.3.1 int df_Add (struct df_s * *df*, struct df_node_s * *node*)

Definition at line 50 of file df.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), and MC_SUCCESS.

Referenced by request_handler_REGISTER().

7.27.3.2 int df_AddRequest (struct df_s * *df*, struct df_request_list_node_s * *node*)

Definition at line 62 of file df.c.

References ListAdd(), ListWRLock(), and ListWRUnlock().

Referenced by MC_DeregisterService(), MC_RegisterService(), and MC_SearchForService().

7.27.3.3 int df_Destroy (df_p *df*)

Definition at line 75 of file df.c.

References COND_DESTROY, df_node_Destroy(), df_request_list_Destroy(), ListPop(), ListTerminate(), ListWRLock(), ListWRUnlock(), MC_SUCCESS, MUTEX_DESTROY, and MUTEX_LOCK.

Referenced by mc_platform_Destroy().

7.27.3.4 df_p df_Initialize (struct mc_platform_s * *mc_platform*)

7.27.3.5 int df_node_Destroy (df_node_p *df_node*)

Definition at line 372 of file df.c.

References MC_SUCCESS, and MUTEX_LOCK.

Referenced by df_Destroy().

7.27.3.6 int df_ProcessRequest (struct mc_platform_s * *global*)

Definition at line 128 of file df.c.

References mc_platform_s::df, ListPop(), ListWRLock(), ListWRUnlock(), MC_ERR_EMPTY, and MC_ERR_INVALID.

Referenced by df_Thread().

7.27.3.7 int df_request_list_Destroy (list_t * *df_request_list*)

Definition at line 320 of file df.c.

References df_request_list_node_Destroy(), ListPop(), ListTerminate(), ListWRLock(), ListWRUnlock(), and MC_SUCCESS.

Referenced by df_Destroy().

7.27.3.8 int df_request_list_node_Destroy (df_request_list_node_p node)

Definition at line 291 of file df.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by df_request_list_Destroy(), and MC_SearchForService().

7.27.3.9 df_request_list_node_p df_request_list_node_New (void)

Definition at line 302 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, and MUTEX_T.

Referenced by MC_DeregisterService(), MC_RegisterService(), and MC_SearchForService().

7.27.3.10 int df_request_search_Destroy (df_request_search_p node)

Definition at line 359 of file df.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by MC_SearchForService().

7.27.3.11 df_request_search_p df_request_search_New (void)

Definition at line 344 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, MUTEX_T, and search.

Referenced by MC_SearchForService().

7.27.3.12 int df_SearchForService (df_p df, const char * searchstring, char * agent_names, char *** service_names, int ** agent_ids, int * num_entries)**

Definition at line 175 of file df.c.

References MC_ERR_NOT_FOUND, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, listNode_s::next, listNode_s::node_data, and num_services.

Referenced by request_handler_SEARCH().

7.27.3.13 void df_Start (struct mc_platform_s * mc_platform)**7.27.3.14 void* df_Thread (void * arg)**

Definition at line 386 of file df.c.

References COND_BROADCAST, mc_platform_s::df, df_ProcessRequest(), ListRDLock(), ListRDUlock(), ListRDWait(), MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by df_Start().

7.27.3.15 Register services with the directory facilitator df_request_list_index_e::REQUEST (DEREGISTER, "deregister", "Deregisters mobile agent services from a directory facilitator.")

Type Constraints

7.27.3.16 df_request_list_index_e::REQUEST (SUBSCRIBE, "subscribe", "Subscribe to a directory facilitator")

7.27.3.17 STRUCT (df, struct mc_platform_s *mc_platform;MUTEX_T *lock;COND_T *cond;list_p service_list;list_p request_list;int num_entries;int waiting;MUTEX_T *waiting_lock;COND_T *waiting_cond;THREAD_T thread;)

7.27.3.18 STRUCT (df_request_search, MUTEX_T *lock;COND_T *cond;char *search_string;df_search_results_p search_results;)

7.27.3.19 STRUCT (df_request_list_node, MUTEX_T *lock;COND_T *cond;const char *command;void *data;int data_size;)

7.27.4 Variable Documentation

7.27.4.1 int agent_id

Definition at line 90 of file df.h.

7.27.4.2 int* agent_ids

Definition at line 75 of file df.h.

7.27.4.3 char* agent_name

Definition at line 91 of file df.h.

7.27.4.4 char agent_names**

Definition at line 73 of file df.h.

7.27.4.5 MUTEX_T* lock

Definition at line 88 of file df.h.

7.27.4.6 int num_results

Definition at line 76 of file df.h.

7.27.4.7 int num_services

Definition at line 93 of file df.h.

Referenced by df_SearchForService().

7.27.4.8 char* service_name

Definition at line 115 of file df.h.

7.27.4.9 char ** service_names

Definition at line 74 of file df.h.

7.27.4.10 enum service_types_e service_types

Definition at line 95 of file df.h.

7.28 /home/dko/Projects/mobilec/src/include/df_request.x.h File Reference

Functions

- [REQUEST](#) (SUBSCRIBE, "subscribe", "Subscribe to a directory facilitator") REQUEST(REGISTER)
- Register services with the directory facilitator [REQUEST](#) (DEREGISTER, "deregister", "Deregisters mobile agent services from a directory facilitator.") REQUEST(SEARCH)

Variables

- [register](#)
- Register services with the directory facilitator [search](#)

7.28.1 Function Documentation

7.28.1.1 Register services with the directory facilitator REQUEST (DEREGISTER, "deregister", "Deregisters mobile agent services from a directory facilitator.")

Type Constraints

7.28.1.2 REQUEST (SUBSCRIBE, "subscribe", "Subscribe to a directory facilitator")

7.28.2 Variable Documentation

7.28.2.1 register

Definition at line 43 of file df_request.x.h.

7.28.2.2 Register services with the directory facilitator search

Definition at line 54 of file df_request.x.h.

Referenced by df_request_search_New(), MC_SearchForService(), and request_handler_SEARCH().

7.29 /home/dko/Projects/mobilec/src/include/dynstring.h File Reference

Data Structures

- struct [dynstring_s](#)

Defines

- #define [COMPOSE_BLOCKSIZE](#) 1024

TypeDefs

- typedef struct [dynstring_s](#) [dynstring_t](#)
- typedef [dynstring_t](#) * [dynstring_p](#)

Functions

- [dynstring_t](#) * [dynstring_New](#) (void)
- int [dynstring_Append](#) ([dynstring_t](#) *msg, const char *str)
- int [dynstring_Destroy](#) ([dynstring_t](#) *dynstring)

7.29.1 Define Documentation

7.29.1.1 #define COMPOSE_BLOCKSIZE 1024

Definition at line 8 of file dynstring.h.

Referenced by [dynstring_Append\(\)](#), and [dynstring_New\(\)](#).

7.29.2 TypeDef Documentation

7.29.2.1 typedef [dynstring_t](#)* [dynstring_p](#)

Definition at line 14 of file dynstring.h.

7.29.2.2 typedef struct [dynstring_s](#) [dynstring_t](#)

7.29.3 Function Documentation

7.29.3.1 int [dynstring_Append](#) ([dynstring_t](#) * msg, const char * str)

Definition at line 30 of file dynstring.c.

References [COMPOSE_BLOCKSIZE](#), [dynstring_s::len](#), [dynstring_s::message](#), and [dynstring_s::size](#).

Referenced by [fipa_acl_Compose\(\)](#), [fipa_agent_identifier_Compose\(\)](#), [fipa_agent_identifier_set_Compose\(\)](#), [fipa_DateTime_Compose\(\)](#), [fipa_envelope_Compose_from\(\)](#), [fipa_number_Compose\(\)](#),

fipa_performative_Compose(), fipa_protocol_Compose(), fipa_string_Compose(), fipa_url_Compose(), fipa_url_sequence_Compose(), fipa_word_Compose(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

7.29.3.2 int dynstring_Destroy (dynstring_t * *dynstring*)

Definition at line 53 of file dynstring.c.

References dynstring_s::message.

Referenced by fipa_envelope_Compose_from(), MC_AclSend(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

7.29.3.3 dynstring_t* dynstring_New (void)

Definition at line 14 of file dynstring.c.

References COMPOSE_BLOCKSIZE, dynstring_s::len, dynstring_s::message, and dynstring_s::size.

Referenced by fipa_acl_Compose(), fipa_envelope_Compose_from(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

7.30 /home/dko/Projects/mobilec/src/include/fipa_acl.h File Reference

```
#include "dynstring.h"
```

Data Structures

- struct [fipa_acl_message_s](#)
- struct [fipa_message_string_s](#)
- struct [fipa_url_sequence_s](#)
- struct [fipa_agent_identifier_set_s](#)
- struct [fipa_agent_identifier_s](#)
- struct [fipa_expression_s](#)
- union [fipa_expression_s::content_u](#)
- struct [fipa_word_s](#)
- struct [fipa_string_s](#)
- struct [fipa_DateTime_s](#)
- struct [fipa_url_s](#)
- struct [fipa_number_s](#)

Typedefs

- typedef enum [fipa_expression_type_e](#) [fipa_expression_type_t](#)
- typedef struct [fipa_acl_message_s](#) [fipa_acl_message_t](#)
- typedef [fipa_acl_message_t](#) * [fipa_acl_message_p](#)
- typedef struct [fipa_message_string_s](#) [fipa_message_string_t](#)
- typedef [fipa_message_string_t](#) * [fipa_message_string_p](#)
- typedef struct [fipa_url_sequence_s](#) [fipa_url_sequence_t](#)
- typedef [fipa_url_sequence_t](#) * [fipa_url_sequence_p](#)
- typedef struct [fipa_agent_identifier_set_s](#) [fipa_agent_identifier_set_t](#)
- typedef [fipa_agent_identifier_set_t](#) * [fipa_agent_identifier_set_p](#)
- typedef struct [fipa_agent_identifier_s](#) [fipa_agent_identifier_t](#)
- typedef [fipa_agent_identifier_t](#) * [fipa_agent_identifier_p](#)
- typedef struct [fipa_expression_s](#) [fipa_expression_t](#)
- typedef [fipa_expression_t](#) * [fipa_expression_p](#)
- typedef struct [fipa_word_s](#) [fipa_word_t](#)
- typedef [fipa_word_t](#) * [fipa_word_p](#)
- typedef struct [fipa_string_s](#) [fipa_string_t](#)
- typedef [fipa_string_t](#) * [fipa_string_p](#)
- typedef struct [fipa_DateTime_s](#) [fipa_DateTime_t](#)
- typedef [fipa_DateTime_t](#) * [fipa_DateTime_p](#)
- typedef struct [fipa_url_s](#) [fipa_url_t](#)
- typedef [fipa_url_t](#) * [fipa_url_p](#)
- typedef struct [fipa_number_s](#) [fipa_number_t](#)
- typedef [fipa_number_t](#) * [fipa_number_p](#)

Enumerations

- enum `fipa_performative_e` {

FIPA_ERROR = -1, FIPA_ZERO, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE,

FIPA_CANCEL, FIPA_CALL_FOR_PROPOSAL, FIPA_CONFIRM, FIPA_DISCONFIRM,

FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF,

FIPA_NOT_UNDERSTOOD, FIPA_PROPAGATE, FIPA_PROPOSE, FIPA_PROXY,

FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL,

FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA-

SUBSCRIBE,

FIPA_ERROR = -1, FIPA_ZERO, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE,

FIPA_CANCEL, FIPA_CALL_FOR_PROPOSAL, FIPA_CONFIRM, FIPA_DISCONFIRM,

FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF,

FIPA_NOT_UNDERSTOOD, FIPA_PROPAGATE, FIPA_PROPOSE, FIPA_PROXY,

FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL,

FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA-

SUBSCRIBE }
- enum `fipa_protocol_e` {

FIPA_PROTOCOL_ERROR = -1, FIPA_PROTOCOL_NONE, FIPA_PROTOCOL_REQUEST,

FIPA_PROTOCOL_QUERY,

FIPA_PROTOCOL_REQUEST_WHEN, FIPA_PROTOCOL_CONTRACT_NET, FIPA-

PROTOCOL_ITERATED_CONTRACT_NET, FIPA_PROTOCOL_ENGLISH_AUCTION,

FIPA_PROTOCOL_DUTCH_AUCTION, FIPA_PROTOCOL_BROKERING, FIPA-

PROTOCOL_RECRUITING, FIPA_PROTOCOL_SUBSCRIBE,

FIPA_PROTOCOL_PROPOSE, FIPA_PROTOCOL_END }
- enum `fipa_expression_type_e` {

FIPA_EXPR_ZERO, FIPA_EXPR_WORD, FIPA_EXPR_STRING, FIPA_EXPR_NUMBER,

FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION }

Functions

- int `fipa_performative_Compose` (`dynstring_t` *`msg`, enum `fipa_performative_e` `performative`)
- int `fipa_protocol_Compose` (`dynstring_t` *`msg`, enum `fipa_protocol_e` `protocol`)
- `fipa_acl_message_t` * `fipa_acl_message_New` (`void`)
- int `fipa_acl_message_Destroy` (`fipa_acl_message_t` *`message`)
- `fipa_acl_message_t` * `fipa_acl_message_Copy` (`fipa_acl_message_t` *`src`)
- int `fipa_acl_Compose` (`dynstring_t` **`msg`, `fipa_acl_message_t` *`acl`)
- `fipa_message_string_t` * `fipa_message_string_New` (`void`)
- int `fipa_message_string_Destroy` (`fipa_message_string_t` *`message`)
- `fipa_message_string_t` * `fipa_message_string_Copy` (`fipa_message_string_t` *`src`)
- `fipa_url_sequence_t` * `fipa_url_sequence_New` (`void`)
- int `fipa_url_sequence_Destroy` (`fipa_url_sequence_t` *`sequence`)
- `fipa_url_sequence_t` * `fipa_url_sequence_Copy` (`fipa_url_sequence_t` *`src`)
- int `fipa_url_sequence_Compose` (`dynstring_t` *`msg`, `fipa_url_sequence_t` *`urls`)
- `fipa_agent_identifier_set_t` * `fipa_agent_identifier_set_New` (`void`)
- int `fipa_agent_identifier_set_Destroy` (`fipa_agent_identifier_set_t` *`idset`)

- `fipa_agent_identifier_set_t * fipa_agent_identifier_set_Copy (fipa_agent_identifier_set_t *src)`
- `int fipa_agent_identifier_set_Compose (dynstring_t *msg, fipa_agent_identifier_set_t *ids)`
- `fipa_agent_identifier_t * fipa_agent_identifier_New (void)`
- `int fipa_agent_identifier_Destroy (fipa_agent_identifier_t *id)`
- `fipa_agent_identifier_t * fipa_agent_identifier_Copy (fipa_agent_identifier_t *src)`
- `int fipa_agent_identifier_Compose (dynstring_t *msg, fipa_agent_identifier_t *id)`
- `fipa_expression_t * fipa_expression_New (void)`
- `int fipa_expression_Destroy (fipa_expression_t *expr)`
- `fipa_expression_t * fipa_expression_Copy (fipa_expression_t *src)`
- `int fipa_expression_Compose (dynstring_t *msg, fipa_expression_t *expr)`
- `fipa_word_t * fipa_word_New (void)`
- `int fipa_word_Destroy (fipa_word_t *word)`
- `fipa_word_t * fipa_word_Copy (fipa_word_t *src)`
- `int fipa_word_Compose (dynstring_t *msg, fipa_word_t *word)`
- `fipa_string_t * fipa_string_New (void)`
- `int fipa_string_Destroy (fipa_string_t *str)`
- `fipa_string_t * fipa_string_Copy (fipa_string_t *src)`
- `int fipa_string_Compose (dynstring_t *msg, fipa_string_t *string)`
- `fipa_DateTime_t * fipa_DateTime_New (void)`
- `int fipa_DateTime_Destroy (fipa_DateTime_t *dt)`
- `fipa_DateTime_t * fipa_DateTime_Copy (fipa_DateTime_t *src)`
- `int fipa_DateTime_Compose (dynstring_t *msg, fipa_DateTime_t *date)`
- `fipa_url_t * fipa_url_New (void)`
- `int fipa_url_Destroy (fipa_url_t *url)`
- `fipa_url_t * fipa_url_Copy (fipa_url_t *src)`
- `int fipa_url_Compose (dynstring_t *msg, fipa_url_t *url)`
- `fipa_number_t * fipa_number_New (void)`
- `int fipa_number_Destroy (fipa_number_t *number)`
- `fipa_number_t * fipa_number_Copy (fipa_number_t *src)`
- `int fipa_number_Compose (dynstring_t *msg, fipa_number_t *number)`
- `int fipa_acl_Parse (struct fipa_acl_message_s *acl, fipa_message_string_p message)`
- `int fipa_message_parameter_Parse (struct fipa_acl_message_s *acl, fipa_message_string_p message)`
- `int fipa_protocol_type_Parse (enum fipa_protocol_e *protocol, fipa_message_string_p message)`
- `int fipa_message_type_Parse (enum fipa_performative_e *performative, fipa_message_string_p message)`
- `int fipa_GetAtom (fipa_message_string_p message, char expected_atom)`
- `int fipa_word_Parse (fipa_word_t **word, fipa_message_string_p message)`
- `int fipa_CheckNextToken (const fipa_message_string_p message, const char *token)`
- `int fipa_expression_Parse (fipa_expression_t **expression, fipa_message_string_p message)`
- `int fipa_GetNextWord (char **word, const fipa_message_string_p message)`
- `int fipa_GetWholeToken (char **word, const fipa_message_string_p message)`
- `int fipa_datetime_Parse (fipa_DateTime_p *datetime, fipa_message_string_p message)`
- `int fipa_string_Parse (fipa_string_p *fipa_string, fipa_message_string_p message)`
- `int fipa_agent_identifier_Parse (fipa_agent_identifier_p *aid, fipa_message_string_p message)`
- `int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p *agent_ids, fipa_message_string_p message)`
- `int fipa_url_sequence_Parse (fipa_url_sequence_p *urls, fipa_message_string_p message)`
- `int fipa_url_Parse (fipa_url_p *url, fipa_message_string_p message)`
- `struct fipa_acl_message_s * fipa_Reply (struct fipa_acl_message_s *acl)`

7.30.1 Typedef Documentation

7.30.1.1 **typedef fipa_acl_message_t* fipa_acl_message_p**

Definition at line 136 of file fipa_acl.h.

7.30.1.2 **typedef struct fipa_acl_message_s fipa_acl_message_t**

7.30.1.3 **typedef fipa_agent_identifier_t* fipa_agent_identifier_p**

Definition at line 186 of file fipa_acl.h.

7.30.1.4 **typedef fipa_agent_identifier_set_t* fipa_agent_identifier_set_p**

Definition at line 172 of file fipa_acl.h.

7.30.1.5 **typedef struct fipa_agent_identifier_set_s fipa_agent_identifier_set_t**

7.30.1.6 **typedef struct fipa_agent_identifier_s fipa_agent_identifier_t**

7.30.1.7 **typedef fipa_DateTime_t* fipa_DateTime_p**

Definition at line 246 of file fipa_acl.h.

7.30.1.8 **typedef struct fipa_DateTime_s fipa_DateTime_t**

7.30.1.9 **typedef fipa_expression_t* fipa_expression_p**

Definition at line 205 of file fipa_acl.h.

7.30.1.10 **typedef struct fipa_expression_s fipa_expression_t**

7.30.1.11 **typedef enum fipa_expression_type_e fipa_expression_type_t**

7.30.1.12 **typedef fipa_message_string_t* fipa_message_string_p**

Definition at line 148 of file fipa_acl.h.

7.30.1.13 **typedef struct fipa_message_string_s fipa_message_string_t**

7.30.1.14 **typedef fipa_number_t* fipa_number_p**

Definition at line 268 of file fipa_acl.h.

7.30.1.15 **typedef struct fipa_number_s fipa_number_t**

7.30.1.16 **typedef fipa_string_t* fipa_string_p**

Definition at line 227 of file fipa_acl.h.

7.30.1.17 `typedef struct fipa_string_s fipa_string_t`

7.30.1.18 `typedef fipa_url_t* fipa_url_p`

Definition at line 257 of file fipa_acl.h.

7.30.1.19 `typedef fipa_url_sequence_t* fipa_url_sequence_p`

Definition at line 159 of file fipa_acl.h.

7.30.1.20 `typedef struct fipa_url_sequence_s fipa_url_sequence_t`

7.30.1.21 `typedef struct fipa_url_s fipa_url_t`

7.30.1.22 `typedef fipa_word_t* fipa_word_p`

Definition at line 216 of file fipa_acl.h.

7.30.1.23 `typedef struct fipa_word_s fipa_word_t`

7.30.2 Enumeration Type Documentation

7.30.2.1 `enum fipa_expression_type_e`

Enumerator:

FIPA_EXPR_ZERO
FIPA_EXPR_WORD
FIPA_EXPR_STRING
FIPA_EXPR_NUMBER
FIPA_EXPR_DATETIME
FIPA_EXPR_EXPRESSION

Definition at line 94 of file fipa_acl.h.

7.30.2.2 `enum fipa_performative_e`

Enumerator:

FIPA_ERROR
FIPA_ZERO
FIPA_ACCEPT_PROPOSAL
FIPA_AGREE
FIPA_CANCEL
FIPA_CALL_FOR_PROPOSAL
FIPA_CONFIRM
FIPA_DISCONFIRM

FIPA_FAILURE
FIPA_INFORM
FIPA_INFORM_IF
FIPA_INFORM_REF
FIPA_NOT_UNDERSTOOD
FIPA_PROPOGATE
FIPA_PROPOSE
FIPA_PROXY
FIPA_QUERY_IF
FIPA_QUERY_REF
FIPA_REFUSE
FIPA_REJECT_PROPOSAL
FIPA_REQUEST
FIPA_REQUEST_WHEN
FIPA_REQUEST_WHENEVER
FIPA_SUBSCRIBE
FIPA_ERROR
FIPA_ZERO
FIPA_ACCEPT_PROPOSAL
FIPA_AGREE
FIPA_CANCEL
FIPA_CALL_FOR_PROPOSAL
FIPA_CONFIRM
FIPA_DISCONFIRM
FIPA_FAILURE
FIPA_INFORM
FIPA_INFORM_IF
FIPA_INFORM_REF
FIPA_NOT_UNDERSTOOD
FIPA_PROPOGATE
FIPA_PROPOSE
FIPA_PROXY
FIPA_QUERY_IF
FIPA_QUERY_REF
FIPA_REFUSE
FIPA_REJECT_PROPOSAL
FIPA_REQUEST
FIPA_REQUEST_WHEN
FIPA_REQUEST_WHENEVER
FIPA_SUBSCRIBE

Definition at line 41 of file fipa_acl.h.

7.30.2.3 enum fipa_protocol_e

Enumerator:

```
FIPA_PROTOCOL_ERROR
FIPA_PROTOCOL_NONE
FIPA_PROTOCOL_REQUEST
FIPA_PROTOCOL_QUERY
FIPA_PROTOCOL_REQUEST_WHEN
FIPA_PROTOCOL_CONTRACT_NET
FIPA_PROTOCOL_ITERATED_CONTRACT_NET
FIPA_PROTOCOL_ENGLISH_AUCTION
FIPA_PROTOCOL_DUTCH_AUCTION
FIPA_PROTOCOL_BROKERING
FIPA_PROTOCOL_RECRUITING
FIPA_PROTOCOL_SUBSCRIBE
FIPA_PROTOCOL_PROPOSE
FIPA_PROTOCOL_END
```

Definition at line 72 of file fipa_acl.h.

7.30.3 Function Documentation

7.30.3.1 int fipa_acl_Compose (dynstring_t ** msg, fipa_acl_message_t * acl)

Definition at line 1233 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_acl_message_s::conversation_id, dynstring_Append(), dynstring_New(), fipa_acl_message_s::encoding, fipa_agent_identifier_Compose(), fipa_agent_identifier_set_Compose(), fipa_DateTime_Compose(), fipa_expression_Compose(), fipa_performative_Compose(), fipa_protocol_Compose(), FIPA_PROTOCOL_NONE, fipa_string_Compose(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, fipa_acl_message_s::ontology, fipa_acl_message_s::performative, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by MC_AclSend().

7.30.3.2 fipa_acl_message_t* fipa_acl_message_Copy (fipa_acl_message_t * src)

Definition at line 86 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_acl_message_s::conversation_id, fipa_acl_message_s::encoding, fipa_acl_message_New(), fipa_agent_identifier_Copy(), fipa_agent_identifier_set_Copy(), fipa_DateTime_Copy(), fipa_expression_Copy(), fipa_string_Copy(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, fipa_acl_message_s::ontology, fipa_acl_message_s::performative, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by MC_AclSend().

7.30.3.3 int fipa_acl_message_Destroy (fipa_acl_message_t * *message*)

Definition at line 65 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_acl_message_s::conversation_id, fipa_acl_message_s::encoding, fipa_agent_identifier_Destroy(), fipa_agent_identifier_set_Destroy(), fipa_DateTime_Destroy(), fipa_expression_Destroy(), fipa_string_Destroy(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, fipa_acl_message_s::ontology, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by acc_connection_Thread(), agent_Destroy(), and MC_AclDestroy().

7.30.3.4 fipa_acl_message_t* fipa_acl_message_New (void)

Definition at line 57 of file fipa_acl.c.

Referenced by acc_connection_Thread(), fipa_acl_message_Copy(), fipa_Reply(), and MC_AclNew().

7.30.3.5 int fipa_acl_Parse (struct fipa_acl_message_s * *acl*, fipa_message_string_p *message*)**7.30.3.6 int fipa_agent_identifier_Compose (dynstring_t * *msg*, fipa_agent_identifier_t * *id*)**

Definition at line 1447 of file fipa_acl.c.

References fipa_agent_identifier_s::addresses, dynstring_Append(), fipa_agent_identifier_set_Compose(), fipa_url_sequence_Compose(), fipa_agent_identifier_s::name, fipa_agent_identifier_set_s::num, fipa_url_sequence_s::num, and fipa_agent_identifier_s::resolvers.

Referenced by fipa_acl_Compose(), and fipa_agent_identifier_set_Compose().

7.30.3.7 fipa_agent_identifier_t* fipa_agent_identifier_Copy (fipa_agent_identifier_t * *src*)

Definition at line 236 of file fipa_acl.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_New(), fipa_agent_identifier_set_Copy(), fipa_url_sequence_Copy(), fipa_agent_identifier_s::name, fipa_agent_identifier_s::resolvers, and strdup.

Referenced by fipa_acl_message_Copy(), fipa_acl_Param_Copy(), fipa_agent_identifier_set_Copy(), and fipa_Reply().

7.30.3.8 int fipa_agent_identifier_Destroy (fipa_agent_identifier_t * *id*)

Definition at line 224 of file fipa_acl.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_set_Destroy(), fipa_url_sequence_Destroy(), fipa_agent_identifier_s::name, and fipa_agent_identifier_s::resolvers.

Referenced by fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), fipa_agent_identifier_set_Destroy(), and MC_AclSetSender().

7.30.3.9 fipa_agent_identifier_t* fipa_agent_identifier_New (void)

Definition at line 216 of file fipa_acl.c.

Referenced by fipa_agent_identifier_Copy(), fipa_envelope_ParseAgentIdentifier(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.30.3.10 int fipa_agent_identifier_Parse (fipa_agent_identifier_p * aid, fipa_message_string_p message)

Definition at line 1033 of file fipa_acl.c.

References CHECK_NULL, fipa_word_s::content, fipa_agent_identifier_set_Parse(), fipa_GetAtom(), fipa_url_sequence_Parse(), fipa_word_Destroy(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_agent_identifier_set_Parse(), and fipa_message_parameter_Parse().

7.30.3.11 int fipa_agent_identifier_set_Compose (dynstring_t * msg, fipa_agent_identifier_set_t * ids)

Definition at line 1434 of file fipa_acl.c.

References dynstring_Append(), fipa_agent_identifier_Compose(), fipa_agent_identifier_set_s::fipa_agent_identifiers, and fipa_agent_identifier_set_s::num.

Referenced by fipa_acl_Compose(), and fipa_agent_identifier_Compose().

7.30.3.12 fipa_agent_identifier_set_t* fipa_agent_identifier_set_Copy (fipa_agent_identifier_set_t * src)

Definition at line 195 of file fipa_acl.c.

References fipa_agent_identifier_Copy(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_agent_identifier_set_s::num, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_acl_message_Copy(), fipa_acl_Param_Copy(), fipa_agent_identifier_Copy(), and fipa_Reply().

7.30.3.13 int fipa_agent_identifier_set_Destroy (fipa_agent_identifier_set_t * idset)

Definition at line 183 of file fipa_acl.c.

References fipa_agent_identifier_Destroy(), fipa_agent_identifier_set_s::fipa_agent_identifiers, and fipa_agent_identifier_set_s::num.

Referenced by fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_agent_identifier_Destroy().

7.30.3.14 fipa_agent_identifier_set_t* fipa_agent_identifier_set_New (void)

Definition at line 175 of file fipa_acl.c.

Referenced by fipa_agent_identifier_set_Copy(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), fipa_Reply(), MC_AclAddReceiver(), and MC_AclAddReplyTo().

**7.30.3.15 int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p * agent_ids,
fipa_message_string_p message)**

Definition at line 1192 of file fipa_acl.c.

References fipa_word_s::content, fipa_agent_identifier_Parse(), fipa_GetAtom(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_agent_identifier_Parse(), and fipa_message_parameter_Parse().

7.30.3.16 int fipa_CheckNextToken (const fipa_message_string_p message, const char * token)

Definition at line 695 of file fipa_acl.c.

References fipa_message_string_s::parse.

Referenced by fipa_expression_Parse().

7.30.3.17 int fipa_DateTime_Compose (dynstring_t * msg, fipa_DateTime_t * date)

Definition at line 1520 of file fipa_acl.c.

References buf, fipa_DateTime_s::day, dynstring_Append(), fipa_DateTime_s::hour, fipa_DateTime_s::millisecond, fipa_DateTime_s::minute, fipa_DateTime_s::month, fipa_DateTime_s::second, fipa_DateTime_s::sign, and fipa_DateTime_s::year.

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

7.30.3.18 fipa_DateTime_t* fipa_DateTime_Copy (fipa_DateTime_t * src)

Definition at line 399 of file fipa_acl.c.

References fipa_DateTime_New().

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_message_Copy(), fipa_acl_Param_Copy(), and fipa_expression_Copy().

7.30.3.19 int fipa_DateTime_Destroy (fipa_DateTime_t * dt)

Definition at line 392 of file fipa_acl.c.

Referenced by fipa_acl_envelope_Received_Destroy(), fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_expression_Destroy().

7.30.3.20 fipa_DateTime_t* fipa_DateTime_New (void)

Definition at line 384 of file fipa_acl.c.

Referenced by fipa_DateTime_Copy().

7.30.3.21 int fipa_datetime_Parse (fipa_DateTime_p * datetime, fipa_message_string_p message)

Definition at line 850 of file fipa_acl.c.

References `buf`, `fipa_GetWholeToken()`, `MC_ERR_PARSE`, `MC_SUCCESS`, `fipa_message_string_s::parse`, and `fipa_DateTime_s::sign`.

Referenced by `fipa_envelope_HandleDate()`, `fipa_envelope_HandleReceived()`, `fipa_expression_Parse()`, and `fipa_message_parameter_Parse()`.

7.30.3.22 int fipa_expression_Compose (dynstring_t * msg, fipa_expression_t * expr)

Definition at line 1473 of file `fipa_acl.c`.

References `fipa_expression_s::content`, `fipa_expression_s::content_u::datetime`, `fipa_expression_s::content_u::expression`, `fipa_DateTime_Compose()`, `FIPA_EXPR_DATETIME`, `FIPA_EXPR_EXPRESSION`, `FIPA_EXPR_NUMBER`, `FIPA_EXPR_STRING`, `FIPA_EXPR_WORD`, `fipa_expression_Compose()`, `fipa_number_Compose()`, `fipa_string_Compose()`, `fipa_word_Compose()`, `MC_ERR_PARSE`, `fipa_expression_s::content_u::number`, `fipa_expression_s::content_u::string`, `fipa_expression_s::type`, and `fipa_expression_s::content_u::word`.

Referenced by `fipa_acl_Compose()`, and `fipa_expression_Compose()`.

7.30.3.23 fipa_expression_t* fipa_expression_Copy (fipa_expression_t * src)

Definition at line 287 of file `fipa_acl.c`.

References `fipa_expression_s::content`, `fipa_expression_s::content_u::datetime`, `fipa_expression_s::content_u::expression`, `fipa_DateTime_Copy()`, `FIPA_EXPR_DATETIME`, `FIPA_EXPR_EXPRESSION`, `FIPA_EXPR_NUMBER`, `FIPA_EXPR_STRING`, `FIPA_EXPR_WORD`, `fipa_expression_Copy()`, `fipa_expression_Destroy()`, `fipa_expression_New()`, `fipa_number_Copy()`, `fipa_string_Copy()`, `fipa_word_Copy()`, `fipa_expression_s::content_u::number`, `fipa_expression_s::content_u::string`, `fipa_expression_s::type`, and `fipa_expression_s::content_u::word`.

Referenced by `fipa_acl_message_Copy()`, `fipa_expression_Copy()`, and `fipa_Reply()`.

7.30.3.24 int fipa_expression_Destroy (fipa_expression_t * expr)

Definition at line 256 of file `fipa_acl.c`.

References `fipa_expression_s::content`, `fipa_expression_s::content_u::datetime`, `fipa_expression_s::content_u::expression`, `fipa_DateTime_Destroy()`, `FIPA_EXPR_DATETIME`, `FIPA_EXPR_EXPRESSION`, `FIPA_EXPR_NUMBER`, `FIPA_EXPR_STRING`, `FIPA_EXPR_WORD`, `fipa_expression_Destroy()`, `fipa_number_Destroy()`, `fipa_string_Destroy()`, `fipa_word_Destroy()`, `FREEMEM`, `fipa_expression_s::content_u::number`, `fipa_expression_s::content_u::string`, `fipa_expression_s::type`, and `fipa_expression_s::content_u::word`.

Referenced by `fipa_acl_message_Destroy()`, `fipa_expression_Copy()`, and `fipa_expression_Destroy()`.

7.30.3.25 fipa_expression_t* fipa_expression_New (void)

Definition at line 248 of file `fipa_acl.c`.

Referenced by `fipa_expression_Copy()`, and `MC_AclSetConversationID()`.

7.30.3.26 int fipa_expression_Parse (fipa_expression_t ** *expression*, fipa_message_string_p *message*)

Definition at line 714 of file fipa_acl.c.

References fipa_CheckNextToken(), fipa_datetime_Parse(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Parse(), fipa_GetAtom(), fipa_string_Parse(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_expression_s::type.

Referenced by fipa_expression_Parse(), and fipa_message_parameter_Parse().

7.30.3.27 int fipa_GetAtom (fipa_message_string_p *message*, char *expected_atom*)

Definition at line 630 of file fipa_acl.c.

References MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_acl_Parse(), fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_expression_Parse(), fipa_message_parameter_Parse(), fipa_string_Parse(), and fipa_url_sequence_Parse().

7.30.3.28 int fipa_GetNextWord (char ** *word*, const fipa_message_string_p *message*)

Definition at line 765 of file fipa_acl.c.

References ERR, MC_SUCCESS, and fipa_message_string_s::parse.

7.30.3.29 int fipa_GetWholeToken (char ** *word*, const fipa_message_string_p *message*)

Definition at line 813 of file fipa_acl.c.

References MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_datetime_Parse().

7.30.3.30 int fipa_message_parameter_Parse (struct fipa_acl_message_s * *acl*, fipa_message_string_p *message*)**7.30.3.31 fipa_message_string_t* fipa_message_string_Copy (fipa_message_string_t * *src*)**

Definition at line 128 of file fipa_acl.c.

References fipa_message_string_s::message, fipa_message_string_s::parse, and strdup.

7.30.3.32 int fipa_message_string_Destroy (fipa_message_string_t * *message*)

Definition at line 118 of file fipa_acl.c.

References fipa_message_string_s::message.

Referenced by acc_connection_Thread().

7.30.3.33 fipa_message_string_t* fipa_message_string_New (void)

Definition at line 110 of file fipa_acl.c.

Referenced by acc_connection_Thread().

**7.30.3.34 int fipa_message_type_Parse (enum fipa_performative_e * *performative*,
fipa_message_string_p *message*)**

Definition at line 568 of file fipa_acl.c.

References fipa_word_s::content, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE, FIPA_CALL_FOR_PROPOSAL, FIPA_CANCEL, FIPA_CONFIRM, FIPA_DISCONFIRM, FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF, FIPA_NOT_UNDERSTOOD, FIPA_PROPAGATE, FIPA_PROPOSE, FIPA_PROXY, FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL, FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_SUBSCRIBE, fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by fipa_acl_Parse().

7.30.3.35 int fipa_number_Compose (dynstring_t * *msg*, fipa_number_t * *number*)

Definition at line 1548 of file fipa_acl.c.

References dynstring_Append(), and fipa_number_s::str.

Referenced by fipa_expression_Compose().

7.30.3.36 fipa_number_t* fipa_number_Copy (fipa_number_t * *src*)

Definition at line 455 of file fipa_acl.c.

References fipa_number_New(), fipa_number_s::str, and strdup.

Referenced by fipa_expression_Copy().

7.30.3.37 int fipa_number_Destroy (fipa_number_t * *number*)

Definition at line 445 of file fipa_acl.c.

References fipa_number_s::str.

Referenced by fipa_expression_Destroy().

7.30.3.38 fipa_number_t* fipa_number_New (void)

Definition at line 437 of file fipa_acl.c.

Referenced by fipa_number_Copy().

**7.30.3.39 int fipa_performative_Compose (dynstring_t * *msg*, enum fipa_performative_e
performative)**

Definition at line 1346 of file fipa_acl.c.

References dynstring_Append(), FIPA_ACCEPT_PROPOSAL, FIPA_AGREE, FIPA_CALL_FOR_PROPOSAL, FIPA_CANCEL, FIPA_CONFIRM, FIPA_DISCONFIRM, FIPA_FAILURE,

FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF, FIPA_NOT_UNDERSTOOD, FIPA_PROPAGATE, FIPA_PROPOSE, FIPA_PROXY, FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL, FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_SUBSCRIBE, and MC_ERR_PARSE.

Referenced by fipa_acl_Compose().

7.30.3.40 int fipa_protocol_Compose (dynstring_t * msg, enum fipa_protocol_e protocol)

Definition at line 1303 of file fipa_acl.c.

References dynstring_Append(), FIPA_PROTOCOL_BROKERING, FIPA_PROTOCOL_CONTRACT_NET, FIPA_PROTOCOL_DUTCH_AUCTION, FIPA_PROTOCOL_ENGLISH_AUCTION, FIPA_PROTOCOL_ITERATED_CONTRACT_NET, FIPA_PROTOCOL_PROPOSE, FIPA_PROTOCOL_QUERY, FIPA_PROTOCOL_RECRUITING, FIPA_PROTOCOL_REQUEST, FIPA_PROTOCOL_REQUEST_WHEN, FIPA_PROTOCOL_SUBSCRIBE, and MC_ERR_PARSE.

Referenced by fipa_acl_Compose().

7.30.3.41 int fipa_protocol_type_Parse (enum fipa_protocol_e * protocol, fipa_message_string_p message)

Definition at line 528 of file fipa_acl.c.

References fipa_word_s::content, FIPA_PROTOCOL_BROKERING, FIPA_PROTOCOL_CONTRACT_NET, FIPA_PROTOCOL_DUTCH_AUCTION, FIPA_PROTOCOL_ENGLISH_AUCTION, FIPA_PROTOCOL_ITERATED_CONTRACT_NET, FIPA_PROTOCOL_PROPOSE, FIPA_PROTOCOL_QUERY, FIPA_PROTOCOL_RECRUITING, FIPA_PROTOCOL_REQUEST, FIPA_PROTOCOL_REQUEST_WHEN, FIPA_PROTOCOL_SUBSCRIBE, fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by fipa_message_parameter_Parse().

7.30.3.42 struct fipa_acl_message_s* fipa_Reply (struct fipa_acl_message_s * acl) [read]

Definition at line 1556 of file fipa_acl.c.

References fipa_acl_message_s::conversation_id, fipa_acl_message_New(), fipa_agent_identifier_Copy(), fipa_agent_identifier_set_Copy(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_expression_Copy(), fipa_agent_identifier_set_s::num, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_to, fipa_agent_identifier_set_s::retain_order, and fipa_acl_message_s::sender.

Referenced by MC_AclReply().

7.30.3.43 int fipa_string_Compose (dynstring_t * msg, fipa_string_t * string)

Definition at line 1511 of file fipa_acl.c.

References fipa_string_s::content, and dynstring_Append().

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

7.30.3.44 fipa_string_t* fipa_string_Copy (fipa_string_t * src)

Definition at line 374 of file fipa_acl.c.

References fipa_string_s::content, fipa_string_New(), and strdup.

Referenced by fipa_acl_message_Copy(), and fipa_expression_Copy().

7.30.3.45 int fipa_string_Destroy (fipa_string_t * str)

Definition at line 364 of file fipa_acl.c.

References fipa_string_s::content.

Referenced by fipa_acl_message_Destroy(), fipa_expression_Destroy(), and MC_AclSetContent().

7.30.3.46 fipa_string_t* fipa_string_New (void)

Definition at line 356 of file fipa_acl.c.

Referenced by fipa_string_Copy(), MC_AclSetContent(), and MC_AclSetConversationID().

7.30.3.47 int fipa_string_Parse (fipa_string_p * fipa_string, fipa_message_string_p message)

Definition at line 988 of file fipa_acl.c.

References fipa_string_s::content, fipa_GetAtom(), MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_expression_Parse(), and fipa_message_parameter_Parse().

7.30.3.48 int fipa_url_Compose (dynstring_t * msg, fipa_url_t * url)

Definition at line 1540 of file fipa_acl.c.

References dynstring_Append(), and fipa_url_s::str.

Referenced by fipa_url_sequence_Compose().

7.30.3.49 fipa_url_t* fipa_url_Copy (fipa_url_t * src)

Definition at line 427 of file fipa_acl.c.

References fipa_url_New(), fipa_url_s::str, and strdup.

Referenced by fipa_acl_envelope_Received_Copy(), and fipa_url_sequence_Copy().

7.30.3.50 int fipa_url_Destroy (fipa_url_t * url)

Definition at line 417 of file fipa_acl.c.

References fipa_url_s::str.

Referenced by fipa_acl_envelope_Received_Destroy(), and fipa_url_sequence_Destroy().

7.30.3.51 `fipa_url_t* fipa_url_New (void)`

Definition at line 409 of file fipa_acl.c.

Referenced by fipa_envelope_HandleReceived(), fipa_envelope_ParseAddresses(), fipa_url_Copy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.30.3.52 `int fipa_url_Parse (fipa_url_p * url, fipa_message_string_p message)`

Definition at line 1172 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_Destroy(), fipa_word_Parse(), and strdup.

Referenced by fipa_url_sequence_Parse().

7.30.3.53 `int fipa_url_sequence_Compose (dynstring_t * msg, fipa_url_sequence_t * urls)`

Definition at line 1421 of file fipa_acl.c.

References dynstring_Append(), fipa_url_Compose(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Compose().

7.30.3.54 `fipa_url_sequence_t* fipa_url_sequence_Copy (fipa_url_sequence_t * src)`

Definition at line 159 of file fipa_acl.c.

References fipa_url_Copy(), fipa_url_sequence_New(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Copy().

7.30.3.55 `int fipa_url_sequence_Destroy (fipa_url_sequence_t * sequence)`

Definition at line 147 of file fipa_acl.c.

References fipa_url_Destroy(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Destroy().

7.30.3.56 `fipa_url_sequence_t* fipa_url_sequence_New (void)`

Definition at line 139 of file fipa_acl.c.

Referenced by fipa_url_sequence_Copy(), fipa_url_sequence_Parse(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.30.3.57 `int fipa_url_sequence_Parse (fipa_url_sequence_p * urls, fipa_message_string_p message)`

Definition at line 1140 of file fipa_acl.c.

References fipa_word_s::content, fipa_GetAtom(), fipa_url_Parse(), fipa_url_sequence_New(), fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by fipa_agent_identifier_Parse().

7.30.3.58 int fipa_word_Compose (dynstring_t * *msg*, fipa_word_t * *word*)

Definition at line 1503 of file fipa_acl.c.

References fipa_word_s::content, and dynstring_Append().

Referenced by fipa_expression_Compose().

7.30.3.59 fipa_word_t* fipa_word_Copy (fipa_word_t * *src*)

Definition at line 346 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_New(), and strdup.

Referenced by fipa_expression_Copy().

7.30.3.60 int fipa_word_Destroy (fipa_word_t * *word*)

Definition at line 336 of file fipa_acl.c.

References fipa_word_s::content.

Referenced by fipa_agent_identifier_Parse(), fipa_expression_Destroy(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), fipa_protocol_type_Parse(), fipa_url_Parse(), and fipa_url_sequence_Parse().

7.30.3.61 fipa_word_t* fipa_word_New (void)

Definition at line 328 of file fipa_acl.c.

Referenced by fipa_word_Copy().

7.30.3.62 int fipa_word_Parse (fipa_word_t ** *word*, fipa_message_string_p *message*)

Definition at line 653 of file fipa_acl.c.

References CHECK_NULL, MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_expression_Parse(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), fipa_protocol_type_Parse(), fipa_url_Parse(), and fipa_url_sequence_Parse().

7.31 /home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h File Reference

```
#include "fipa_acl.h"
```

Data Structures

- struct `fipa_acl_envelope_Received_s`
- struct `fipa_acl_Param_s`
- struct `fipa_acl_envelope_s`

Typedefs

- typedef struct `fipa_acl_envelope_Received_s` `fipa_acl_envelope_Received_t`
- typedef struct `fipa_acl_Param_s` `fipa_acl_Param_t`
- typedef struct `fipa_acl_envelope_s` `fipa_acl_envelope_t`
- typedef `fipa_acl_envelope_t *` `fipa_acl_envelope_p`

Functions

- `fipa_acl_envelope_Received_t * fipa_acl_envelope_Received_New (void)`
- `int fipa_acl_envelope_Received_Destroy (fipa_acl_envelope_Received_t *received)`
- `fipa_acl_envelope_Received_t * fipa_acl_envelope_Received_Copy (fipa_acl_envelope_Received_t *received)`
- `fipa_acl_Param_t * fipa_acl_Param_New (void)`
- `int fipa_acl_Param_Destroy (fipa_acl_Param_t *param)`
- `fipa_acl_Param_t * fipa_acl_Param_Copy (fipa_acl_Param_t *param)`
- `fipa_acl_envelope_t * fipa_acl_envelope_New (void)`
- `int fipa_acl_envelope_Destroy (fipa_acl_envelope_t *envelope)`
- `fipa_acl_envelope_t * fipa_acl_envelope_Copy (fipa_acl_envelope_t *envelope)`
- `int fipa_envelope_Parse (struct fipa_acl_envelope_s *envelope, const char *message)`
- `int fipa_envelope_HandleEnvelope (struct fipa_acl_envelope_s *envelope, mxm_node_t *node)`
- `int fipa_envelope_HandleParams (struct fipa_acl_envelope_s *envelope, mxm_node_t *node)`
- `int fipa_envelope_HandleTo (struct fipa_acl_envelope_s *envelope, mxm_node_t *param_node, int cur_param)`
- `int fipa_envelope_HandleFrom (struct fipa_acl_envelope_s *envelope, mxm_node_t *param_node, int cur_param)`
- `int fipa_envelope_HandleComments (struct fipa_acl_envelope_s *envelope, mxm_node_t *param_node, int cur_param)`
- `int fipa_envelope_HandleAclRepresentation (struct fipa_acl_envelope_s *envelope, mxm_node_t *param_node, int cur_param)`
- `int fipa_envelope_HandlePayloadLength (struct fipa_acl_envelope_s *envelope, mxm_node_t *param_node, int cur_param)`
- `int fipa_envelope_HandlePayloadEncoding (struct fipa_acl_envelope_s *envelope, mxm_node_t *param_node, int cur_param)`
- `int fipa_envelope_HandleDate (struct fipa_acl_envelope_s *envelope, mxm_node_t *param_node, int cur_param)`
- `int fipa_envelope_HandleIntendedReceiver (struct fipa_acl_envelope_s *envelope, mxm_node_t *param_node, int cur_param)`

- int `fipa_envelope_HandleReceived` (struct `fipa_acl_envelope_s` *envelope, `mxml_node_t` *param_node, int cur_param)
- int `fipa_envelope_ParseAgentIdentifier` (struct `fipa_agent_identifier_s` **aid, `mxml_node_t` *agent_identifier_node)
- int `fipa_envelope_ParseAddresses` (struct `fipa_agent_identifier_s` *aid, `mxml_node_t` *addresses_node)
- int `fipa_envelope_ParseResolvers` (struct `fipa_agent_identifier_s` *aid, `mxml_node_t` *resolvers_node)
- char * `fipa_envelope_Compose` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_envelope` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_params` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_to` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_from` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_acl_representation` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_payload_encoding` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_date` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t` * `fipa_envelope_Compose_intended_receiver` (`fipa_acl_message_t` *fipa_acl)

7.31.1 Typedef Documentation

7.31.1.1 `typedef fipa_acl_envelope_t* fipa_acl_envelope_p`

Definition at line 45 of file fipa_acl_envelope.h.

7.31.1.2 `typedef struct fipa_acl_envelope_Received_s fipa_acl_envelope_Received_t`

7.31.1.3 `typedef struct fipa_acl_envelope_s fipa_acl_envelope_t`

7.31.1.4 `typedef struct fipa_acl_Param_s fipa_acl_Param_t`

7.31.2 Function Documentation

7.31.2.1 `fipa_acl_envelope_t* fipa_acl_envelope_Copy (fipa_acl_envelope_t * envelope)`

Definition at line 150 of file fipa_envelope.c.

References `fipa_acl_envelope_New()`, `fipa_acl_Param_Copy()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

7.31.2.2 `int fipa_acl_envelope_Destroy (fipa_acl_envelope_t * envelope)`

Definition at line 137 of file fipa_envelope.c.

References `fipa_acl_Param_Destroy()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

Referenced by `acc_connection_Thread()`.

7.31.2.3 `fipa_acl_envelope_t* fipa_acl_envelope_New (void)`

Definition at line 129 of file fipa_envelope.c.

Referenced by acc_connection_Thread(), and fipa_acl_envelope_Copy().

**7.31.2.4 `fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_Copy
(fipa_acl_envelope_Received_t * received)`**

Definition at line 69 of file fipa_envelope.c.

References fipa_acl_envelope_Received_New(), fipa_DateTime_Copy(), fipa_url_Copy(), fipa_acl_envelope_Received_s::received_by, fipa_acl_envelope_Received_s::received_date, fipa_acl_envelope_Received_s::received_from, fipa_acl_envelope_Received_s::received_id, fipa_acl_envelope_Received_s::received_via, and strdup.

Referenced by fipa_acl_Param_Copy().

7.31.2.5 `int fipa_acl_envelope_Received_Destroy (fipa_acl_envelope_Received_t * received)`

Definition at line 57 of file fipa_envelope.c.

References fipa_DateTime_Destroy(), fipa_url_Destroy(), fipa_acl_envelope_Received_s::received_by, fipa_acl_envelope_Received_s::received_date, fipa_acl_envelope_Received_s::received_from, fipa_acl_envelope_Received_s::received_id, and fipa_acl_envelope_Received_s::received_via.

Referenced by fipa_acl_Param_Destroy().

7.31.2.6 `fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_New (void)`

Definition at line 48 of file fipa_envelope.c.

Referenced by fipa_acl_envelope_Received_Copy(), and fipa_envelope_HandleReceived().

7.31.2.7 `fipa_acl_Param_t* fipa_acl_Param_Copy (fipa_acl_Param_t * param)`

Definition at line 110 of file fipa_envelope.c.

References fipa_acl_Param_s::acl_representation, fipa_acl_Param_s::comments, fipa_acl_Param_s::date, fipa_acl_envelope_Received_Copy(), fipa_acl_Param_New(), fipa_agent_identifier_Copy(), fipa_agent_identifier_set_Copy(), fipa_DateTime_Copy(), fipa_acl_Param_s::from, fipa_acl_Param_s::intended_receiver, fipa_acl_Param_s::payload_encoding, fipa_acl_Param_s::payload_length, fipa_acl_Param_s::received, strdup, and fipa_acl_Param_s::to.

Referenced by fipa_acl_envelope_Copy().

7.31.2.8 `int fipa_acl_Param_Destroy (fipa_acl_Param_t * param)`

Definition at line 93 of file fipa_envelope.c.

References fipa_acl_Param_s::acl_representation, fipa_acl_Param_s::comments, fipa_acl_Param_s::date, fipa_acl_envelope_Received_Destroy(), fipa_agent_identifier_Destroy(), fipa_agent_identifier_set_Destroy(), fipa_DateTime_Destroy(), fipa_acl_Param_s::from, fipa_acl_Param_s::intended_receiver, fipa_acl_Param_s::payload_encoding, fipa_acl_Param_s::payload_length, fipa_acl_Param_s::received, and fipa_acl_Param_s::to.

Referenced by fipa_acl_envelope_Destroy().

7.31.2.9 **fipa_acl_Param_t* fipa_acl_Param_New (void)**

Definition at line 85 of file fipa_envelope.c.

Referenced by fipa_acl_Param_Copy(), and fipa_envelope_HandleTo().

7.31.2.10 **char* fipa_envelope_Compose (fipa_acl_message_t **fipa_acl*)**

Definition at line 869 of file fipa_envelope.c.

References fipa_envelope_Compose_envelope(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, MXML_NO_CALLBACK, mxmAdd(), mxmDelete(), mxmLoadString(), and mxmSaveAllocString().

Referenced by MC_AclSend().

7.31.2.11 **mxml_node_t* fipa_envelope_Compose_acl_representation (fipa_acl_message_t **fipa_acl*)**

Definition at line 1089 of file fipa_envelope.c.

References mxmNewElement(), and mxmNewText().

Referenced by fipa_envelope_Compose_params().

7.31.2.12 **mxml_node_t* fipa_envelope_Compose_date (fipa_acl_message_t **fipa_acl*)**

Definition at line 1117 of file fipa_envelope.c.

References buf, mxmNewElement(), and mxmNewText().

Referenced by fipa_envelope_Compose_params().

7.31.2.13 **mxml_node_t* fipa_envelope_Compose_envelope (fipa_acl_message_t **fipa_acl*)**

Definition at line 894 of file fipa_envelope.c.

References fipa_envelope_Compose_params(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmAdd(), and mxmNewElement().

Referenced by fipa_envelope_Compose().

7.31.2.14 **mxml_node_t* fipa_envelope_Compose_from (fipa_acl_message_t **fipa_acl*)**

Definition at line 1021 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, buf, dynstring_Append(), dynstring_Destroy(), dynstring_New(), g_mc_platform, mc_platform_s::hostname, dynstring_s::message, mxmNewElement(), mxmNewText(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, mc_platform_s::port, fipa_acl_message_s::sender, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose_params().

7.31.2.15 mxml_node_t* fipa_envelope_Compose_intended_receiver (fipa_acl_message_t * fipa_acl)

Definition at line 1146 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_set_s::fipa_agent_identifiers, mxmlelement(), mxmlelementtext(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_acl_message_s::receiver, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose_params().

7.31.2.16 mxml_node_t* fipa_envelope_Compose_params (fipa_acl_message_t * fipa_acl)

Definition at line 914 of file fipa_envelope.c.

References fipa_envelope_Compose_acl_representation(), fipa_envelope_Compose_date(), fipa_envelope_Compose_from(), fipa_envelope_Compose_intended_receiver(), fipa_envelope_Compose_payload_encoding(), fipa_envelope_Compose_to(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmlelementadd(), mxmlelementsetattr(), and mxmlelement().

Referenced by fipa_envelope_Compose_envelope().

7.31.2.17 mxml_node_t* fipa_envelope_Compose_payload_encoding (fipa_acl_message_t * fipa_acl)

Definition at line 1103 of file fipa_envelope.c.

References mxmlelement(), and mxmlelementtext().

Referenced by fipa_envelope_Compose_params().

7.31.2.18 mxml_node_t* fipa_envelope_Compose_to (fipa_acl_message_t * fipa_acl)

Definition at line 975 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_set_s::fipa_agent_identifiers, mxmlelement(), mxmlelementtext(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_agent_identifier_set_s::num, fipa_acl_message_s::receiver, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose_params().

7.31.2.19 int fipa_envelope_HandleAclRepresentation (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)

Definition at line 381 of file fipa_envelope.c.

References fipa_acl_Param_s::acl_representation, mxmlelement_s::child, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlelementfind(), fipa_acl_envelope_s::params, mxmlelement_text_s::string, mxmlelement_value_u::text, mxmlelement_node_s::type, and mxmlelement_node_s::value.

Referenced by fipa_envelope_HandleParams().

**7.31.2.20 int fipa_envelope_HandleComments (struct fipa_acl_envelope_s * *envelope*,
mxml_node_t * *param_node*, int *cur_param*)**

Definition at line 357 of file fipa_envelope.c.

References mxml_node_s::child, fipa_acl_Param_s::comments, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

**7.31.2.21 int fipa_envelope_HandleDate (struct fipa_acl_envelope_s * *envelope*, mxml_node_t *
param_node, int *cur_param*)**

Definition at line 452 of file fipa_envelope.c.

References mxml_node_s::child, fipa_acl_Param_s::date, fipa_datetime_Parse(), MC_ERR_PARSE, fipa_message_string_s::message, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, fipa_message_string_s::parse, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

**7.31.2.22 int fipa_envelope_HandleEnvelope (struct fipa_acl_envelope_s * *envelope*, mxml_node_t
* *node*)**

Definition at line 178 of file fipa_envelope.c.

References fipa_envelope_HandleParams(), MC_ERR_PARSE, MXML_DESCEND_FIRST, and mxmlFindElement().

Referenced by fipa_envelope_Parse().

**7.31.2.23 int fipa_envelope_HandleFrom (struct fipa_acl_envelope_s * *envelope*, mxml_node_t *
param_node, int *cur_param*)**

Definition at line 328 of file fipa_envelope.c.

References fipa_envelope_ParseAgentIdentifier(), fipa_acl_Param_s::from, MC_ERR_PARSE, MXML_DESCEND_FIRST, mxmlFindElement(), and fipa_acl_envelope_s::params.

Referenced by fipa_envelope_HandleParams().

**7.31.2.24 int fipa_envelope_HandleIntendedReceiver (struct fipa_acl_envelope_s * *envelope*,
mxml_node_t * *param_node*, int *cur_param*)**

Definition at line 482 of file fipa_envelope.c.

References fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), fipa_acl_Param_s::intended_receiver, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::params, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_envelope_HandleParams().

7.31.2.25 int fipa_envelope_HandleParams (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *node*)

Definition at line 198 of file fipa_envelope.c.

References buf, fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_HandleReceived(), fipa_envelope_HandleTo(), MC_ERR_PARSE, MXML_DESCEND_FIRST, mxmlFindElement(), fipa_acl_envelope_s::num_params, and fipa_acl_envelope_s::params.

Referenced by fipa_envelope_HandleEnvelope().

7.31.2.26 int fipa_envelope_HandlePayloadEncoding (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 428 of file fipa_envelope.c.

References mxml_node_s::child, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, fipa_acl_Param_s::payload_encoding, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

7.31.2.27 int fipa_envelope_HandlePayloadLength (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 405 of file fipa_envelope.c.

References mxml_node_s::child, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, fipa_acl_Param_s::payload_length, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

7.31.2.28 int fipa_envelope_HandleReceived (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 560 of file fipa_envelope.c.

References fipa_acl_envelope_Received_New(), fipa_datetime_Parse(), fipa_url_New(), MC_ERR_PARSE, fipa_message_string_s::message, MXML_DESCEND_FIRST, mxmlElementGetAttr(), mxmlFindElement(), fipa_acl_envelope_s::params, fipa_message_string_s::parse, fipa_acl_Param_s::received, fipa_acl_envelope_Received_s::received_by, fipa_acl_envelope_Received_s::received_date, fipa_acl_envelope_Received_s::received_from, fipa_acl_envelope_Received_s::received_id, fipa_acl_envelope_Received_s::received_via, and fipa_url_s::str.

Referenced by fipa_envelope_HandleParams().

7.31.2.29 int fipa_envelope_HandleTo (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 250 of file fipa_envelope.c.

References fipa_acl_Param_New(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), MC_ERR_PARSE, MXML_DESCEND_FIRST,

MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::params, fipa_agent_identifier_set_s::retain_order, and fipa_acl_Param_s::to.

Referenced by fipa_envelope_HandleParams().

7.31.2.30 int fipa_envelope_Parse (struct fipa_acl_envelope_s * *envelope*, const char * *message*)

Definition at line 165 of file fipa_envelope.c.

References fipa_envelope_HandleEnvelope(), MXML_NO_CALLBACK, mxmlDelete(), and mxmlLoadString().

Referenced by acc_connection_Thread().

7.31.2.31 int fipa_envelope_ParseAddresses (struct fipa_agent_identifier_s * *aid*, mxml_node_t * *addresses_node*)

Definition at line 737 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, mxml_node_s::child, fipa_url_New(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, MXML_TEXT, mxmlFindElement(), fipa_url_sequence_s::num, fipa_url_s::str, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, fipa_url_sequence_s::urls, and mxml_node_s::value.

Referenced by fipa_envelope_ParseAgentIdentifier().

7.31.2.32 int fipa_envelope_ParseAgentIdentifier (struct fipa_agent_identifier_s ** *aid*, mxml_node_t * *agent_identifier_node*)

Definition at line 687 of file fipa_envelope.c.

References mxml_node_s::child, fipa_agent_identifier_New(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseResolvers(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), and fipa_envelope_ParseResolvers().

7.31.2.33 int fipa_envelope_ParseResolvers (struct fipa_agent_identifier_s * *aid*, mxml_node_t * *resolvers_node*)

Definition at line 804 of file fipa_envelope.c.

References fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_agent_identifier_s::resolvers, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_envelope_ParseAgentIdentifier().

7.32 /home/dko/Projects/mobilec/src/include/fipa_comm.h File Reference

```
#include <fipa_acl.h>
```

Data Structures

- struct `fipa_comm_message_check_t`
- struct `fipa_comm_reply_t`
- struct `fipa_comm_action_t`
- struct `fipa_comm_performative_t`
- struct `fipa_list_t`
- struct `fipa_comm_protocol_cn_t`
- struct `fipa_comm_protocol_t`
- struct `fipa_comm_t`

Defines

- #define `false` 0
- #define `MC_NUM_PERFORMATIVES` 23

Typedefs

- typedef int(* `fipa_comm_callback`)(char *received_content, char **reply_content)
- typedef int(* `protocol_contract_net_callback`)(int numBids, char **bids, char *winners)
- typedef struct `fipa_comm_message_check_t` `fipa_comm_message_check_s`
- typedef struct `fipa_comm_message_check_t` * `fipa_comm_message_check_p`
- typedef struct `fipa_comm_reply_t` `fipa_comm_reply_s`
- typedef struct `fipa_comm_reply_t` * `fipa_comm_reply_p`
- typedef struct `fipa_comm_action_t` `fipa_comm_action_s`
- typedef struct `fipa_comm_action_t` * `fipa_comm_action_p`
- typedef struct `fipa_comm_performative_t` `fipa_comm_performative_s`
- typedef struct `fipa_comm_performative_t` * `fipa_comm_performative_p`
- typedef struct `fipa_list_t` `fipa_list_s`
- typedef struct `fipa_list_t` * `fipa_list_p`
- typedef struct `fipa_comm_protocol_cn_t` `fipa_comm_protocol_cn_s`
- typedef struct `fipa_comm_protocol_cn_t` * `fipa_comm_protocol_cn_p`
- typedef struct `fipa_comm_protocol_t` * `fipa_comm_protocol_p`
- typedef struct `fipa_comm_protocol_t` `fipa_comm_protocol_s`
- typedef struct `fipa_comm_t` `fipa_comm_s`
- typedef struct `fipa_comm_t` * `fipa_comm_p`
- typedef struct `fipa_comm_t` `MCFIPAComm_s`
- typedef struct `fipa_comm_t` * `MCFIPAComm_p`

Enumerations

- enum `fipa_comm_type_e` {
 `FIPA_COMM_ACTION, FIPA_COMM_CHECK, FIPA_COMM_REPLY, FIPA_COMM_CALLBACK,`
`FIPA_COMM_END }`
- enum `fipa_comm_logic_type_e` { `FIPA_COMM_LOGIC_ERROR = -1, FIPA_COMM_LOGIC_OR, FIPA_COMM_LOGIC_AND` }
- enum `fipa_comm_check_type_e` {
 `FIPA_COMM_CHECK_ERROR = -1, FIPA_COMM_CHECK_SENDER_NAME, FIPA_COMM_CHECK_SENDER_ADDRESS, FIPA_COMM_CHECK_CONTENT,`
`FIPA_COMM_CHECK_CONVERSATIONID, FIPA_COMM_CHECK_LANGUAGE, FIPA_COMM_CHECK_ONTOLOGY, FIPA_COMM_CHECK_ENCODING` }
- enum `fipa_comm_action_type_e` {
 `FIPA_COMM_ACTION_ERROR = -1, FIPA_COMM_ACTION_BOTH, FIPA_COMM_ACTION_REPLY, FIPA_COMM_ACTION_CALLBACK,`
`FIPA_COMM_ACTION_NONE` }
- enum `fipa_comm_protocol_cn_state_e` {
 `FIPA_COMM_PROTOCOL_CN_ERROR = -1, FIPA_COMM_PROTOCOL_CN_START, FIPA_COMM_PROTOCOL_CN_CFP, FIPA_COMM_PROTOCOL_CN_BID,`
`FIPA_COMM_PROTOCOL_CN_RESULT, FIPA_COMM_PROTOCOL_CN_DONE` }

Functions

- `fipa_comm_p mc_FIPAComm_New ()`
- `int mc_FIPAComm_HandleMessage (fipa_comm_p fcomm, fipa_acl_message_p acl)`
- `int mc_FIPAComm_HandleMessageOnce (fipa_comm_p fcomm)`
- `int mc_FIPAComm_HandleMessageWait (fipa_comm_p fcomm)`
- `void mc_FIPAComm_Destroy (fipa_comm_p)`
- `int mc_FIPAComm_RegisterPerformative (fipa_comm_p fcomm, enum fipa_performative_e type)`
- `int mc_FIPAComm_DeregisterPerformative (fipa_comm_p fcomm, enum fipa_performative_e type)`
- `int mc_FIPAComm_SetDefaultReply (fipa_comm_p fcomm, enum fipa_performative_e type, char *content)`
- `int mc_FIPAComm_SetPerformativeDefaultReply (fipa_comm_p fcomm, enum fipa_performative_e ptype, enum fipa_performative_e rtype, char *content)`
- `int mc_FIPAComm_SetAgent (fipa_comm_p fcomm, void *agent, char *agent_name, char *agent_address)`
- `int mc_FIPAComm_RegisterAction (fipa_comm_p fcomm, enum fipa_performative_e pType, enum fipa_comm_action_type_e aType,...)`
- `int mc_FIPAComm_RegisterActionS (fipa_performative_e type, fipa_comm_action_p act)`
- `fipa_comm_protocol_p mc_FIPAProtocol_New ()`
- `int mc_FIPAComm_RegisterProtocolCallback (fipa_comm_p fcomm, enum fipa_protocol_e protocolType, fipa_comm_callback func)`
- `int mc_FIPAComm_RegisterProtocol (fipa_comm_p fcomm, enum fipa_protocol_e protocolType, char *protocolID, void *info, char *network)`
- `void fipa_comm_protocol_info_COPY (fipa_comm_protocol_p proto, void *info)`
- `int fipa_list_Add (fipa_list_p *list, fipa_acl_message_p acl)`
- `int mc_FIPAComm_StartProtocol (fipa_comm_p fcomm, enum fipa_protocol_e type, char *id)`
- `int mc_FIPAComm_HandleProtocol (fipa_comm_p fcomm, fipa_acl_message_p acl)`

- `fipa_comm_protocol_p mc_FIPAComm_AddNewProtocol (fipa_comm_p fcomm, enum fipa_protocol_e type, char *id)`
- `int mc_FIPAComm_FSM_CN (fipa_comm_p fcomm, fipa_acl_message_p acl)`
- `fipa_comm_protocol_p mc_FIPAComm_NewProtocol (enum fipa_protocol_e type, char *id)`
- `int mc_FIPAComm_SetProtocolState (fipa_comm_protocol_p protocol, char state)`

7.32.1 Define Documentation

7.32.1.1 #define false 0

Definition at line 11 of file fipa_comm.h.

7.32.1.2 #define MC_NUM_PERFORMATIVES 23

Definition at line 14 of file fipa_comm.h.

7.32.2 Typedef Documentation

7.32.2.1 typedef struct fipa_comm_action_t* fipa_comm_action_p

Definition at line 109 of file fipa_comm.h.

7.32.2.2 typedef struct fipa_comm_action_t fipa_comm_action_s

Definition at line 108 of file fipa_comm.h.

7.32.2.3 typedef int(* fipa_comm_callback)(char *received_content, char **reply_content)

Definition at line 17 of file fipa_comm.h.

7.32.2.4 typedef struct fipa_comm_message_check_t* fipa_comm_message_check_p

Definition at line 80 of file fipa_comm.h.

7.32.2.5 typedef struct fipa_comm_message_check_t fipa_comm_message_check_s

Definition at line 79 of file fipa_comm.h.

7.32.2.6 typedef struct fipa_comm_t* fipa_comm_p

Definition at line 193 of file fipa_comm.h.

7.32.2.7 typedef struct fipa_comm_performative_t* fipa_comm_performative_p

Definition at line 121 of file fipa_comm.h.

7.32.2.8 `typedef struct fipa_comm_performative_t fipa_comm_performative_s`

Definition at line 120 of file fipa_comm.h.

7.32.2.9 `typedef struct fipa_comm_protocol_cn_t* fipa_comm_protocol_cn_p`

Definition at line 156 of file fipa_comm.h.

7.32.2.10 `typedef struct fipa_comm_protocol_cn_t fipa_comm_protocol_cn_s`

Definition at line 155 of file fipa_comm.h.

7.32.2.11 `typedef struct fipa_comm_protocol_t* fipa_comm_protocol_p`

Definition at line 172 of file fipa_comm.h.

7.32.2.12 `typedef struct fipa_comm_protocol_t fipa_comm_protocol_s`

Definition at line 173 of file fipa_comm.h.

7.32.2.13 `typedef struct fipa_comm_reply_t* fipa_comm_reply_p`

Definition at line 93 of file fipa_comm.h.

7.32.2.14 `typedef struct fipa_comm_reply_t fipa_comm_reply_s`

Definition at line 92 of file fipa_comm.h.

7.32.2.15 `typedef struct fipa_comm_t fipa_comm_s`

Definition at line 192 of file fipa_comm.h.

7.32.2.16 `typedef struct fipa_list_t* fipa_list_p`

Definition at line 141 of file fipa_comm.h.

7.32.2.17 `typedef struct fipa_list_t fipa_list_s`

Definition at line 140 of file fipa_comm.h.

7.32.2.18 `typedef struct fipa_comm_t* MCFIPAComm_p`

Definition at line 195 of file fipa_comm.h.

7.32.2.19 `typedef struct fipa_comm_t MCFIPAComm_s`

Definition at line 194 of file fipa_comm.h.

7.32.2.20 `typedef int(* protocol_contract_net_callback)(int numBids, char **bids, char *winners)`

Definition at line 18 of file fipa_comm.h.

7.32.3 Enumeration Type Documentation

7.32.3.1 `enum fipa_comm_action_type_e`

Enumerator:

FIPA_COMM_ACTION_ERROR
FIPA_COMM_ACTION_BOTH
FIPA_COMM_ACTION_REPLY
FIPA_COMM_ACTION_CALLBACK
FIPA_COMM_ACTION_NONE

Definition at line 45 of file fipa_comm.h.

7.32.3.2 `enum fipa_comm_check_type_e`

Enumerator:

FIPA_COMM_CHECK_ERROR
FIPA_COMM_CHECK_SENDER_NAME
FIPA_COMM_CHECK_SENDER_ADDRESS
FIPA_COMM_CHECK_CONTENT
FIPA_COMM_CHECK_CONVERSATIONID
FIPA_COMM_CHECK_LANGUAGE
FIPA_COMM_CHECK_ONTOLOGY
FIPA_COMM_CHECK_ENCODING

Definition at line 34 of file fipa_comm.h.

7.32.3.3 `enum fipa_comm_logic_type_e`

Enumerator:

FIPA_COMM_LOGIC_ERROR
FIPA_COMM_LOGIC_OR
FIPA_COMM_LOGIC_AND

Definition at line 28 of file fipa_comm.h.

7.32.3.4 enum fipa_comm_protocol_cn_state_e

Enumerator:

FIPA_COMM_PROTOCOL_CN_ERROR

FIPA_COMM_PROTOCOL_CN_START

FIPA_COMM_PROTOCOL_CN_CFP

FIPA_COMM_PROTOCOL_CN_BID

FIPA_COMM_PROTOCOL_CN_RESULT

FIPA_COMM_PROTOCOL_CN_DONE

Definition at line 127 of file fipa_comm.h.

7.32.3.5 enum fipa_comm_type_e

Enumerator:

FIPA_COMM_ACTION

FIPA_COMM_CHECK

FIPA_COMM_REPLY

FIPA_COMM_CALLBACK

FIPA_COMM_END

Definition at line 20 of file fipa_comm.h.

7.32.4 Function Documentation

- 7.32.4.1 `void fipa_comm_protocol_info_COPY (fipa_comm_protocol_p proto, void * info)`
- 7.32.4.2 `int fipa_list_Add (fipa_list_p * list, fipa_acl_message_p acl)`
- 7.32.4.3 `fipa_comm_protocol_p mc_FIPAComm_AddNewProtocol (fipa_comm_p fcomm, enum fipa_protocol_e type, char * id)`
- 7.32.4.4 `int mc_FIPAComm_DeregisterPerformative (fipa_comm_p fcomm, enum fipa_performative_e type)`
- 7.32.4.5 `void mc_FIPAComm_Destroy (fipa_comm_p)`
- 7.32.4.6 `int mc_FIPAComm_FSM_CN (fipa_comm_p fcomm, fipa_acl_message_p acl)`
- 7.32.4.7 `int mc_FIPAComm_HandleMessage (fipa_comm_p fcomm, fipa_acl_message_p acl)`
- 7.32.4.8 `int mc_FIPAComm_HandleMessageOnce (fipa_comm_p fcomm)`
- 7.32.4.9 `int mc_FIPAComm_HandleMessageWait (fipa_comm_p fcomm)`
- 7.32.4.10 `int mc_FIPAComm_HandleProtocol (fipa_comm_p fcomm, fipa_acl_message_p acl)`
- 7.32.4.11 `fipa_comm_p mc_FIPAComm_New ()`
- 7.32.4.12 `fipa_comm_protocol_p mc_FIPAComm_NewProtocol (enum fipa_protocol_e type, char * id)`
- 7.32.4.13 `int mc_FIPAComm_RegisterAction (fipa_comm_p fcomm, enum fipa_performative_e pType, enum fipa_comm_action_type_e aType, ...)`
- 7.32.4.14 `int mc_FIPAComm_RegisterActionS (fipa_performative_e type, fipa_comm_action_p act)`
- 7.32.4.15 `int mc_FIPAComm_RegisterPerformative (fipa_comm_p fcomm, enum fipa_performative_e type)`
- 7.32.4.16 `int mc_FIPAComm_RegisterProtocol (fipa_comm_p fcomm, enum fipa_protocol_e protocolType, char * protocolID, void * info, char * network)`
- 7.32.4.17 `int mc_FIPAComm_RegisterProtocolCallback (fipa_comm_p fcomm, enum fipa_protocol_e protocolType, fipa_comm_callback_func)`
- 7.32.4.18 `int mc_FIPAComm_SetAgent (fipa_comm_p fcomm, void * agent, char * agent_name, char * agent_address)`
- 7.32.4.19 `int mc_FIPAComm_SetDefaultReply (fipa_comm_p fcomm, enum fipa_performative_e type, char * content)`
- 7.32.4.20 `int mc_FIPAComm_SetPerformativeDefaultReply (fipa_comm_p fcomm, enum fipa_performative_e ptype, enum fipa_performative_e rtype, char * content)`
- 7.32.4.21 `int mc_FIPAComm_SetProtocolState (fipa_comm_protocol_p protocol, char state)`
- 7.32.4.22 `Generated on Fri Jun 17 16:59:04 2011 for Mobile-C by Doxygen
int mc_FIPAComm_StartProtocol (fipa_comm_p fcomm, enum fipa_protocol_e type, char * id)`
- 7.32.4.23 `fipa_comm_protocol_p mc_FIPAProtocol_New ()`

7.33 /home/dko/Projects/mobilec/src/include/host_id.h File Reference

Data Structures

- struct [host_id_s](#)

TypeDefs

- [typedef struct host_id_s host_id_t](#)
- [typedef host_id_t * host_id_p](#)

Functions

- [host_id_p host_id_Initialize \(const char *hostname, int port\)](#)
- [void host_id_Destroy \(host_id_p host_id\)](#)
- [int host_id_Compare \(host_id_p host1, host_id_p host2\)](#)

7.33.1 Typedef Documentation

7.33.1.1 [typedef host_id_t* host_id_p](#)

Definition at line 43 of file host_id.h.

7.33.1.2 [typedef struct host_id_s host_id_t](#)

7.33.2 Function Documentation

7.33.2.1 [int host_id_Compare \(host_id_p host1, host_id_p host2\)](#)

7.33.2.2 [void host_id_Destroy \(host_id_p host_id\)](#)

7.33.2.3 [host_id_p host_id_Initialize \(const char * hostname, int port\)](#)

7.34 /home/dko/Projects/mobilec/src/include/interpreter_variable_data.h File Reference

```
#include <ch.h>
```

Data Structures

- struct [interpreter_variable_data_s](#)

Typedefs

- typedef struct [interpreter_variable_data_s](#) [interpreter_variable_data_t](#)
- typedef [interpreter_variable_data_t](#) * [interpreter_variable_data_p](#)

Functions

- [interpreter_variable_data_p interpreter_variable_data_New \(void\)](#)
- [interpreter_variable_data_p interpreter_variable_data_Copy \(interpreter_variable_data_p src\)](#)
- [interpreter_variable_data_p interpreter_variable_data_InitializeFromAgent \(struct agent_s *agent\)](#)
- [interpreter_variable_data_p interpreter_variable_data_Initialize \(struct agent_s *agent, const char *varname\)](#)
- int [interpreter_variable_data_Destroy \(interpreter_variable_data_p agent_return_data\)](#)
- int [interpreter_variable_data_CmpName \(const char *name, interpreter_variable_data_t *data\)](#)

7.34.1 Typedef Documentation

7.34.1.1 [typedef interpreter_variable_data_t* interpreter_variable_data_p](#)

Definition at line 51 of file interpreter_variable_data.h.

7.34.1.2 [typedef struct interpreter_variable_data_s interpreter_variable_data_t](#)

Definition at line 50 of file interpreter_variable_data.h.

7.34.2 Function Documentation

7.34.2.1 [int interpreter_variable_data_CmpName \(const char * name, interpreter_variable_data_t * data\)](#)

Definition at line 256 of file agent_return_data.c.

References [interpreter_variable_data_s::name](#).

Referenced by [agent_AddPersistentVariable\(\)](#), [MC_AgentVariableRetrieve\(\)](#), and [MC_AgentVariableRetrieveInfo\(\)](#).

7.34.2.2 `interpreter_variable_data_p interpreter_variable_data_Copy (interpreter_variable_data_p src)`

Definition at line 235 of file agent_return_data.c.

References `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `interpreter_variable_data_New()`, `interpreter_variable_data_s::name`, `interpreter_variable_data_s::size`, and `strdup`.

Referenced by `agent_task_Copy()`.

7.34.2.3 `int interpreter_variable_data_Destroy (interpreter_variable_data_p agent_return_data)`

Definition at line 216 of file agent_return_data.c.

References `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `MC_SUCCESS`, and `interpreter_variable_data_s::name`.

Referenced by `agent_AddPersistentVariable()`, `agent_RunChScriptThread()`, and `agent_task_Destroy()`.

7.34.2.4 `interpreter_variable_data_p interpreter_variable_data_Initialize (struct agent_s * agent, const char * varname)`**7.34.2.5 `interpreter_variable_data_p interpreter_variable_data_InitializeFromAgent (struct agent_s * agent)`****7.34.2.6 `interpreter_variable_data_p interpreter_variable_data_New (void)`**

Definition at line 46 of file agent_return_data.c.

References `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `CHECK_NULL`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `interpreter_variable_data_s::name`, and `interpreter_variable_data_s::size`.

Referenced by `agent_xml_parse__data()`, `interpreter_variable_data_Copy()`, and `MC_SaveData_chdl()`.

7.35 /home/dko/Projects/mobilec/src/include/libmc.h File Reference

MobileC api header file.

```
#include <embedch.h>
```

Data Structures

- struct `agency_s`
The agency handle.
- struct `MCAgencyOptions_s`
User modifiable agency options.
- struct `stationary_agent_info_s`

Defines

- #define `EXPORTMC`
- #define `MC_Wait(arg1)` `MC_MainLoop(arg1)`
- #define `_ERROR_CODE_E_`
- #define `MC_INITIALIZED_CODE` 63280583
- #define `AGENT_T`
- #define `_FIPA_PERFORMATIVE_E_`

Typedefs

- typedef int(* `MC_AgentInitCallbackFunc_t`)(ChInterp_t interp, struct `agent_s` *agent, void *user_data)
- typedef enum `error_code_e` `error_code_t`
- typedef enum `MC_SteerCommand_e` `MC_SteerCommand_t`
Available commands for MC_Steer.
- typedef struct `agency_s` `agency_t`
The agency handle.
- typedef `agency_t * agency_p`
- typedef `agency_p MCAgency_t`
- typedef struct `MCAgencyOptions_s` `MCAgencyOptions_t`
User modifiable agency options.
- typedef struct `stationary_agent_info_s` `stationary_agent_info_t`
- typedef struct `agent_s` `agent_t`
- typedef `agent_t * MCAgent_t`
- typedef `agent_t * agent_p`

Enumerations

- enum [error_code_e](#) {

MC_SUCCESS = 0, MC_ERR, MC_ERR_CONNECT, MC_ERR_PARSE,

MC_ERR_EMPTY, MC_ERR_INVALID, MC_ERR_INVALID_ARGS, MC_ERR_NOT_FOUND,

MC_ERR_MEMORY, MC_ERR_SEND, MC_WARN_DUPLICATE, MC_SUCCESS = 0,

ERR, MC_ERR_CONNECT, MC_ERR_PARSE, MC_ERR_EMPTY,

MC_ERR_INVALID, MC_ERR_INVALID_ARGS, MC_ERR_NOT_FOUND, MC_ERR_MEMORY,

MC_ERR_SEND, MC_ERR_OPTIONS_UNINITIALIZED, MC_WARN_DUPLICATE }
- enum [MC_ThreadIndex_e](#) {

MC_THREAD_DF = 0, MC_THREAD_AMS, MC_THREAD_ACC, MC_THREAD_CP,

MC_THREAD_AGENT, MC_THREAD_ALL }

MobileC Module indices.
- enum [MC_QueueIndex_e](#) {

MC_QUEUE_MESSAGE, MC_QUEUE_AGENT, MC_QUEUE_CONNECTION, MC_QUEUE_SYNC,

MC_QUEUE_BARRIER, MC_QUEUE_NUM }

MobileC data queue indices.
- enum [MC_SteerCommand_e](#) { MC_RUN = 0, MC_SUSPEND, MC_RESTART, MC_STOP }

Available commands for MC_Steer.
- enum [MC_Signal_e](#) {

MC_NO_SIGNAL = 0x00, MC_RECV_CONNECTION = 0x01, MC_RECV_MESSAGE = 0x02,

MC_RECV_AGENT = 0x04,

MC_RECV_RETURN = 0x08, MC_EXEC_AGENT = 0x10, MC_ALL_SIGNALS = 0x20 }

MobileC system signals.
- enum [MC_AgentType_e](#) { MC_NONE = -1, MC_REMOTE_AGENT = 0, MC_LOCAL_AGENT,

MC_RETURN_AGENT }
- enum [MC_AgentStatus_e](#) {

MC_NO_STATUS = -1, MC_WAIT_CH = 0, MC_WAIT_MESSGSEND, MC_AGENT_ACTIVE,

MC_AGENT_NEUTRAL, MC_AGENT_SUSPENDED, MC_WAIT_FINISHED }

An agent's current execution state.
- enum [fipa_performative_e](#) {

FIPA_ERROR = -1, FIPA_ZERO, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE,

FIPA_CANCEL, FIPA_CALL_FOR_PROPOSAL, FIPA_CONFIRM, FIPA_DISCONFIRM,

FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF,

FIPA_NOT_UNDERSTOOD, FIPA_PROPAGATE, FIPA_PROPOSE, FIPA_PROXY,

FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL,

FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_SUBSCRIBE,

}

```

FIPA_ERROR = -1, FIPA_ZERO, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE,
FIPA_CANCEL, FIPA_CALL_FOR_PROPOSAL, FIPA_CONFIRM, FIPA_DISCONFIRM,
FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF,
FIPA_NOT_UNDERSTOOD, FIPA_PROPAGATE, FIPA_PROPOSE, FIPA_PROXY,
FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL,
FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA-
SUBSCRIBE }
```

Functions

- EXPORTMC int **MC_AclDestroy** (struct **fipa_acl_message_s** *message)
Destroy a FIPA ACL message.
- EXPORTMC struct **fipa_acl_message_s** * **MC_AclNew** (void)
Allocate a new ACL Message.
- EXPORTMC int **MC_AclPost** (**MCAgent_t** agent, struct **fipa_acl_message_s** *message)
Post ACL message to agent.
- EXPORTMC struct **fipa_acl_message_s** * **MC_AclReply** (struct **fipa_acl_message_s** *acl_-
message)
Reply to an ACL message.
- EXPORTMC struct **fipa_acl_message_s** * **MC_AclRetrieve** (**MCAgent_t** agent)
Retrieve an ACL message.
- EXPORTMC int **MC_AclSend** (**MCAgency_t** attr, struct **fipa_acl_message_s** *acl)
Send a composed ACL Message.
- EXPORTMC struct **fipa_acl_message_s** * **MC_AclWaitRetrieve** (**MCAgent_t** agent)
Wait for and retrieve an ACL message.
- EXPORTMC enum **fipa_protocol_e** **MC_AclGetProtocol** (struct **fipa_acl_message_s** *acl)
- EXPORTMC char * **MC_AclGetConversationID** (struct **fipa_acl_message_s** *acl)
- EXPORTMC enum **fipa_performative_e** **MC_AclGetPerformative** (struct **fipa_acl_message_s** *acl)
- EXPORTMC int **MC_AclGetSender** (struct **fipa_acl_message_s** *acl, char **name, char **address)
- EXPORTMC const char * **MC_AclGetContent** (struct **fipa_acl_message_s** *acl)
- EXPORTMC int **MC_AclSetProtocol** (struct **fipa_acl_message_s** *acl, enum **fipa_protocol_e** performative)
- EXPORTMC int **MC_AclSetConversationID** (struct **fipa_acl_message_s** *acl, const char *id)
- EXPORTMC int **MC_AclSetPerformative** (struct **fipa_acl_message_s** *acl, enum **fipa_performative_e** performative)
- EXPORTMC int **MC_AclSetSender** (struct **fipa_acl_message_s** *acl, const char *name, const char *address)
- EXPORTMC int **MC_AclAddReceiver** (struct **fipa_acl_message_s** *acl, const char *name, const char *address)
- EXPORTMC int **MC_AclAddReplyTo** (struct **fipa_acl_message_s** *acl, const char *name, const char *address)
- EXPORTMC int **MC_AclSetContent** (struct **fipa_acl_message_s** *acl, const char *content)

- EXPORTMC int [MC_AddAgent](#) (MCAgency_t attr, MCAgent_t agent)
Add an agent to the agency 'attr'.
- int [MC_AddStationaryAgent](#) (MCAgency_t agency, void *(*agent_thread)(stationary_agent_info_t *), const char *name, void *agent_args)
Add a stationary agent to the agency.
- int [MC_AddAgentInitCallback](#) (MCAgency_t agency, MC_AgentInitCallbackFunc_t function, void *user_data)
Add an agent initialization callback function.
- int [MC_AgentAddTask](#) (MCAgent_t agent, const char *code, const char *return_var_name, const char *server, int persistent)
Add a new task to an already existing agent.
- EXPORTMC int [MC_AgentAttachFile](#) (MCAgent_t agent, const char *name, const char *filepath)
Attach a file to the agent's current task.
- EXPORTMC int [MC_AgentListFiles](#) (MCAgent_t agent, int task_num, char ***names, int *num_files)
Get a list of an agent's attached files.
- EXPORTMC int [MC_AgentProcessingBegin](#) (MCAgency_t attr)
Begin a series of agent functions.
- EXPORTMC int [MC_AgentProcessingEnd](#) (MCAgency_t attr)
- EXPORTMC int [MC_AgentRetrieveFile](#) (MCAgent_t agent, int task_num, const char *name, const char *save_path)
Saves an agent's attached file to the filesystem.
- int [MC_AgentAddTaskFromFile](#) (MCAgent_t agent, const char *filename, const char *return_var_name, const char *server, int persistent)
Add a new task to an already existing agent.
- [MCAgency_t MC_AgentInfo_GetAgency](#) (stationary_agent_info_t *stationary_agent_info)
Get the host Mobile-C agency handle from a "stationary_agent_info_t" data structure.
- [MCAgent_t MC_AgentInfo_GetAgent](#) (stationary_agent_info_t *stationary_agent_info)
Retrieve an agent handle from the stationary agent info from within a stationary agent.
- void * [MC_AgentInfo_GetAgentArgs](#) (stationary_agent_info_t *stationary_agent_info)
Retrieve the agent argument supplied as the "agent_args" parameter in the [MC_AddStationaryAgent\(\)](#) function.
- int [MC_AgentReturnArrayDim](#) (MCAgent_t agent, int task_num)
Get the dimension of an agent's return data, if it is an array.
- int [MC_AgentReturnArrayExtent](#) (MCAgent_t agent, int task_num, int index)
Get the extent of a dimension of an agent's return data, if it is an array.

- int [MC_AgentReturnArrayNum](#) ([MCAgent_t](#) agent, int task_num)
Get the total number of elements of the agent return data.
- const void * [MC_AgentReturnDataGetSymbolAddr](#) ([MCAgent_t](#) agent, int task_num)
Get a pointer to the agent's return data.
- size_t [MC_AgentReturnDataSize](#) ([MCAgent_t](#) agent, int task_num)
Get the size of an agent's return data type.
- int [MC_AgentReturnDataType](#) ([MCAgent_t](#) agent, int task_num)
Get the type of an agent's return data.
- int [MC_AgentReturnIsArray](#) ([MCAgent_t](#) agent, int task_num)
Check to see whether or not an agent's return data is an array.
- const void * [MC_AgentVariableRetrieve](#) ([MCAgent_t](#) agent, const char *var_name, int task_num)
Retrieve a pointer to a previously saved variable.
- int [MC_AgentVariableRetrieveInfo](#) ([MCAgent_t](#) agent, const char *var_name, int task_num, const void **data, int *dim, const int **extent)
Retrieve a info about a previously saved variable.
- int [MC_AgentVariableSave](#) ([MCAgent_t](#) agent, const char *var_name)
Mark an agent variable for saving.
- EXPORTMC int [MC_Barrier](#) ([MCAgency_t](#) attr, int id)
- EXPORTMC int [MC_BarrierDelete](#) ([MCAgency_t](#) attr, int id)
Find and delete an initialized MobileC Barrier.
- EXPORTMC int [MC_BarrierInit](#) ([MCAgency_t](#) attr, int id, int num_procs)
Initialize a MobileC Barrier.
- EXPORTMC int [MC_CallAgentFunc](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, int numArgs,...)
Use custom ChOptions_t type for internal Ch interpreter.
- EXPORTMC int [MC_CallAgentFuncArg](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, void *arg)
Calls a function defined in an agent.
- EXPORTMC int [MC_CallAgentFuncV](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, va_list ap)
Calls a function defined in an agent.
- EXPORTMC int [MC_CallAgentFuncVar](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, [ChVaList_t](#) arglist)
- EXPORTMC [MCAgent_t MC_ComposeAgent](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, int persistent)
Compose a new agent dynamically without using a prewritten XML file.

- EXPORTMC [MCAgent_t MC_ComposeAgentS](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, int persistent, const char *workgroup_code)

Compose a new agent dynamically without using a prewritten XML file.
- EXPORTMC [MCAgent_t MC_ComposeAgentWithWorkgroup](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, int persistent, const char *workgroup_code)

Compose a new agent dynamically without using a prewritten XML file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFile](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, int persistent)

Compose a new agent dynamically from a source code file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFileS](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, int persistent, const char *workgroup_code)

Compose a new agent dynamically from a source code file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFileWithWorkgroup](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, int persistent, const char *workgroup_code)

Compose a new agent dynamically from a source code file.
- EXPORTMC int [MC_CondBroadcast](#) ([MCAgency_t](#) attr, int id)

Wakes up all agents/threads waiting on a condition variable.
- EXPORTMC int [MC_CondSignal](#) ([MCAgency_t](#) attr, int id)

Wakes up at least one thread waiting on a condition variable.
- EXPORTMC int [MC_CondReset](#) ([MCAgency_t](#) attr, int id)

Reset a previously signalled MobileC condition variable.
- EXPORTMC int [MC_CondWait](#) ([MCAgency_t](#) attr, int id)

Wait on a MobileC synchronization variable.
- int [MC_CopyAgent](#) ([MCAgent_t](#) *agent_out, const [MCAgent_t](#) agent_in)

Performs a deep-copy of an agent structure.
- EXPORTMC int [MC_DeleteAgent](#) ([MCAgent_t](#) agent)

Stop and remove an agent.
- EXPORTMC int [MC_DeleteAgentWG](#) ([MCAgent_t](#) calling_agent, [MCAgent_t](#) agent)

Stop and remove an agent in the same workgroup.
- EXPORTMC int [MC_End](#) ([MCAgency_t](#) attr)

End an agency.
- int [MC_DestroyServiceSearchResult](#) (char **agentName, char **serviceName, int *agentID, int numResult)

Free memory allocated by a Service Search operation.

- EXPORTMC `MCAgent_t MC_FindAgentByName (MCAgency_t attr, const char *name)`
Find an agent by its name.
- EXPORTMC `MCAgent_t MC_FindAgentByID (MCAgency_t attr, int ID)`
Find an agent by its id.
- EXPORTMC `void * MC_GetAgentExecEngine (MCAgent_t agent)`
Retrieve an agent's Ch interpreter.
- EXPORTMC `int MC_GetAgentID (MCAgent_t agent)`
Retrieve an agent's id.
- EXPORTMC `char * MC_GetAgentName (MCAgent_t agent)`
- EXPORTMC `int MC_GetAgentNumTasks (MCAgent_t agent)`
Retrieve the number of tasks an agent has.
- EXPORTMC `int MC_GetAgentReturnData (MCAgent_t agent, int task_num, void **data, int *dim, int **extent)`
Get an agent's return data.
- EXPORTMC `int MC_GetAgentStatus (MCAgent_t agent)`
Get an agent's current status.
- EXPORTMC `enum MC_AgentType_e MC_GetAgentType (MCAgent_t agent)`
Get an agent's type.
- EXPORTMC `int MC_GetAgents (MCAgency_t attr, MCAgent_t **agents, int *num_agents, unsigned int agent_status_flags)`
Get a list of agents that match a certain agent status.
- EXPORTMC `int MC_GetAllAgents (MCAgency_t attr, MCAgent_t **agents, int *num_agents)`
Get all of the agents on an agency.
- EXPORTMC `int MC_GetNumAgents (MCAgency_t attr, int *num_agents)`
Get the number of agents residing on an agency.
- EXPORTMC `char * MC_GetAgentXMLString (MCAgent_t agent)`
Get an agent's xml string.
- EXPORTMC `int MC_HaltAgency (MCAgency_t agency)`
Halt an agency: Do not process new entries in queues.
- EXPORTMC `MCAgency_t MC_Initialize (int port, MCAgencyOptions_t *options)`
Initialize and start a MobileC agency.
- EXPORTMC `int MC_InitializeAgencyOptions (struct MCAgencyOptions_s *options)`
Initialize MobileC options.
- EXPORTMC `int MC_MainLoop (MCAgency_t attr)`

Wait indefinitely.

- EXPORTMC int [MC_LoadAgentFromFile](#) ([MCAgency_t](#) attr, const char *filename)
Load an agent from a file into an agency.
- EXPORTMC int [MC_MigrateAgent](#) ([MCAgent_t](#) agent, const char *hostname, int port)
Migrates a running agent to another host.
- EXPORTMC int [MC_MutexLock](#) ([MCAgency_t](#) attr, int id)
Locks a MobileC synchronization variable as a mutex.
- EXPORTMC int [MC_MutexUnlock](#) ([MCAgency_t](#) attr, int id)
- EXPORTMC int [MC_RegisterService](#) ([MCAgency_t](#) agency, [MCAgent_t](#) agent, int agentID, const char *agentName, char **serviceNames, int numServices)
Register a new service with the Directory Facilitator.
- EXPORTMC int [MC_ResumeAgency](#) ([MCAgency_t](#) agency)
Resumes a halted agency.
- EXPORTMC [MCAgent_t](#) [MC_RetrieveAgent](#) ([MCAgency_t](#) attr)
Retrieves the oldest agent from an agency.
- EXPORTMC int [MC_SemaphorePost](#) ([MCAgency_t](#) attr, int id)
Post to a MobileC synchronization variable semaphore.
- EXPORTMC int [MC_SemaphoreWait](#) ([MCAgency_t](#) attr, int id)
Decreases a MobileC synchronization variable semaphore count by one.
- EXPORTMC int [MC_SetDefaultAgentStatus](#) ([MCAgency_t](#) agency, enum [MC_AgentStatus_e](#) status)
Sets default incoming agent status.
- EXPORTMC int [MC_SetThreadOn](#) ([MCAgencyOptions_t](#) *options, enum [MC_ThreadIndex_e](#) index)
Sets a MobileC thread to "on" status.
- EXPORTMC int [MC_SetThreadsAllOn](#) ([MCAgencyOptions_t](#) *options)
Set all Mobile-C threads on.
- EXPORTMC int [MC_SetThreadOff](#) ([MCAgencyOptions_t](#) *options, enum [MC_ThreadIndex_e](#) index)
Sets a MobileC thread to "off" status.
- EXPORTMC int [MC_SetThreadsAllOff](#) ([MCAgencyOptions_t](#) *options)
Set all MobileC threads to 'off' status.
- EXPORTMC int [MC_PrintAgentCode](#) ([MCAgent_t](#) agent)
Prints an agents code to stdout.
- EXPORTMC int [MC_QueueRDLock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)

Lock an agency queue for reading. Prevents other threads from writing.

- EXPORTMC int **MC_QueueRDUnlock** (**MCAgency_t** agency, enum **MC_QueueIndex_e** queue)
Unlock an agency queue that was previously locked for reading.
- EXPORTMC int **MC_QueueWRLock** (**MCAgency_t** agency, enum **MC_QueueIndex_e** queue)
Lock an agency queue for writing. Prevents other threads from reading and writing.
- EXPORTMC int **MC_QueueWRUnlock** (**MCAgency_t** agency, enum **MC_QueueIndex_e** queue)
Unlock an agency queue that was previously locked for writing.
- EXPORTMC char * **MC_RetrieveAgentCode** (**MCAgent_t** agent)
Retrieves an agent's Ch code.
- EXPORTMC int **MC_ResetSignal** (**MCAgency_t** attr)
Reset a MobileC signal.
- EXPORTMC int **MC_SearchForService** (**MCAgency_t** attr, const char *searchString, char ***agentNames, char ***serviceNames, int **agentIDs, int *numResults)
Search the directory facilitator for a service.
- EXPORTMC int **MC_SendAgent** (**MCAgency_t** attr, const char *message)
Sends an agent migration message.
- EXPORTMC int **MC_SendAgentFile** (**MCAgency_t** attr, const char *filename)
Sends an agent migration message.
- EXPORTMC int **MC_SendAgentMigrationMessage** (**MCAgency_t** attr, const char *message, const char *hostname, int port)
Sends an agent migration message.
- EXPORTMC int **MC_SendAgentMigrationMessageFile** (**MCAgency_t** attr, const char *filename, const char *hostname, int port)
Sends an agent migration message.
- EXPORTMC int **MC_SetAgentStatus** (**MCAgent_t** agent, enum **MC_AgentStatus_e** status)
Set an agent's status.
- EXPORTMC int **MC_Steer** (**MCAgency_t** attr, int(*funcptr)(void *data), void *arg)
Set up a steerable algorithm.
- EXPORTMC enum **MC_SteerCommand_e** **MC_SteerControl** (void)
The MobileC user-algorithm steering function.
- EXPORTMC int **MC_SyncDelete** (**MCAgency_t** attr, int id)
Deletes a previously initialized synchronization variable.
- EXPORTMC int **MC_SyncInit** (**MCAgency_t** attr, int id)
Initializes a new MobileC synchronization variable.

- EXPORTMC int [MC_TerminateAgent](#) ([MCAgent_t](#) agent)
Halt a running agent.
- EXPORTMC int [MC_TerminateAgentWG](#) ([MCAgent_t](#) calling_agent, [MCAgent_t](#) agent)
- EXPORTMC int [MC_WaitAgent](#) ([MCAgency_t](#) attr)
Wait indefinitely.
- EXPORTMC [MCAgent_t MC_WaitRetrieveAgent](#) ([MCAgency_t](#) attr)
Wait and retrieve an agent.
- EXPORTMC int [MC_WaitSignal](#) ([MCAgency_t](#) attr, int signals)
Wait for a MobileC signal.

7.35.1 Detailed Description

MobileC api header file.

Definition in file [libmc.h](#).

7.35.2 Define Documentation

7.35.2.1 #define _ERROR_CODE_E_

Definition at line 161 of file libmc.h.

7.35.2.2 #define _FIPA_PERFORMATIVE_E_

Definition at line 323 of file libmc.h.

7.35.2.3 #define AGENT_T

Definition at line 299 of file libmc.h.

7.35.2.4 #define EXPORTMC

Definition at line 139 of file libmc.h.

7.35.2.5 #define MC_INITIALIZED_CODE 63280583

Definition at line 284 of file libmc.h.

Referenced by [MC_Initialize\(\)](#), and [MC_InitializeAgencyOptions\(\)](#).

7.35.2.6 #define MC_Wait(arg1) MC_MainLoop(arg1)

Definition at line 144 of file libmc.h.

7.35.3 Typedef Documentation

7.35.3.1 **typedef agency_t* agency_p**

Definition at line 258 of file libmc.h.

7.35.3.2 **typedef struct agency_s agency_t**

The agency handle.

7.35.3.3 **typedef agent_t* agent_p**

Definition at line 302 of file libmc.h.

7.35.3.4 **typedef struct agent_s agent_t**

Definition at line 300 of file libmc.h.

7.35.3.5 **typedef enum error_code_e error_code_t**

7.35.3.6 **typedef int(* MC_AgentInitCallbackFunc_t)(ChInterp_t interp, struct agent_s *agent, void *user_data)**

Definition at line 155 of file libmc.h.

7.35.3.7 **typedef enum MC_SteerCommand_e MC_SteerCommand_t**

Available commands for MC_Steer.

7.35.3.8 **typedef agency_p MCAgency_t**

Definition at line 259 of file libmc.h.

7.35.3.9 **typedef struct MCAgencyOptions_s MCAgencyOptions_t**

User modifiable agency options.

7.35.3.10 **typedef agent_t* MCAgent_t**

Definition at line 301 of file libmc.h.

7.35.3.11 `typedef struct stationary_agent_info_s stationary_agent_info_t`

7.35.4 Enumeration Type Documentation

7.35.4.1 `enum error_code_e`

Enumerator:

MC_SUCCESS
MC_ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY
MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND
MC_ERR_MEMORY
MC_ERR_SEND
MC_WARN_DUPLICATE
MC_SUCCESS
ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY
MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND
MC_ERR_MEMORY
MC_ERR_SEND
MC_ERR_OPTIONS_UNINITIALIZED
MC_WARN_DUPLICATE

Definition at line 166 of file libmc.h.

7.35.4.2 `enum fipa_performative_e`

Enumerator:

FIPA_ERROR
FIPA_ZERO
FIPA_ACCEPT_PROPOSAL
FIPA_AGREE
FIPA_CANCEL
FIPA_CALL_FOR_PROPOSAL
FIPA_CONFIRM

FIPA_DISCONFIRM
FIPA_FAILURE
FIPA_INFORM
FIPA_INFORM_IF
FIPA_INFORM_REF
FIPA_NOT_UNDERSTOOD
FIPA_PROPOGATE
FIPA_PROPOSE
FIPA_PROXY
FIPA_QUERY_IF
FIPA_QUERY_REF
FIPA_REFUSE
FIPA_REJECT_PROPOSAL
FIPA_REQUEST
FIPA_REQUEST_WHEN
FIPA_REQUEST_WHENEVER
FIPA_SUBSCRIBE
FIPA_ERROR
FIPA_ZERO
FIPA_ACCEPT_PROPOSAL
FIPA_AGREE
FIPA_CANCEL
FIPA_CALL_FOR_PROPOSAL
FIPA_CONFIRM
FIPA_DISCONFIRM
FIPA_FAILURE
FIPA_INFORM
FIPA_INFORM_IF
FIPA_INFORM_REF
FIPA_NOT_UNDERSTOOD
FIPA_PROPOGATE
FIPA_PROPOSE
FIPA_PROXY
FIPA_QUERY_IF
FIPA_QUERY_REF
FIPA_REFUSE
FIPA_REJECT_PROPOSAL
FIPA_REQUEST
FIPA_REQUEST_WHEN
FIPA_REQUEST_WHENEVER
FIPA_SUBSCRIBE

Definition at line 324 of file libmc.h.

7.35.4.3 enum MC_AgentStatus_e

An agent's current execution state.

Enumerator:

MC_NO_STATUS
MC_WAIT_CH Waiting to be started
MC_WAIT_MESSGSEND Finished, waiting to migrate
MC_AGENT_ACTIVE Running
MC_AGENT_NEUTRAL Not running, but do not flush
MC_AGENT_SUSPENDED Unused
MC_WAIT_FINISHED Finished, waiting to be flushed

Definition at line 310 of file libmc.h.

7.35.4.4 enum MC_AgentType_e

Enumerator:

MC_NONE
MC_REMOTE_AGENT
MC_LOCAL_AGENT
MC_RETURN_AGENT

Definition at line 305 of file libmc.h.

7.35.4.5 enum MC_QueueIndex_e

MobileC data queue indices.

Enumerator:

MC_QUEUE_MESSAGE
MC_QUEUE_AGENT
MC_QUEUE_CONNECTION
MC_QUEUE_SYNC
MC_QUEUE_BARRIER
MC_QUEUE_NUM

Definition at line 195 of file libmc.h.

7.35.4.6 enum MC_Signal_e

MobileC system signals.

Note

Each signal is activated after the corresponding action. i.e. The 'MC_RECV_MESSAGE' signal is activated after a message is received.

See also

[MC_WaitSignal\(\)](#), [MC_ResetSignal](#)

Enumerator:

MC_NO_SIGNAL No signal has been received

MC_RECV_CONNECTION A Connection has been received

MC_RECV_MESSAGE A Message has been received from a connection

MC_RECV_AGENT An normal agent has been parsed from a message

MC_RECV_RETURN A return agent has been parsed from a message

MC_EXEC_AGENT A normal agent has been executed.

MC_ALL_SIGNALS Catch any of the above signals

Definition at line 222 of file libmc.h.

7.35.4.7 enum MC_SteerCommand_e

Available commands for MC_Steer.

Enumerator:

MC_RUN Continue the algorithm

MC_SUSPEND Suspend/pause the algorithm

MC_RESTART Restart the algorithm from the beginning

MC_STOP Stop the algorithm

Definition at line 207 of file libmc.h.

7.35.4.8 enum MC_ThreadIndex_e

MobileC Module indices.

Enumerator:

MC_THREAD_DF Directory Facilitator

MC_THREAD_AMS Agent Management system

MC_THREAD_ACC Agency communications

MC_THREAD_CP Command Prompt

MC_THREAD_AGENT Agent threads

MC_THREAD_ALL

Definition at line 184 of file libmc.h.

7.35.5 Function Documentation

7.35.5.1 EXPORTMC int MC_AclAddReceiver (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 337 of file libmc.c.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_New()`, `fipa_agent_identifier_set_New()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_url_New()`, `fipa_url_sequence_New()`, `fipa_agent_identifier_s::name`, `fipa_url_sequence_s::num`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::receiver`, `fipa_acl_message_s::receiver_num`, `fipa_url_s::str`, `strdup`, and `fipa_url_sequence_s::urls`.

Referenced by `MC_AclAddReceiver_chdl()`.

7.35.5.2 EXPORTMC int MC_AclAddReplyTo (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 373 of file libmc.c.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_New()`, `fipa_agent_identifier_set_New()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_url_New()`, `fipa_url_sequence_New()`, `fipa_agent_identifier_s::name`, `fipa_url_sequence_s::num`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::reply_to`, `fipa_url_s::str`, `strdup`, and `fipa_url_sequence_s::urls`.

Referenced by `MC_AclAddReplyTo_chdl()`.

7.35.5.3 EXPORTMC int MC_AclDestroy (struct fipa_acl_message_s * *message*)

Destroy a FIPA ACL message.

Parameters

message The ACL message to destroy

Returns

0 on success, error code on failure.

Definition at line 84 of file libmc.c.

References `fipa_acl_message_Destroy()`.

Referenced by `MC_AclDestroy_chdl()`.

7.35.5.4 EXPORTMC const char* MC_AclGetContent (struct fipa_acl_message_s * *acl*)

Definition at line 265 of file libmc.c.

References `fipa_string_s::content`, and `fipa_acl_message_s::content`.

Referenced by `MC_AclGetContent_chdl()`.

7.35.5.5 EXPORTMC char* MC_AclGetConversationID (struct fipa_acl_message_s * *acl*)

Definition at line 240 of file libmc.c.

References `fipa_string_s::content`, `fipa_expression_s::content`, `fipa_acl_message_s::conversation_id`, and `fipa_expression_s::content_u::string`.

Referenced by `MC_AclGetConversationID_chdl()`.

7.35.5.6 EXPORTMC enum fipa_performative_e MC_AclGetPerformative (struct fipa_acl_message_s * *acl*)

Definition at line 246 of file libmc.c.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclGetPerformative_chdl()`.

7.35.5.7 EXPORTMC enum fipa_protocol_e MC_AclGetProtocol (struct fipa_acl_message_s * *acl*)

Definition at line 234 of file libmc.c.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclGetProtocol_chdl()`.

7.35.5.8 EXPORTMC int MC_AclGetSender (struct fipa_acl_message_s * *acl*, char ** *name*, char ** *address*)

Definition at line 252 of file libmc.c.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_s::name`, `fipa_acl_message_s::sender`, `fipa_url_s::str`, `strdup`, and `fipa_url_sequence_s::urls`.

Referenced by `MC_AclGetSender_chdl()`.

7.35.5.9 EXPORTMC struct fipa_acl_message_s* MC_AclNew (void) [read]

Allocate a new ACL Message.

Returns

A newly allocated and empty ACL message.

Definition at line 90 of file libmc.c.

References `fipa_acl_message_New()`.

Referenced by `MC_AclNew_chdl()`.

7.35.5.10 EXPORTMC int MC_AclPost (MCAgent_t *agent*, struct fipa_acl_message_s * *message*)

Post ACL message to agent.

Parameters

agent The agent to post the message to

message The message to post

Returns

0 if successful, or error_code_t type.

Definition at line 95 of file libmc.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), and agent_s::mailbox.

Referenced by MC_AclPost_chdl(), and MC_AclSend().

**7.35.5.11 EXPORTMC struct fipa_acl_message_s* MC_AclReply (struct fipa_acl_message_s *
acl_message) [read]**

Reply to an ACL message.

Parameters

acl_message The incoming acl message to reply to

Returns

A newly allocated ACL message

Note

This function simply generates a new ACL message with the 'receiver' field automatically set to the 'sender' field of the incoming message.

Definition at line 104 of file libmc.c.

References fipa_Reply().

Referenced by MC_AclReply_chdl().

**7.35.5.12 EXPORTMC struct fipa_acl_message_s* MC_AclRetrieve (MCAgent_t agent)
[read]**

Retrieve an ACL message.

Parameters

agent Agent to retrieve message from.

Returns

an ACL message struct on success or NULL on failure

Definition at line 110 of file libmc.c.

References ListPop(), ListWRLock(), ListWRUnlock(), and agent_s::mailbox.

Referenced by MC_AclRetrieve_chdl().

7.35.5.13 EXPORTMC int MC_AclSend (MCAgency_t attr, struct fipa_acl_message_s * acl)

Send a composed ACL Message.

Parameters

attr An initialized and running MobileC agency
acl An allocated and fully composed ACL message.

Returns

0 if successful, error code on failure.

Definition at line 120 of file libmc.c.

References fipa_agent_identifier_s::addresses, mtp_http_s::content, mtp_http_content_s::content_type, mtp_http_content_s::data, dynstring_Destroy(), FIPA_ACL, fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_Compose(), mtp_http_s::host, http_to_hostport(), MC_AclPost(), MC_FindAgentByName(), agency_s::mc_platform, dynstring_s::message, mtp_http_s::message_parts, message_Send(), message_s::message_type, mtp_http_CreateMessage(), mtp_http_Destroy(), mtp_http_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_agent_identifier_set_s::num, port, mc_platform_s::private_key, fipa_acl_message_s::receiver, fipa_url_s::str, strdup, message_s::target, mtp_http_s::target, and fipa_url_sequence_s::urls.

Referenced by MC_AclSend_chdl().

7.35.5.14 EXPORTMC int MC_AclSetContent (struct fipa_acl_message_s * *acl*, const char * *content*)

Definition at line 408 of file libmc.c.

References fipa_string_s::content, fipa_acl_message_s::content, fipa_string_Destroy(), fipa_string_New(), and strdup.

Referenced by MC_AclSetContent_chdl().

7.35.5.15 EXPORTMC int MC_AclSetConversationID (struct fipa_acl_message_s * *acl*, const char * *id*)

Definition at line 287 of file libmc.c.

References fipa_string_s::content, fipa_expression_s::content, fipa_acl_message_s::conversation_id, FIPA_EXPR_STRING, fipa_expression_New(), fipa_string_New(), strdup, fipa_expression_s::content_u::string, and fipa_expression_s::type.

Referenced by MC_AclSetConversationID_chdl().

7.35.5.16 EXPORTMC int MC_AclSetPerformative (struct fipa_acl_message_s * *acl*, enum fipa_performative_e *performative*)

Definition at line 306 of file libmc.c.

References fipa_acl_message_s::performative.

Referenced by MC_AclSetPerformative_chdl().

7.35.5.17 EXPORTMC int MC_AclSetProtocol (struct fipa_acl_message_s * *acl*, enum fipa_protocol_e *performative*)

Definition at line 271 of file libmc.c.

References FIPA_PROTOCOL_END, FIPA_PROTOCOL_ERROR, and fipa_acl_message_s::protocol.
Referenced by MC_AclSetProtocol_chdl().

7.35.5.18 EXPORTMC int MC_AclSetSender (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 314 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_Destroy(), fipa_agent_identifier_New(), fipa_url_New(), fipa_url_sequence_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_acl_message_s::sender, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclSetSender_chdl().

7.35.5.19 EXPORTMC struct fipa_acl_message_s* MC_AclWaitRetrieve (MCAgent_t *agent*) [read]

Wait for and retrieve an ACL message.

Parameters

agent Agent to retrieve message from.

Returns

an ACL message struct on success or NULL on failure

Definition at line 218 of file libmc.c.

References ListPop(), ListWRLock(), ListWRUnlock(), ListWRWait(), and agent_s::mailbox.

Referenced by MC_AclWaitRetrieve_chdl().

7.35.5.20 EXPORTMC int MC_AddAgent (MCAgency_t *attr*, MCAgent_t *agent*)

Add an agent to the agency 'attr'.

Parameters

attr a MobileC agency

agent An initialized MobileC agent

Returns

0 if successful, or error_code_t type

Definition at line 425 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, mc_platform_s::ams, COND_SIGNAL, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, agent_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by handler_COMPOSE_SEND(), and MC_AddAgent_chdl().

7.35.5.21 int MC_AddAgentInitCallback (MCAgency_t *agency*, MC_AgentInitCallbackFunc_t *function*, void * *user_data*)

Add an agent initialization callback function.

Parameters

agency a MobileC agency

function The callback function to add. This callback function will be called after an interpreter is initialized for an agent but before the agent is executed.

user_data A pointer to any user data that should be made available to the callback function

Returns

0 if successful, or error_code_t type

Definition at line 474 of file libmc.c.

References agency_s::agentInitCallback, and agency_s::agentInitUserData.

7.35.5.22 int MC_AddStationaryAgent (MCAgency_t *agency*, void *(*)(stationary_agent_info_t *) *agent_thread*, const char * *name*, void * *agent_args*)

Add a stationary agent to the agency.

Parameters

agency a MobileC agency

agent_thread The binary-space agent function

name The new agent's name

agent_args user arguments to pass to the agent

Returns

0 if successful, or error_code_t type

Definition at line 442 of file libmc.c.

References stationary_agent_info_s::agency, stationary_agent_info_s::agent, agent_NewBinary(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, stationary_agent_info_s::args, stationary_agent_info_s::attr, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, agent_s::name, strdup, stationary_agent_info_s::thread, and THREAD_CREATE.

7.35.5.23 int MC_AgentAddTask (MCagent_t *agent*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*)

Add a new task to an already existing agent.

Parameters

agent An existing agent

code The C code to use in the new task

return_var_name The name of the the return variable, or NULL if there is no return variable.

server The server to perform the task on.

persistent Whether or not the task is persistent. '1' indicates persistent, and '0' indicates not-persistent (the default)

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 499 of file libmc.c.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_task_New()`, `agent_task_s::code_id`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, `agent_task_s::persistent`, `agent_task_s::server_name`, `strdup`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `MC_AgentAddTask_chdl()`, and `MC_AgentAddTaskFromFile()`.

7.35.5.24 int MC_AgentAddTaskFromFile (MCAgent_t *agent*, const char **filename*, const char **return_var_name*, const char **server*, int *persistent*)

Add a new task to an already existing agent.

Parameters

agent An existing agent

filename The C code to use in the new task

return_var_name The name of the the return variable, or NULL if there is no return variable.

server The server to perform the task on.

persistent Whether or not the task is persistent. '1' indicates persistent, and '0' indicates not-persistent (the default)

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 572 of file libmc.c.

References `MC_AgentAddTask()`.

7.35.5.25 EXPORTMC int MC_AgentAttachFile (MCAgent_t *agent*, const char **name*, const char **filepath*)

Attach a file to the agent's current task.

Parameters

agent An existing agent

name The name to give the file

filepath The absolute path of the file

Returns

Returns 0 on success, or an error code on failure.

Definition at line 608 of file libmc.c.

References `agent_file_data_InitializeFromFilename()`, `agent_task_s::agent_file_list`, `agent_s::datastate`, `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, `agent_file_data_s::name`, `strup`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentAttachFile_chdl()`.

7.35.5.26 **MCAgency_t MC_AgentInfo_GetAgency (stationary_agent_info_t * stationary_agent_info)**

Get the host Mobile-C agency handle from a "stationary_agent_info_t" data structure.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 484 of file libmc.c.

References `stationary_agent_info_s::agency`.

7.35.5.27 **MCAgent_t MC_AgentInfo_GetAgent (stationary_agent_info_t * stationary_agent_info)**

Retrieve an agent handle from the stationary agent info from within a stationary agent.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid agent handle or NULL on failure.

7.35.6 Examples

The following example demonstrates usage of [MC_AgentInfo_GetAgent\(\)](#)

Definition at line 489 of file libmc.c.

References `stationary_agent_info_s::agent`.

7.35.6.1 **void* MC_AgentInfo_GetAgentArgs (stationary_agent_info_t * stationary_agent_info)**

Retrieve the agent argument supplied as the "agent_args" parameter in the [MC_AddStationaryAgent\(\)](#) function.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid pointer or NULL on failure.

Definition at line 494 of file libmc.c.

References stationary_agent_info_s::args.

7.35.6.2 EXPORTMC int MC_AgentListFiles (MCAgent_t *agent*, int *task_num*, char * *names*, int * *num_files*)**

Get a list of an agent's attached files.

Parameters

agent An existing agent

names A pointer to an unallocated two dimensional character array. The function will allocate any necessary memory for storing the names. If names are allocated, the array must be freed by the user.

num_files A pointer to an integer which will be filled with the number of filenames

Returns

returns 0 on success, -1 on failure.

Definition at line 630 of file libmc.c.

References agent_task_s::agent_file_list, agent_s::datastate, ListGetSize(), ListRDLock(), ListRDUnlock(), ListSearch(), agent_file_data_s::name, agent_datastate_s::number_of_tasks, strdup, and agent_datastate_s::tasks.

Referenced by MC_AgentListFiles_chdl().

7.35.6.3 EXPORTMC int MC_AgentProcessingBegin (MCAgency_t *attr*)

Begin a series of agent functions.

Parameters

agency A handle to a running agency

Returns

returns 0 on success, -1 on failure.

Definition at line 663 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListWRLock(), and agency_s::mc_platform.

7.35.6.4 EXPORTMC int MC_AgentProcessingEnd (MCAgency_t *attr*)

Definition at line 671 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListWRUnlock(), and agency_s::mc_platform.

7.35.6.5 EXPORTMC int MC_AgentRetrieveFile (MCAgent_t *agent*, int *task_num*, const char * *name*, const char * *save_path*)

Saves an agent's attached file to the filesystem.

Parameters

name The name of the agent's stored file

save_path The location to save the file (including the filename)

Returns

Returns 0 on success, -1 on failure.

Definition at line 678 of file libmc.c.

References agent_file_data_CmpName(), agent_task_s::agent_file_list, base64_decode_block(), base64_init_decodestate(), agent_file_data_s::data, agent_s::datastate, ListRDLock(), ListRDUnlock(), ListSearchCB(), agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

Referenced by MC_AgentRetrieveFile_chdl().

7.35.6.6 int MC_AgentReturnArrayDim (MCAgent_t *agent*, int *task_num*)

Get the dimension of an agent's return data, if it is an array.

Parameters

agent A return agent

task task to retrieve the agent return data size from

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 748 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

7.35.6.7 int MC_AgentReturnArrayExtent (MCAgent_t *agent*, int *task_num*, int *index*)

Get the extent of a dimension of an agent's return data, if it is an array.

Parameters

agent A return agent

task task to retrieve the agent return data size from

index The dimension index to get the extent

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 724 of file libmc.c.

References `agent_task_s::agent_return_data`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.35.6.8 int MC_AgentReturnArrayNum (MCAgent_t *agent*, int *task_num*)

Get the total number of elements of the agent return data.

Parameters

agent A return agent
task task to retrieve the agent return data size from
index The dimension index to get the extent

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 766 of file libmc.c.

References `agent_task_s::agent_return_data`, `interpreter_variable_data_s::array_dim`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.35.6.9 const void* MC_AgentReturnDataGetSymbolAddr (MCAgent_t *agent*, int *task_num*)

Get a pointer to the agent's return data.

Parameters

agent A return agent
task task to retrieve the agent return data from

Returns

Returns a pointer to the beginning of the task's return data on success. Returns NULL on failure.

Definition at line 796 of file libmc.c.

References `agent_task_s::agent_return_data`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.35.6.10 size_t MC_AgentReturnDataSize (MCAgent_t *agent*, int *task_num*)

Get the size of an agent's return data type.

Parameters

agent A return agent
task task to retrieve the agent return data type size from

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 813 of file libmc.c.

References `agent_task_s::agent_return_data`, `CH_DATATYPE_SIZE`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.35.6.11 int MC_AgentReturnDataType (MCAGent_t *agent*, int *task_num*)

Get the type of an agent's return data.

Parameters

agent A return agent

task task to retrieve the agent return data type from

Returns

Returns a positive integer on success or -1 on failure. The return type is of type `ChType_t`, defined in `ch.h`

Definition at line 836 of file libmc.c.

References `agent_task_s::agent_return_data`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.35.6.12 int MC_AgentReturnIsArray (MCAGent_t *agent*, int *task_num*)

Check to see whether or not an agent's return data is an array.

Parameters

agent A return agent

task task to check to see if the return data is an array.

Returns

Returns 1 if the return variable is an array, 0 if it is not an array, or -1 on failure.

Definition at line 846 of file libmc.c.

References `agent_task_s::agent_return_data`, `interpreter_variable_data_s::array_dim`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.35.6.13 const void* MC_AgentVariableRetrieve (MCAGent_t *agent*, const char * *var_name*, int *task_num*)

Retrieve a pointer to a previously saved variable.

Parameters

agent A MobileC agent.

var_name The name of the saved variable that has previously been saved.

task_num The previous completed task from which to retrieve the saved variable.

Returns

A pointer to the data on success or NULL on failure.

7.35.7 Examples

The following example demonstrates usage of [MC_AgentVariableRetrieve\(\)](#) from agent space.

Definition at line 867 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `interpreter_variable_data_CmpName()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableRetrieve_chdl()`.

7.35.7.1 int MC_AgentVariableRetrieveInfo (MCAgent_t *agent*, const char * *var_name*, int *task_num*, const void ** *data*, int * *dim*, const int ** *extent*)

Retrieve a info about a previously saved variable.

Parameters

agent A MobileC agent.

var_name The name of the saved variable that has previously been saved.

task_num The previous completed task from which to retrieve the saved variable.

data (Output) The Variable Data

dim (Output) The dimension of the data array

extent (Output) The extents of the output array

Returns

Error code.

Definition at line 888 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `interpreter_variable_data_CmpName()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

7.35.7.2 int MC_AgentVariableSave (MCAgent_t *agent*, const char * *var_name*)

Mark an agent variable for saving.

Parameters

agent A MobileC agent.

var_name The name of the variable to mark for saving.

Returns

0 on success, non-zero on failure.

See also

[test1.xml](#)

7.35.8 Examples

See agent_saved_variables_example/test1.xml for an example of usage of this api function.

7.35.9 Examples

The following example demonstrates usage of [MC_AgentVariableSave\(\)](#) from agent space.

Definition at line 912 of file libmc.c.

References agent_s::datastate, MC_ERR_MEMORY, agent_task_s::num_saved_variables, agent_task_s::saved_variables, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_AgentVariableSave_chdl().

7.35.9.1 EXPORTMC int MC_Barrier (MCAgency_t *attr*, int *id*)

Definition at line 933 of file libmc.c.

References barrier_node_CmpID(), mc_platform_s::barrier_queue, barrier_node_s::cond, COND_BROADCAST, COND_WAIT, ListRDLock(), ListRDUnlock(), ListSearchCB(), barrier_node_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, barrier_node_s::num_registered, and barrier_node_s::num_waiting.

Referenced by MC_Barrier_chdl().

7.35.9.2 EXPORTMC int MC_BarrierDelete (MCAgency_t *attr*, int *id*)

Find and delete an initialized MobileC Barrier.

Parameters

- attr* A running MobileC agency
- id* The id of the barrier node to delete

Returns

returns 0 on success, error if the node is not found or other failure.

Definition at line 982 of file libmc.c.

References barrier_node_CmpID(), barrier_node_Destroy(), mc_platform_s::barrier_queue, ListDeleteCB(), ListWRLock(), ListWRUnlock(), and agency_s::mc_platform.

Referenced by MC_BarrierDelete_chdl().

7.35.9.3 EXPORTMC int MC_BarrierInit (MCAgency_t *attr*, int *id*, int *num_procs*)

Initialize a MobileC Barrier.

Parameters

- attr* A running MobileC agency

id The requested barrier id

num_procs The number of agents/threads/processes that will wait on the barrier

Returns

The allocated barrier id. May differ from the requested id if it is already in use.

7.35.10 Examples

The following example demonstrates an agent which sets up an MC_BARRIER.

Definition at line 961 of file libmc.c.

References barrier_node_CmpID(), barrier_node_Initialize(), mc_platform_s::barrier_queue, ListAdd(), ListRDLOCK(), ListRDUnlock(), ListSearchCB(), ListWRLOCK(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, and MC_SUCCESS.

Referenced by MC_BARRIERInit_chdl().

7.35.10.1 EXPORTMC int MC_CallAgentFunc (MCAgent_t *agent*, const char **funcName*, void **returnVal*, int *numArgs*, ...)

Use custom ChOptions_t type for internal Ch interpreter.

Parameters

attr A running MobileC agency

options Initialized Ch options structure

Returns

0 on success, error_code_t type on failure Calls a function defined in an agent

Parameters

agent An initialized and executed MobileC agent

funcName The name of the function to call

returnVal The agent function's return value

numArgs The number of arguments supplied to the agent function

... A variable argument list to be supplied to the agent function

Returns

0 if successful, error_code_t type on failure

7.35.11 Example

Definition at line 1000 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.35.11.1 EXPORTMC int MC_CallAgentFuncArg (MCAgent_t *agent*, const char **funcName*, void **returnVal*, void **arg*)

Calls a function defined in an agent.

Parameters

- agent* An initialized and executed MobileC agent
- funcName* The name of the function to call
- returnVal* The agent function's return value
- arg* The agent functions argument

Note

The agent function must be of the form 'void* func(void* arg);'

Returns

0 if successful, error_code_t type on failure

7.35.12 Example

Definition at line 1021 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.35.12.1 EXPORTMC int MC_CallAgentFuncV (MCAgent_t *agent*, const char **funcName*, void **returnVal*, va_list *ap*)

Calls a function defined in an agent.

Parameters

- agent* An initialized and executed MobileC agent
- funcName* The name of the function to call
- returnVal* The agent function's return value
- ap* A variable argument list

Returns

0 if successful, error_code_t type on failure

Definition at line 1040 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.35.12.2 EXPORTMC int MC_CallAgentFuncVar (MCAgent_t *agent*, const char **funcName*, void **returnVal*, ChVaList_t *arglist*)

Definition at line 1060 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

Referenced by MC_CallAgentFunc_chdl().

7.35.12.3 EXPORTMC MCAgent_t MC_ComposeAgent (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

- name*** The desired name of the new agent.
- home*** The home of the new agent.
- owner*** The owner of the new agent.
- code*** The agent code
- return_var_name*** The name of the agent's return variable. Set to "no-return" if no return variable is desired.
- server*** The target destination of the agent.
- persistent*** A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Definition at line 1100 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

7.35.12.4 EXPORTMC MCAgent_t MC_ComposeAgentFromFile (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*)

Compose a new agent dynamically from a source code file.

Parameters

- filename*** The filename of the source file
- name*** The desired name of the new agent.
- home*** The home of the new agent.
- owner*** The owner of the new agent.
- code*** The agent code
- return_var_name*** The name of the agent's return variable. Set to "no-return" if no return variable is desired.
- server*** The target destination of the agent.
- persistent*** A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Definition at line 1226 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by handler_COMPOSE_SEND().

7.35.12.5 EXPORTMC MCAgent_t MC_ComposeAgentFromFileS (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file
name The desired name of the new agent.
home The home of the new agent.
owner The owner of the new agent.
code The agent code
return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.
server The target destination of the agent.
workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.
persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated. Please use the MC_ComposeAgentFromFileWithWorkgroup function instead.

Definition at line 1248 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

7.35.12.6 EXPORTMC MCAgent_t MC_ComposeAgentFromFileWithWorkgroup (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file
name The desired name of the new agent.
home The home of the new agent.
owner The owner of the new agent.
code The agent code
return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.
server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Definition at line 1273 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentFromFile(), MC_ComposeAgentFromFile_chdl(), MC_ComposeAgentFromFileS(), and MC_ComposeAgentFromFileWithWorkgroup_chdl().

7.35.12.7 EXPORTMC MCAgent_t MC_ComposeAgentS (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated. Please use the MC_ComposeAgentWithWorkgroup function instead.

Definition at line 1123 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentWithWorkgroup_chdl().

7.35.12.8 EXPORTMC MCAgent_t MC_ComposeAgentWithWorkgroup (const char * *name*, const char **home*, const char **owner*, const char **code*, const char * *return_var_name*, const char **server*, int *persistent*, const char **workgroup_code*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated

Definition at line 1149 of file libmc.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_datastate_New(), agent_New(), agent_s::agent_status, agent_task_New(), agent_s::agent_type, agent_s::datastate, agent_s::home, MC_LOCAL_AGENT, MC_WAIT_MESSAGESEND, agent_s::name, agent_datastate_s::number_of_tasks, agent_s::orphan, agent_s::owner, agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, agent_task_s::var_name, and agent_s::wg_code.

Referenced by MC_ComposeAgent(), MC_ComposeAgent_chdl(), MC_ComposeAgentFromFileDialogWithWorkgroup(), and MC_ComposeAgentS().

7.35.12.9 EXPORTMC int MC_CondBroadcast (MCAgency_t *attr*, int *id*)

Wakes up all agents/threads waiting on a condition variable.

Parameters

attr A MobileC agency

id Synchronization variable id to broadcast to

See also

[MC_SyncInit\(\)](#), [MC_CondSignal\(\)](#)

Returns

0 on success, error_code_t type on failure

Definition at line 1319 of file libmc.c.

References syncListNode_s::cond, COND_BROADCAST, ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondBroadcast_chdl().

7.35.12.10 EXPORTMC int MC_CondReset (MCAgency_t *attr*, int *id*)

Reset a previously signalled MobileC condition variable.

Parameters

attr A MobileC Agency

id The synchronization variable id to reset

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

Definition at line 1386 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondReset_chdl().

7.35.12.11 EXPORTMC int MC_CondSignal (MCAgency_t *attr*, int *id*)

Wakes up at least one thread waiting on a condition variable.

Parameters

attr A MobileC agency

id synchronization variable id

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

7.35.13 Example

The following example demonstrates the agent-space version of the function, which is nearly identical to the binary space api function.

Definition at line 1339 of file libmc.c.

References syncListNode_s::cond, COND_SIGNAL, ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondSignal_chdl().

7.35.13.1 EXPORTMC int MC_CondWait (MCAgency_t *attr*, int *id*)

Wait on a MobileC synchronization variable.

Parameters

attr A MobileC agency

id a synchronization variable id

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

7.35.14 Example

The following example demonstrates the agent-space version of this function.

Definition at line 1359 of file libmc.c.

References syncListNode_s::cond, COND_WAIT, ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondWait_chdl().

7.35.14.1 int MC_CopyAgent (MCAgent_t * *agent_out*, const MCAgent_t *agent_in*)

Performs a deep-copy of an agent structure.

Parameters

agent_out A pointer to the agent to copy to.

agent_in The agent to copy

Returns

0 on success, error_code_t type on failure.

Definition at line 1409 of file libmc.c.

References agent_Copy(), and MC_SUCCESS.

7.35.14.2 EXPORTMC int MC_DeleteAgent (MCAgent_t *agent*)

Stop and remove an agent.

Parameters

agent An agent in any state (running, waiting, etc)

Returns

0 on success, error_code_t type on failure

Definition at line 1416 of file libmc.c.

References agent_CmpName(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, CHECK_NULL, ListDeleteCB(), ListWRLock(), ListWRUnlock(), MC_ERR_INVALID, MC_ERR_INVALID_ARGS, agent_s::mc_platform, MC_SUCCESS, MC_TerminateAgent(), agent_s::name, strdup, and agent_s::wg_code.

Referenced by MC_DeleteAgent_chdl().

7.35.14.3 EXPORTMC int MC_DeleteAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Stop and remove an agent in the same workgroup.

Parameters

calling_agent The calling agent

agent An agent in any state (running, waiting, etc)

Note

The agents must belong to the same workgroup.

Returns

0 on success, error_code_t type on failure

Definition at line 1446 of file libmc.c.

References agent_CmpName(), agent_Destroy(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, CHECK_NULL, ListDeleteCB(), ListWRLock(), ListWRUnlock(), MC_ERR_INVALID, MC_ERR_INVALID_ARGS, agent_s::mc_platform, MC_SUCCESS, MC_TerminateAgentWG(), agent_s::name, strdup, and agent_s::wg_code.

Referenced by MC_DeleteAgentWG_chdl().

7.35.14.4 int MC_DestroyServiceSearchResult (char *agentName*, char ***serviceName*, int **agentID*, int *numResult*)**

Free memory allocated by a Service Search operation.

Parameters

agentName agent names returned by a search operation.
serviceName service names return by a search operation.
agentID list of agent id's returned by a search operation.
numResult The number of hits returned by a search operation.

Returns

0 on success, error code on failure.

Definition at line 1483 of file libmc.c.

Referenced by MC_DestroyServiceSearchResult_chdl().

7.35.14.5 EXPORTMC int MC_End (MCAgency_t *attr*)

End an agency.

Parameters

attr A running agency

Returns

0 on success, error_code_t type on failure

7.35.15 Example

Definition at line 1532 of file libmc.c.

References mc_platform_s::acc, mc_platform_s::ams, buf, mc_platform_s::cmd_prompt, COND_BROADCAST, COND_SIGNAL, mc_platform_s::connection_queue, mc_platform_s::df, GET_THREAD_MODE, agency_s::hostName, ListWRLock(), ListWRUnlock(), agency_s::mc_platform, mc_platform_Destroy(), MC_THREAD_ACC, MC_THREAD_AMS, MC_THREAD_CP, MC_THREAD_DF, mc_platform_s::message_queue, MUTEX_LOCK, MUTEX_UNLOCK, agency_s::portno, mc_platform_s::quit, mc_platform_s::quit_cond, mc_platform_s::quit_lock, send, cmd_prompt_s::thread, THREAD_CANCEL, THREAD_JOIN, and agency_s::threads.

Referenced by MC_End_chdl().

7.35.15.1 EXPORTMC MCAgent_t MC_FindAgentByID (MCAgency_t *attr*, int *ID*)

Find an agent by its id.

Parameters

attr the agency to search

ID the id to search for

Returns

a valid agent on success, NULL on failure

Definition at line 1652 of file libmc.c.

References agent_CmpID(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListRD-Lock(), ListRDUlock(), ListSearchCB(), and agency_s::mc_platform.

Referenced by MC_FindAgentByID_chdl().

7.35.15.2 EXPORTMC MCAgent_t MC_FindAgentByName (MCAgency_t *attr*, const char * *name*)

Find an agent by its name.

Parameters

attr a running agency

name name to search for

Returns

a valid agent on success or NULL on failure

7.35.16 Example

Definition at line 1631 of file libmc.c.

References agent_CmpName(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListRD-Lock(), ListRDUlock(), ListSearchCB(), and agency_s::mc_platform.

Referenced by MC_AclSend(), MC_DeleteAgent_chdl(), MC_DeleteAgentWG_chdl(), MC_FindAgentByName_chdl(), MC_TerminateAgent_chdl(), and MC_TerminateAgentWG_chdl().

7.35.16.1 EXPORTMC void* MC_GetAgentExecEngine (MCAgent_t *agent*)

Retrieve an agent's Ch interpreter.

Parameters

agent a valid agent

Returns

a Ch interpreter of type 'ChInterp_t' on success, or NULL on failure.

Definition at line 1717 of file libmc.c.

References agent_s::agent_interp.

7.35.16.2 EXPORTMC int MC_GetAgentID (MCAgent_t *agent*)

Retrieve an agent's id.

Definition at line 1723 of file libmc.c.

References agent_s::id.

Referenced by MC_GetAgentID_chdl().

7.35.16.3 EXPORTMC char* MC_GetAgentName (MCAgent_t *agent*)

Definition at line 1731 of file libmc.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by MC_GetAgentName_chdl().

7.35.16.4 EXPORTMC int MC_GetAgentNumTasks (MCAgent_t *agent*)

Retrive the number of tasks an agent has.

7.35.17 Example

Definition at line 1814 of file libmc.c.

References agent_s::datastate, and agent_datastate_s::number_of_tasks.

Referenced by MC_GetAgentNumTasks_chdl().

7.35.17.1 EXPORTMC int MC_GetAgentReturnData (MCAgent_t *agent*, int *task_num*, void ** *data*, int * *dim*, int ** *extent*)

Get an agent's return data.

Parameters

agent a valid agent

task_num the task for which to retrieve the return data. The task must already be completed.

data the return data. May be multi dimensional array.

dim the number of dimensions of the return array.

extent the extent of each one of the array dimensions.

7.35.18 Example

This file demonstrates the retrieval of agent return data from an agent

This is the agent which gets the data

Definition at line 1749 of file libmc.c.

References `agent_task_s::agent_return_data`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `CH_DATATYPE_SIZE`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.35.18.1 EXPORTMC int MC_GetAgents (MCAgency_t *attr*, MCAgent_t ** *agents*, int * *num_agents*, unsigned int *agent_status_flags*)

Get a list of agents that match a certain agent status.

Parameters

agency A handle to a running Mobile-C agency

agents The address of an uninitialized pointer to an agent. An array of agents will be allocated, which will need to be freed by the user.

num_agents A pointer to an integer. The integer will be filled with the number of agents allocated for the 'agents' variable.

agent_status_flags These contain flags of agent statuses. For instance, if a user wishes to retrieve all agents with either the status MC_WAIT_CH or MC_AGENT_NEUTRAL, they may use an `agent_status_flag` of $((1 << \text{MC_WAIT_CH}) | (1 << \text{MC_AGENT_NEUTRAL}))$. All valid agent statuses are enumerated in the enumeration `MC_AgentStatus_e`, located in [libmc.h](#).

Definition at line 1830 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `agent_s::agent_status`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, and `agency_s::mc_platform`.

7.35.18.2 EXPORTMC int MC_GetAgentStatus (MCAgent_t *agent*)

Get an agent's current status.

Returns

returns type 'enum MC_AgentStatus_e'

Definition at line 1693 of file libmc.c.

References `agent_s::agent_status`, `agent_s::agent_status_lock`, `agent_s::lock`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `MC_GetAgentStatus_chdl()`.

7.35.18.3 EXPORTMC enum MC_AgentType_e MC_GetAgentType (MCAgent_t *agent*)

Get an agent's type.

Returns

returns type 'enum MC_AgentType_e'

Definition at line 1820 of file libmc.c.

References `agent_s::agent_type`.

7.35.18.4 EXPORTMC char* MC_GetAgentXMLString (MCAgent_t *agent*)

Get an agent's xml string.

Returns

a malloc'd character string containing the agent's xml code

Definition at line 1705 of file libmc.c.

References `agent_s::datastate`, `mxmlSaveAllocString()`, and `agent_datastate_s::xml_agent_root`.

Referenced by `MC_GetAgentXMLString_chdl()`.

7.35.18.5 EXPORTMC int MC_GetAllAgents (MCAgency_t *attr*, MCAgent_t ** *agents*, int * *num_agents*)

Get all of the agents on an agency.

Parameters

agency A handle to a running Mobile-C agency

agents The address of an uninitialized pointer to an agent. An array of agents will be allocated, which will need to be freed by the user.

num_agents A pointer to an integer. The integer will be filled with the number of agents allocated for the 'agents' variable.

Definition at line 1876 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListGetSize()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, and `agency_s::mc_platform`.

7.35.18.6 EXPORTMC int MC_GetNumAgents (MCAgency_t *attr*, int * *num_agents*)

Get the number of agents residing on an agency.

Parameters

attr A handle to a running Mobile-C agency

num_agents A pointer to an integer to fill with the number of agents

Returns

Returns 0 on success, non-zero on failure.

Definition at line 1907 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListGetSize()`, `ListRDLock()`, `ListRDUnlock()`, and `agency_s::mc_platform`.

7.35.18.7 EXPORTMC int MC_HaltAgency (MCAgency_t *agency*)

Halt an agency: Do not process new entries in queues.

Parameters

agency A handle to a running MobileC agency.

Returns

0 on success, non-zero on failure.

Definition at line 1920 of file libmc.c.

References mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_HaltAgency_chdl().

7.35.18.8 EXPORTMC MCAgency_t MC_Initialize (int *port*, MCAgencyOptions_t * *options*)

Initialize and start a MobileC agency.

Parameters

port the TCP port the agency should bind to

options initialized MobileC options or NULL for default options

Returns

a handle to a running MobileC agency or NULL on failure

7.35.19 Example

Definition at line 1929 of file libmc.c.

References agency_s::agentInitCallback, agency_s::agentInitUserData, MCAgencyOptions_s::bluetooth, agency_s::bluetooth, buf, MCAgencyOptions_s::ch_options, agency_s::client, MCAgencyOptions_s::default_agent_status, agency_s::default_agentstatus, f, agency_s::hostName, MCAgencyOptions_s::initialized, MCAgencyOptions_s::initInterps, agency_s::initInterps, agency_s::known_host_filename, MCAgencyOptions_s::known_host_filename, MC_InitializeAgencyOptions(), MC_INITIALIZED_CODE, agency_s::mc_platform, mc_platform_Initialize(), MC_THREAD_ALL, MCAgencyOptions_s::passphrase, agency_s::portno, agency_s::priv_key_filename, MCAgencyOptions_s::priv_key_filename, read_encrypted_file(), agency_s::server, MCAgencyOptions_s::stack_size, agency_s::stack_size, strdup, MCAgencyOptions_s::threads, and agency_s::threads.

7.35.19.1 EXPORTMC int MC_InitializeAgencyOptions (struct MCAgencyOptions_s * *options*)

Initialize MobileC options.

Parameters

options options to initialize.

Returns

0 on success, error_code_t on failure

Note

MobileC options should be initialized with this function before any of its members are modified.

7.35.20 Example

Definition at line 2049 of file libmc.c.

References MCAgencyOptions_s::bluetooth, MCAgencyOptions_s::default_agent_status, MCAgencyOptions_s::initialized, MCAgencyOptions_s::initInterps, MCAgencyOptions_s::known_host_filename, MC_INITIALIZED_CODE, MC_THREAD_ALL, MC_WAIT_CH, MCAgencyOptions_s::modified, MCAgencyOptions_s::passphrase, MCAgencyOptions_s::priv_key_filename, MCAgencyOptions_s::stack_size, and MCAgencyOptions_s::threads.

Referenced by MC_Initialize().

7.35.20.1 EXPORTMC int MC_LoadAgentFromFile (MCAgency_t *attr*, const char **filename*)

Load an agent from a file into an agency.

Parameters

agency A valid and running Mobile-C agency
filename Filename containing the agent to load

Returns

0 on success, non-zero on failure.

Definition at line 2072 of file libmc.c.

References buf, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), mc_platform_s::message_queue, MXML_DESCEND, mxmlFindElement(), mxmlLoadString(), message_s::to_address, message_s::xml_payload, and message_s::xml_root.

7.35.20.2 EXPORTMC int MC_MainLoop (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever.

Definition at line 2923 of file libmc.c.

References COND_WAIT, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_cond, and mc_platform_s::quit_lock.

7.35.20.3 EXPORTMC int MC_MigrateAgent (MCAgent_t *agent*, const char **hostname*, int *port*)

Migrates a running agent to another host.

Parameters

- agent* The agent to migrate
- hostname* The new host to migrate the agent to
- port* The new port to migrate the agent to

Returns

0 on success, error_code_t type on failure.

Definition at line 2146 of file libmc.c.

References agent_s::datastate, agent_datastate_s::progress_modifier, agent_task_s::server_name, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_MigrateAgent_chdl().

7.35.20.4 EXPORTMC int MC_MutexLock (MCAgency_t *attr*, int *id*)

Locks a MobileC synchronization variable as a mutex.

Parameters

- attr* a MobileC agency handle
- id* the synchronization variable id to lock

Returns

0 on success, error_code_t type on failure

7.35.21 Example

Consider the following agents, which use the agent-space version of this api function. Note that the 'sleep' agent is sent first, followed by the 'wake' agent.

Definition at line 2168 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, agency_s::mc_platform, MUTEX_LOCK, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_MutexLock_chdl().

7.35.21.1 EXPORTMC int MC_MutexUnlock (MCAgency_t *attr*, int *id*)

Definition at line 2185 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, agency_s::mc_platform, MUTEX_UNLOCK, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_MutexUnlock_chdl().

7.35.21.2 EXPORTMC int MC_PrintAgentCode (MCAgent_t *agent*)

Prints an agents code to stdout.

Returns

0 on success, error_code_t on failure

Definition at line 2202 of file libmc.c.

References agent_datastate_s::agent_code, agent_s::datastate, agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, agent_datastate_s::number_of_tasks, and agent_datastate_s::task_progress.

Referenced by MC_PrintAgentCode_chdl().

7.35.21.3 EXPORTMC int MC_QueueRDLock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Lock an agency queue for reading. Prevents other threads from writing.

Definition at line 2218 of file libmc.c.

References ListRDLock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.35.21.4 EXPORTMC int MC_QueueRDUnlock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Unlock an agency queue that was previously locked for reading.

Definition at line 2230 of file libmc.c.

References ListRDUnlock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.35.21.5 EXPORTMC int MC_QueueWRLock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Lock an agency queue for writing. Prevents other threads from reading and writing.

Definition at line 2242 of file libmc.c.

References ListWRLock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.35.21.6 EXPORTMC int MC_QueueWRUnlock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Unlock an agency queue that was previously locked for writing.

Definition at line 2254 of file libmc.c.

References ListWRUnlock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.35.21.7 EXPORTMC int MC_RegisterService (MCAgency_t *agency*, MCAgent_t *agent*, int *agentID*, const char * *agentName*, char ** *serviceNames*, int *numServices*)

Register a new service with the Directory Facilitator.

Parameters

agency a MobileC agency handle
agent (OPTIONAL: See note) a MobileC agent
agentID (OPTIONAL: See note) a MobileC agent id
agentName (OPTIONAL: See note) a MobileC agent name
serviceNames an array of character strings of service names
numServices the number of services described in 'serviceNames'

Returns

0 on success, error_code_t type on failure

Note

Three of the input arguments are optional. The function expects as input the arguments 'agent XOR (agentID AND agentName)'.

7.35.22 Example

Definition at line 2266 of file libmc.c.

References CHECK_NULL, mc_platform_s::df, df_AddRequest(), df_request_list_node_New(), agent_s::id, MC_ERR_INVALID_ARGS, MC_ERR_MEMORY, agency_s::mc_platform, MUTEX_INIT, MUTEX_T, and agent_s::name.

Referenced by MC_RegisterService_chdl().

7.35.22.1 EXPORTMC int MC_ResetSignal (MCAgency_t *attr*)

Reset a MobileC signal.

Returns

0 on success, error_code_t on failure

See also

[MC_WaitSignal\(\)](#)

Definition at line 2405 of file libmc.c.

References COND_SIGNAL, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, MC_NO_SIGNAL, agency_s::mc_platform, mc_platform_s::MC_signal, MUTEX_LOCK, and MUTEX_UNLOCK.

7.35.22.2 EXPORTMC int MC_ResumeAgency (MCAgency_t *agency*)

Resumes a halted agency.

Parameters

agency An agency previously halted with the [MC_HaltAgency\(\)](#) function.

Returns

0 on success, non-zero on failure.

Definition at line 2345 of file libmc.c.

References mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_ResumeAgency_chdl().

7.35.22.3 EXPORTMC MCAgent_t MC_RetrieveAgent (MCAgency_t *attr*)

Retrieves the oldest agent from an agency.

Returns

a valid agent or NULL on failure

Definition at line 2354 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_lock, ListRDLock(), ListRDUnlock(), ListSearch(), MC_AGENT_NEUTRAL, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and list_s::size.

Referenced by MC_RetrieveAgent_chdl().

7.35.22.4 EXPORTMC char* MC_RetrieveAgentCode (MCAgent_t *agent*)

Retrieves an agent's Ch code.

Returns

a malloc'd character string on success, NULL on failure

Definition at line 2389 of file libmc.c.

References agent_datastate_s::agent_code, buf, agent_s::datastate, agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_datastate_s::task_progress.

Referenced by MC_RetrieveAgentCode_chdl().

7.35.22.5 EXPORTMC int MC_SearchForService (MCAgency_t *attr*, const char * *searchString*, char * *agentNames*, char *** *serviceNames*, int ** *agentIDs*, int * *numResults*)**

Search the directory facilitator for a service.

Returns

0 on success, error_code_t on failure

Parameters

attr (input) a MobileC agency handle

searchString (input) substring to search services for

agentNames (return) array of agent names with matching services

serviceNames (return) array of matching service names

agentIDs (return) array of matching agent IDs

numResults (return) number of matching results

7.35.23 Example

Definition at line 2416 of file libmc.c.

References CHECK_NULL, COND_SLEEP_ACTION, mc_platform_s::df, df_AddRequest(), df_request_list_node_Destroy(), df_request_list_node_New(), df_request_search_Destroy(), df_request_search_New(), MC_ERR_MEMORY, agency_s::mc_platform, MC_SUCCESS, and search.

Referenced by MC_SearchForService_chdl().

7.35.23.1 EXPORTMC int MC_SemaphorePost (MCAgency_t *attr*, int *id*)

Post to a MobileC synchronization variable semaphore.

Parameters

attr a MobileC agency handle

id the synchronization variable id to post to

Returns

0 on success, error_code_t type on failure

7.35.24 Example

Definition at line 2466 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_POST, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_SemaphorePost_chdl().

7.35.24.1 EXPORTMC int MC_SemaphoreWait (MCAgency_t *attr*, int *id*)

Decreases a MobileC synchronization variable semaphore count by one.

Parameters

attr a MobileC agency handle

id synchronization variable id to wait on

Returns

0 on MC_SUCCESS, error_code_t type of failure

Note

If the semaphore count is already zero, this function will block until another thread posts to the semaphore.

7.35.25 Example

Definition at line 2483 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_WAIT, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_SemaphoreWait_chdl().

7.35.25.1 EXPORTMC int MC_SendAgent (MCAgency_t *attr*, const char * *message*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

message a valid MobileC xml agent migration message

Definition at line 2510 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

7.35.25.2 EXPORTMC int MC_SendAgentFile (MCAgency_t *attr*, const char * *filename*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

filename file containing a valid MobileC xml agent migration message

Definition at line 2565 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, buf, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by handler_SEND().

7.35.25.3 EXPORTMC int MC_SendAgentMigrationMessage (MCAgency_t *attr*, const char * *message*, const char * *hostname*, int *port*)

Sends an agent migration message.

Parameters

- attr* a MobileC agency handle
- message* a valid MobileC xml agent migration message
- hostname* host to send the message to
- port* port to send the message to

Definition at line 2640 of file libmc.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), and mc_platform_s::message_queue.

Referenced by MC_SendAgentMigrationMessage_chdl().

7.35.25.4 EXPORTMC int MC_SendAgentMigrationMessageFile (MCAgency_t *attr*, const char * *filename*, const char * *hostname*, int *port*)

Sends an agent migration message.

Parameters

- attr* a MobileC agency handle
- filename* file containing a valid MobileC xml agent migration message
- hostname* hostname to send the agent to
- port* port to send the agent to

Definition at line 2677 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, buf, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_SendAgentMigrationMessageFile_chdl().

7.35.25.5 EXPORTMC int MC_SetAgentStatus (MCAgent_t *agent*, enum MC_AgentStatus_e *status*)

Set an agent's status.

Parameters

- agent* a MobileC agent
- status* agent status of type 'enum MC_AgentStatus_e'

Returns

0 on success, or error_code_t on failure

Definition at line 2764 of file libmc.c.

References agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, COND_BROADCAST, COND_SIGNAL, agent_s::lock, agent_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::orphan.

Referenced by MC_SetAgentStatus_chdl().

7.35.25.6 EXPORTMC int MC_SetDefaultAgentStatus (MCAgency_t *agency*, enum MC_AgentStatus_e *status*)

Sets default incoming agent status.

Parameters

agency a MobileC agency handle

status the status to set all incoming agents

Returns

0 on success, error_type_t on failure

Note

using this function will override any status the incoming agent attempts to set for itself.

Definition at line 2782 of file libmc.c.

References mc_platform_s::default_agentstatus, and agency_s::mc_platform.

Referenced by MC_SetDefaultAgentStatus_chdl().

7.35.25.7 EXPORTMC int MC_SetThreadOff (MCAgencyOptions_t * *options*, enum MC_ThreadIndex_e *index*)

Sets a MobileC thread to "off" status.

Parameters

options MobileC options previously initialized with [MC_InitializeAgencyOptions\(\)](#)

index the thread to set

Returns

0 on success, error_code_t on failure

Note

This function must be called before [MC_Initialize\(\)](#). Once an agency is started with MC_Initialize, the MC_SetThread functions will have no effect.

Definition at line 2809 of file libmc.c.

References SET_THREAD_OFF, and MCAgencyOptions_s::threads.

7.35.25.8 EXPORTMC int MC_SetThreadOn (MCAgencyOptions_t * *options*, enum MC_ThreadIndex_e *index*)

Sets a MobileC thread to "on" status.

Parameters

options MobileC options previously initialized with [MC_InitializeAgencyOptions\(\)](#)
index the thread to set

Returns

0 on success, error_code_t on failure

Note

This function must be called before [MC_Initialize\(\)](#). Once an agency is started with MC_Initialize, the MC_SetThread functions will have no effect.

Definition at line 2792 of file libmc.c.

References SET_THREAD_ON, and MCAgencyOptions_s::threads.

7.35.25.9 EXPORTMC int MC_SetThreadsAllOff (MCAgencyOptions_t * *options*)

Set all MobileC threads to 'off' status.

Parameters

options a MobileC options structure initialized with the [MC_InitializeAgencyOptions\(\)](#) function.

Returns

0 on success, error code on failure.

Definition at line 2816 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_OFF, and MCAgencyOptions_s::threads.

7.35.25.10 EXPORTMC int MC_SetThreadsAllOn (MCAgencyOptions_t * *options*)

Set all Mobile-C threads on.

Parameters

options MobileC options structure, initialized with [MC_InitializeAgencyOptions\(\)](#)

Returns

0 on success, error code on failure.

Definition at line 2799 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_ON, and MCAgencyOptions_s::threads.

7.35.25.11 EXPORTMC int MC_Steer (MCAgency_t *attr*, int(*)(void *data) *funcptr*, void * *arg*)

Set up a steerable algorithm.

Parameters

- attr* a MobileC agency handle
- funcptr* a function pointer to the algorithm
- arg* an argument for the algorithm function

Returns

0 on success, error_code_t on failure

Note

The algorithm function must contain a call to MC_SteerControl in order for the algorithm to be steerable.

7.35.26 Example

Definition at line 2826 of file libmc.c.

References agency_s::mc_platform, MC_RESTART, MC_RUN, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_lock, MUTEX_LOCK, and MUTEX_UNLOCK.

7.35.26.1 EXPORTMC enum MC_SteerCommand_e MC_SteerControl (void)

The MobileC user-algorithm steering function.

Returns

The current steering command

Note

This function belongs inside a user's steerable algorithm.

See also

[MC_Steer\(\)](#)

Definition at line 2845 of file libmc.c.

References COND_WAIT, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, MC_SUSPEND, MUTEX_LOCK, and MUTEX_UNLOCK.

7.35.26.2 EXPORTMC int MC_SyncDelete (MCAgency_t *attr*, int *id*)

Deletes a previously initialized synchronization variable.

Parameters

- attr* a MobileC agency handle

id the sync variable id to delete

Returns

0 on success, or error_code_t on failure

Definition at line 2861 of file libmc.c.

References agency_s::mc_platform, mc_platform_s::syncList, and syncListDelete().

Referenced by MC_SyncDelete_chdl().

7.35.26.3 EXPORTMC int MC_SyncInit (MCAgency_t *attr*, int *id*)

Initializes a new MobileC synchronization variable.

Parameters

attr a MobileC agency handle

id the requested sync variable id

Returns

new sync variable's id. May be different than the requested id.

Note

Each synchronization variable may be used as a mutex, condition variable, or semaphore. However, it should only be used as one type of synchronization variable per instance, or undefined behaviour may result.

See also

[MC_MutexLock\(\)](#), [MC_MutexUnlock\(\)](#), [MC_CondWait\(\)](#), [MC_CondSignal\(\)](#), [MC_CondBroadcast\(\)](#), [MC_SemaphorePost\(\)](#), [MC_SemaphoreWait\(\)](#)

Definition at line 2867 of file libmc.c.

References syncListNode_s::id, ListSearchCB(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, mc_platform_s::syncList, syncListAddNode(), syncListNode_CmpID(), and syncListNode_New().

Referenced by MC_SyncInit_chdl().

7.35.26.4 EXPORTMC int MC_TerminateAgent (MCAgent_t *agent*)

Halt a running agent.

Returns

0 on success, error_code_t on failure

Definition at line 2893 of file libmc.c.

References agent_s::agent_interp, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by ams_ManageAgentList(), MC_DeleteAgent(), and MC_TerminateAgent_chdl().

7.35.26.5 EXPORTMC int MC_TerminateAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Definition at line 2905 of file libmc.c.

References agent_s::agent_interp, MC_ERR_INVALID_ARGS, and agent_s::wg_code.

Referenced by MC_DeleteAgentWG(), and MC_TerminateAgentWG_chdl().

7.35.26.6 EXPORTMC int MC_WaitAgent (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever. Wait for an agent arrival event
This function blocks until an agent arrival signal is triggered, at which point it unblocks.

Definition at line 2934 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), ListRDWait(), and agency_s::mc_platform.

7.35.26.7 EXPORTMC MCAgent_t MC_WaitRetrieveAgent (MCAgency_t *attr*)

Wait and retrieve an agent.

Returns

a valid MobileC agent on success, or NULL on failure

Note

This function blocks until the arrival of an agent. The agent is retrieved after it is initialized, but before it is executed.

Definition at line 2952 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), ListSearch(), agency_s::mc_platform, MC_RECV_AGENT, and MC_WaitSignal().

7.35.26.8 EXPORTMC int MC_WaitSignal (MCAgency_t *attr*, int *signals*)

Wait for a MobileC signal.

Parameters

attr a MobileC agency handle

signals a flag of signals to wait for, of type 'enum MC_Signal_e'

Returns

0 on success, error_code_t on failure

Note

the parameter 'signals' may be something like 'MC_RECV_MESSAGE | MC_RECV_AGENT', etc.

7.35.27 Example

Definition at line 2972 of file libmc.c.

References COND_WAIT, mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_WaitRetrieveAgent().

7.36 /home/dko/Projects/mobilec/src/include/macros.h File Reference

```
#include <pthread.h>
#include <semaphore.h>
#include "config.h"
#include <errno.h>
```

Defines

- #define **GET_THREAD_MODE**(a, b) ((a & (1<<b)) / (1<<b))
- #define **SET_THREAD_ON**(a, b) a = (a | (1<<b))
- #define **SET_THREAD_OFF**(a, b) a = (a & (~(1<<b)))
- #define **STRUCT**(name, members)
- #define **SOCKET_ERROR**()
- #define **PTHREAD_STACK_SIZE** 131072
- #define **THREAD_CREATE**(thread_handle, function, arg)
- #define **THREAD_CANCEL**(thread_handle) pthread_cancel(thread_handle)
- #define **THREAD_JOIN**(thread_handle) pthread_join(thread_handle, NULL)
- #define **THREAD_DETACH**(thread_handle)
- #define **THREAD_EXIT**() pthread_exit(NULL)
- #define **MUTEX_T** pthread_mutex_t
- #define **MUTEX_INIT**(mutex) pthread_mutex_init(mutex, NULL)
- #define **MUTEX_DESTROY**(mutex) pthread_mutex_destroy(mutex)
- #define **MUTEX_LOCK**(mutex)
- #define **MUTEX_UNLOCK**(mutex) pthread_mutex_unlock(mutex)
- #define **MUTEX_NEW**(mutex)
- #define **COND_T** pthread_cond_t
- #define **COND_INIT**(cond) pthread_cond_init(cond, NULL)
- #define **COND_NEW**(cond)
- #define **COND_DESTROY**(cond) pthread_cond_destroy(cond)
- #define **COND_WAIT**(cond, mutex) pthread_cond_wait(cond, mutex)
- #define **COND_SLEEP**(cond, mutex, test)
- #define **COND_RESET**(cond, mutex) pthread_mutex_unlock(mutex);
- #define **COND_SLEEP_ACTION**(cond, mutex, action)
- #define **SIGNAL**(cond, mutex, action)
- #define **COND_BROADCAST**(cond) pthread_cond_broadcast(cond)
- #define **COND_SIGNAL**(cond) pthread_cond_signal(cond)
- #define **SEMAPHORE_T** sem_t
- #define **SEMAPHORE_INIT**(sem) sem_init(sem, 0, 0)
- #define **SEMAPHORE_DESTROY**(sem) sem_destroy(sem)
- #define **SEMAPHORE_WAIT**(sem) sem_wait(sem)
- #define **SEMAPHORE_POST**(sem) sem_post(sem)
- #define **RWLOCK_T** mc_rwlock_t
- #define **RWLOCK_INIT**(rwlock) mc_rwlock_init(rwlock)
- #define **RWLOCK_DESTROY**(rwlock) mc_rwlock_destroy(rwlock)
- #define **RWLOCK_RDLOCK**(rwlock) mc_rwlock_rdlock(rwlock)
- #define **RWLOCK_RDUNLOCK**(rwlock) mc_rwlock_rdunlock(rwlock)

- #define **RWLOCK_WRLock**(rwlock) mc_rwlock_wrlock(rwlock)
- #define **RWLOCK_WRUNLOCK**(rwlock) mc_rwlock_wrunlock(rwlock)
- #define **WAKE_QUEUE**(queue, action)
- #define **SLEEP_QUEUE**(queue)
- #define **SLEEP_RESET**(queue) pthread_mutex_unlock(queue->thread_mutex)
- #define **CHECK_NULL**(var, action)
- #define **WARN**(message)
- #define **CH_DATATYPE_SIZE**(type, size)
- #define **CH_DATATYPE_STRING**(type, string)
- #define **CH_DATATYPE_VALUE_STRING**(type, string, p)
- #define **CH_STRING_DATATYPE**(string, type)
- #define **CH_DATATYPE_STR_TO_VAL**(type, string, val)

7.36.1 Define Documentation

7.36.1.1 #define CH_DATATYPE_SIZE(type, size)

Value:

```
switch(type) {
    case CH_CHARTYPE:
        size = sizeof(char);
        break;
    case CH_INTTYPE:
        size = sizeof(int);
        break;
    case CH_UINTTYPE:
        size = sizeof(unsigned int);
        break;
    case CH_SHORTTYPE:
        size = sizeof(short);
        break;
    case CH USHORTTYPE:
        size = sizeof(unsigned short);
        break;
    case CH_FLOATTYPE:
        size = sizeof(float);
        break;
    case CH_DOUBLETYPE:
        size = sizeof(double);
        break;
    default:
        fprintf(stderr, "Unknown data type: %d at %s:%d",
                type, __FILE__, __LINE__);
        size=0;
}
```

Definition at line 501 of file macros.h.

Referenced by agent_AddPersistentVariable(), agent_xml_compose__create_row_nodes(), agent_xml_parse_data(), agent_xml_parse_fill_row_data(), agent_xml_parse_row(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), MC_AgentReturnDataSize(), and MC_GetAgentReturnData().

7.36.1.2 #define CH_DATATYPE_STR_TO_VAL(type, string, val)

Value:

```

switch (type) { \
    case CH_INTTYPE: \
        *(int*)val = atoi(string); \
    break; \
    case CH_UINTTYPE: \
        *(unsigned int*)val = atoi(string); \
    break; \
    case CH_SHORTTYPE: \
        *(short*)val = (short)atoi(string); /*FIXME*/ \
    break; \
    case CH USHORTTYPE: \
        *(unsigned short*)val = (unsigned short)atoi(string); /*F \
    IXME*/ \
    break; \
    case CH_FLOATTYPE: \
        *(float*)val = strtod(string, NULL); \
    break; \
    case CH_DOUBLETYPE: \
        *(double*)val = strtod(string, NULL); \
    break; \
    default: \
        fprintf(stderr, \
            "Unsupported data type: %d %s:%d\n", \
            type, __FILE__, __LINE__ ); \
}

```

Definition at line 615 of file macros.h.

Referenced by agent_xml_parse__data().

7.36.1.3 #define CH_DATATYPE_STRING(type, string)

Value:

```

switch(type) {
    case CH_CHARTYPE: \
        strcpy(string, "char"); \
    break; \
    case CH_INTTYPE: \
        strcpy(string, "int"); \
    break; \
    case CH_UINTTYPE: \
        strcpy(string, "unsigned int"); \
    break; \
    case CH_SHORTTYPE: \
        strcpy(string, "short"); \
    break; \
    case CH USHORTTYPE: \
        strcpy(string, "unsigned short"); \
    break; \
    case CH_FLOATTYPE: \
        strcpy(string, "float"); \
    break; \
    case CH_DOUBLETYPE: \
        strcpy(string, "double"); \
    break; \
    default: \
        fprintf(stderr, \
            "Unsupported data type: %d %s:%d\n", \
            type, __FILE__, __LINE__ ); \
}

```

Definition at line 532 of file macros.h.

Referenced by agent_xml_compose__data().

7.36.1.4 #define CH_DATATYPE_VALUE_STRING(type, string, p)

Value:

```
switch(type) {
    case CH_CHARTYPE:
        sprintf(string, "%c", *((char*)p));
        break;
    case CH_INNTYPE:
        sprintf(string, "%d", *((int*)p));
        break;
    case CH_UINTTYPE:
        sprintf(string, "%d", *((unsigned int*)p));
        break;
    case CH_SHORTTYPE:
        sprintf(string, "%d", *((short*)p));
        break;
    case CH_USHORTTYPE:
        sprintf(string, "%d", *((unsigned short*)p));
        break;
    case CH_FLOATTYPE:
        sprintf(string, "%f", *((float*)p));
        break;
    case CH_DOUBLETYPE:
        sprintf(string, "%f", *((double*)p));
        break;
    default:
        fprintf(stderr,
            "Unsupported data type: %d %s:%d\n",
            type, __FILE__, __LINE__);
}
```

Definition at line 564 of file macros.h.

Referenced by agent_xml_compose__create_row_nodes(), and agent_xml_compose__data().

7.36.1.5 #define CH_STRING_DATATYPE(string, type)

Value:

```
if (!strcmp(string, "int")) {
    type = CH_INNTYPE;
} else if (!strcmp(string, "float")) {
    type = CH_FLOATTYPE;
} else if (!strcmp(string, "double")) {
    type = CH_DOUBLETYPE;
} else if (!strcmp(string, "unsigned int")) {
    type = CH_UINTTYPE;
} else if (!strcmp(string, "short")) {
    type = CH_SHORTTYPE;
} else if (!strcmp(string, "unsigned short")) {
    type = CH_USHORTTYPE;
} else if (!strcmp(string, "char")) {
    type = CH_CHARTYPE;
} else {
    fprintf(stderr,
        "Unsupported data type: %d %s:%d\n",
        type, __FILE__, __LINE__);
}
```

Definition at line 593 of file macros.h.

Referenced by agent_xml_parse__data().

7.36.1.6 #define CHECK_NULL(var, action)

Value:

```
if ( var == NULL ) {
    fprintf(stderr, "Pointer var is null: expected otherwise.\n");
    fprintf(stderr, "Error occured at %s:%d", __FILE__, __LINE__);
    action;
}
```

Definition at line 484 of file macros.h.

Referenced by agent_AddPersistentVariable(), agent_datastate_New(), agent_xml_parse_file(), agent_xml_parse_home(), agent_xml_parse_name(), agent_xml_parse_owner(), agent_xml_parse_sender(), agent_xml_parse_task(), ams_Initialize(), barrier_node_Initialize(), df_request_list_node_New(), df_request_search_New(), fipa_agent_identifier_Parse(), fipa_word_Parse(), http_ParseExpression(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), MC_AclSend_chdl(), MC_AddAgent_chdl(), MC_Barrier_chdl(), MC_BarrierDelete_chdl(), MC_BarrierInit_chdl(), MC_CondBroadcast_chdl(), MC_CondReset_chdl(), MC_CondSignal_chdl(), MC_CondWait_chdl(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_DeregisterService_chdl(), MC_End_chdl(), MC_FindAgentByID_chdl(), MC_FindAgentByName_chdl(), MC_HaltAgency_chdl(), MC_MutexLock_chdl(), MC_MutexUnlock_chdl(), mc_platform_Initialize(), MC_RegisterService(), MC_RegisterService_chdl(), MC_ResumeAgency_chdl(), MC_RetrieveAgent_chdl(), mc_rwlock_init(), MC_SearchForService(), MC_SearchForService_chdl(), MC_SemaphorePost_chdl(), MC_SemaphoreWait_chdl(), MC_SendAgentMigrationMessage_chdl(), MC_SendSteerCommand_chdl(), MC_SetDefaultAgentStatus_chdl(), MC_SyncDelete_chdl(), MC_SyncInit_chdl(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), message_queue_SendOutgoing(), message_send_Thread(), message_xml_parse_message(), mtp_http_InitializeFromConnection(), mtp_http_New(), syncListNodeInit(), syncListNodeNew(), xml_get_cdata(), xml_get_text(), and xml_new_cdata().

7.36.1.7 #define COND_BROADCAST(cond) pthread_cond_broadcast(cond)

Definition at line 230 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_Initialize(), agent_NewBinary(), agent_RunChScript(), ams_ManageAgentList(), ams_Thread(), df_Thread(), handler_QUIT(), listen_Thread(), MC_Barrier(), MC_CondBroadcast(), MC_End(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), MC_SendSteerCommand(), and MC_SetAgentStatus().

7.36.1.8 #define COND_DESTROY(cond) pthread_cond_destroy(cond)

Definition at line 206 of file macros.h.

Referenced by acc_Destroy(), agent_Destroy(), agent_Initialize(), ams_Destroy(), barrier_node_Destroy(), df_Destroy(), df_request_list_node_Destroy(), df_request_search_Destroy(), mc_platform_Destroy(), mc_rwlock_destroy(), rwlock_Destroy(), and syncListNodeDestroy().

7.36.1.9 #define COND_INIT(cond) pthread_cond_init(cond, NULL)

Definition at line 198 of file macros.h.

Referenced by acc_Initialize(), agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), ams_Initialize(), barrier_node_Initialize(), df_Initialize(), df_request_list_node_New(), df_request_search_-

New(), mc_platform_Initialize(), mc_rwlock_init(), rwlock_New(), syncListNodeInit(), and syncListNodeNew().

7.36.1.10 #define COND_NEW(cond)

Value:

```
cond = (pthread_cond_t*)malloc(sizeof(pthread_cond_t)); \
if (cond == NULL) \
    fprintf(stderr, "Memory Error. %s:%d\n", __FILE__, __LINE__); \
```

Definition at line 201 of file macros.h.

Referenced by agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), and rwlock_New().

7.36.1.11 #define COND_RESET(cond, mutex) pthread_mutex_unlock(mutex);

Definition at line 218 of file macros.h.

7.36.1.12 #define COND_SIGNAL(cond) pthread_cond_signal(cond)

Definition at line 232 of file macros.h.

Referenced by agent_RunChScriptThread(), MC_AddAgent(), MC_CondSignal(), MC_End(), MC_ResetSignal(), mc_rwlock_rdunlock(), mc_rwlock_wrunlock(), MC_SetAgentStatus(), rwlock_rdunlock(), and rwlock_wrunlock().

7.36.1.13 #define COND_SLEEP(cond, mutex, test)

Value:

```
if (pthread_mutex_lock( mutex )) \
printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
if (!test) { \
    pthread_cond_wait( cond, mutex ); \
}
```

Definition at line 212 of file macros.h.

7.36.1.14 #define COND_SLEEP_ACTION(cond, mutex, action)

Value:

```
if (pthread_mutex_lock( mutex )) \
printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
action; \
pthread_cond_wait( cond, mutex );
```

Definition at line 220 of file macros.h.

Referenced by MC_SearchForService().

7.36.1.15 #define COND_T pthread_cond_t

Definition at line 196 of file macros.h.

Referenced by acc_Initialize(), ams_Initialize(), barrier_node_Initialize(), df_Initialize(), df_request_list_node_New(), df_request_search_New(), mc_platform_Initialize(), mc_rwlock_init(), syncListNodeInit(), and syncListNodeNew().

7.36.1.16 #define COND_WAIT(cond, mutex) pthread_cond_wait(cond, mutex)

Definition at line 209 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), ams_Thread(), ListRDtoWR(), ListRDWait(), ListWRWait(), MC_Barrier(), MC_CondWait(), MC_MainLoop(), mc_platform_Initialize(), mc_rwlock_rdlock(), mc_rwlock_wrlock(), MC_SteerControl(), MC_WaitSignal(), message_Send(), rwlock_rdwait(), and rwlock_wrlock().

7.36.1.17 #define GET_THREAD_MODE(a, b) ((a & (1<<b)) / (1<<b))

Definition at line 112 of file macros.h.

Referenced by MC_End(), and mc_platform_Initialize().

7.36.1.18 #define MUTEX_DESTROY(mutex) pthread_mutex_destroy(mutex)

Definition at line 179 of file macros.h.

Referenced by acc_Destroy(), agent_Destroy(), agent_Initialize(), ams_Destroy(), barrier_node_Destroy(), df_Destroy(), df_request_list_node_Destroy(), df_request_search_Destroy(), mc_platform_Destroy(), mc_rwlock_destroy(), rwlock_Destroy(), and syncListNodeDestroy().

7.36.1.19 #define MUTEX_INIT(mutex) pthread_mutex_init(mutex, NULL)

Definition at line 176 of file macros.h.

Referenced by acc_Initialize(), agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), ams_Initialize(), barrier_node_Initialize(), df_Initialize(), df_request_list_node_New(), df_request_search_New(), mc_platform_Initialize(), MC_RegisterService(), mc_rwlock_init(), rwlock_New(), syncListNodeInit(), and syncListNodeNew().

7.36.1.20 #define MUTEX_LOCK(mutex)

Value:

```
if (pthread_mutex_lock( mutex )) \
fprintf(stderr, "pthread lock error: %s:%d\n", __FILE__, __LINE__)
```

Definition at line 182 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_CmpID(), agent_CmpName(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_Print(), agent_RunChScript(), agent_RunChScriptThread(), ams_ManageAgentList(), ams_Thread(), barrier_node_CmpID(), df_Destroy(), df_node_Destroy(), df_SearchForService(), df_Thread(), handler_QUIT(), interpreter_variable_data_Initialize(), listen_Thread(), ListRDtoWR(), ListRDWait(), MC_AddAgent(),

MC_Barrier(), MC_CallAgentFunc(), MC_CallAgentFuncArg(), MC_CallAgentFuncV(), MC_CallAgentFuncVar(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_End(), MC_GetAgentName(), MC_GetAgentStatus(), MC_HaltAgency(), MC_MainLoop(), MC_MutexLock(), mc_platform_Initialize(), MC_PrintAgentCode(), MC_ResetSignal(), MC_ResumeAgency(), MC_RetrieveAgent(), MC_RetrieveAgentCode(), mc_rwlock_rdlock(), mc_rwlock_runlock(), mc_rwlock_wrlock(), mc_rwlock_wrunlock(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), MC_SendSteerCommand(), MC_SetAgentStatus(), MC_Steer(), MC_SteerControl(), MC_TerminateAgent(), MC_WaitSignal(), message_Send(), request_handler_DEREGISTER(), rwlock_rdlock(), rwlock_runlock(), rwlock_rdwait(), and rwlock_wrlock().

7.36.1.21 #define MUTEX_NEW(mutex)

Value:

```
mutex = (pthread_mutex_t*)malloc(sizeof(pthread_mutex_t)); \
if (mutex == NULL) \
    fprintf(stderr, "Memory Error. %s:%d\n", __FILE__, __LINE__); \
```

Definition at line 187 of file macros.h.

Referenced by agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), and rwlock_New().

7.36.1.22 #define MUTEX_T pthread_mutex_t

Definition at line 174 of file macros.h.

Referenced by acc_Initialize(), agent_Copy(), agent_Initialize(), agent_NewBinary(), ams_Initialize(), barrier_node_Initialize(), df_Initialize(), df_request_list_node_New(), df_request_search_New(), mc_platform_Initialize(), MC_RegisterService(), mc_rwlock_init(), syncListNodeInit(), and syncListNodeNew().

7.36.1.23 #define MUTEX_UNLOCK(mutex) pthread_mutex_unlock(mutex)

Definition at line 185 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_CmpID(), agent_CmpName(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_Print(), agent_RunChScript(), agent_RunChScriptThread(), ams_ManageAgentList(), ams_Thread(), barrier_node_CmpID(), df_SearchForService(), df_Thread(), handler_QUIT(), interpreter_variable_data_Initialize(), listen_Thread(), ListRDWait(), ListWRtoRD(), MC_AddAgent(), MC_Barrier(), MC_CallAgentFunc(), MC_CallAgentFuncArg(), MC_CallAgentFuncV(), MC_CallAgentFuncVar(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_End(), MC_GetAgentName(), MC_GetAgentStatus(), MC_HaltAgency(), MC_MainLoop(), MC_MutexUnlock(), mc_platform_Initialize(), MC_PrintAgentCode(), MC_ResetSignal(), MC_ResumeAgency(), MC_RetrieveAgent(), MC_RetrieveAgentCode(), mc_rwlock_rdlock(), mc_rwlock_runlock(), mc_rwlock_wrlock(), mc_rwlock_wrunlock(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), MC_SendSteerCommand(), MC_SetAgentStatus(), MC_Steer(), MC_SteerControl(), MC_TerminateAgent(), MC_WaitSignal(), message_Send(), request_handler_DEREGISTER(), rwlock_rdlock(), rwlock_runlock(), rwlock_rdwait(), and rwlock_wrunlock().

7.36.1.24 #define PTHREAD_STACK_SIZE 131072

Definition at line 139 of file macros.h.

7.36.1.25 #define RWLOCK_DESTROY(rwlock) mc_rwlock_destroy(rwlock)

Definition at line 274 of file macros.h.

7.36.1.26 #define RWLOCK_INIT(rwlock) mc_rwlock_init(rwlock)

Definition at line 266 of file macros.h.

7.36.1.27 #define RWLOCK_RDLOCK(rwlock) mc_rwlock_rdlock(rwlock)

Definition at line 292 of file macros.h.

7.36.1.28 #define RWLOCK_RDUNLOCK(rwlock) mc_rwlock_rdunlock(rwlock)

Definition at line 294 of file macros.h.

7.36.1.29 #define RWLOCK_T mc_rwlock_t

Definition at line 259 of file macros.h.

7.36.1.30 #define RWLOCK_WRLOCK(rwlock) mc_rwlock_wrlock(rwlock)

Definition at line 296 of file macros.h.

7.36.1.31 #define RWLOCK_WRUNLOCK(rwlock) mc_rwlock_wrunlock(rwlock)

Definition at line 298 of file macros.h.

7.36.1.32 #define SEMAPHORE_DESTROY(sem) sem_destroy(sem)

Definition at line 244 of file macros.h.

Referenced by syncListNodeDestroy().

7.36.1.33 #define SEMAPHORE_INIT(sem) sem_init(sem, 0, 0)

Definition at line 241 of file macros.h.

Referenced by syncListNodeInit(), and syncListNodeNew().

7.36.1.34 #define SEMAPHORE_POST(sem) sem_post(sem)

Definition at line 249 of file macros.h.

Referenced by MC_SemaphorePost().

7.36.1.35 #define SEMAPHORE_T sem_t

Definition at line 239 of file macros.h.

Referenced by syncListNodeInit(), and syncListNodeNew().

7.36.1.36 #define SEMAPHORE_WAIT(sem) sem_wait(sem)

Definition at line 247 of file macros.h.

Referenced by MC_SemaphoreWait().

7.36.1.37 #define SET_THREAD_OFF(a, b) a = (a & (~(1<<b)))

Definition at line 116 of file macros.h.

Referenced by MC_SetThreadOff(), and MC_SetThreadsAllOff().

7.36.1.38 #define SET_THREAD_ON(a, b) a = (a | (1<<b))

Definition at line 115 of file macros.h.

Referenced by MC_SetThreadOn(), and MC_SetThreadsAllOn().

7.36.1.39 #define SIGNAL(cond, mutex, action)

Value:

```
pthread_mutex_lock( mutex ); \
action; \
pthread_cond_signal( cond ); \
pthread_mutex_unlock( mutex )
```

Definition at line 225 of file macros.h.

Referenced by agent_RunChScriptThread(), and request_handler_SEARCH().

7.36.1.40 #define SLEEP_QUEUE(queue)

Value:

```
if (pthread_mutex_lock( queue->thread_mutex )) \
printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
pthread_cond_wait( queue->touched_signal, queue->thread_mutex ) \

```

Definition at line 312 of file macros.h.

7.36.1.41 #define SLEEP_RESET(queue) pthread_mutex_unlock(queue->thread_mutex)

Definition at line 316 of file macros.h.

7.36.1.42 #define SOCKET_ERROR()**Value:**

```
printf("Socket error. %s:%d\nerrno:%d", __FILE__, __LINE__, errno); \
sleep(500)
```

Definition at line 132 of file macros.h.

Referenced by listen_Thread(), mc_platform_Destroy(), message_InitializeFromConnection(), message_send_Thread(), mtp_http_InitializeFromConnection(), net_bind(), and net_connect().

7.36.1.43 #define STRUCT(name, members)**Value:**

```
typedef struct name##_s { \
    members \
} name##_t; \
typedef name##_t* name##_p;
```

Definition at line 120 of file macros.h.

7.36.1.44 #define THREAD_CANCEL(thread_handle) pthread_cancel(thread_handle)

Definition at line 155 of file macros.h.

Referenced by MC_End().

7.36.1.45 #define THREAD_CREATE(thread_handle, function, arg)**Value:**

```
while(pthread_create( \
    thread_handle, \
    &attr, \
    function, \
    (void*) arg \
) < 0) { \
    printf("pthread_create failed. Trying again...\n"); \
}
```

Definition at line 145 of file macros.h.

Referenced by acc_Start(), acc_Thread(), agent_RunChScript(), ams_Start(), cmd_prompt_Start(), df_Start(), MC_AddStationaryAgent(), and message_Send().

7.36.1.46 #define THREAD_DETACH(thread_handle)**Value:**

```
if(pthread_detach(thread_handle) < 0) { \
    printf("pthread_detach failed. %s:%d\n", __FILE__, __LINE__); \
}
```

Definition at line 161 of file macros.h.

Referenced by acc_Thread(), and message_Send().

7.36.1.47 #define THREAD_EXIT() pthread_exit(NULL)

Definition at line 166 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), ams_Thread(), df_Thread(), and listen_Thread().

7.36.1.48 #define THREAD_JOIN(thread_handle) pthread_join(thread_handle, NULL)

Definition at line 158 of file macros.h.

Referenced by MC_End().

7.36.1.49 #define WAKE_QUEUE(queue, action)**Value:**

```
if (pthread_mutex_trylock( queue->lock ) == 0) {      \
    action;                                              \
    pthread_cond_signal( queue->cond );                  \
    pthread_mutex_unlock( queue->lock );                 \
}
```

Definition at line 306 of file macros.h.

7.36.1.50 #define WARN(message)**Value:**

```
fprintf(stderr, "\nWARNING: "); \
fprintf(stderr, message ); \
fprintf(stderr, " %s:%d\n", __FILE__, __LINE__ )
```

Definition at line 491 of file macros.h.

Referenced by agent_RunChScriptThread(), and message_InitializeFromAgent().

7.37 /home/dko/Projects/mobilec/src/include/mc_error.h File Reference

Typedefs

- `typedef enum error_code_e error_code_t`

Enumerations

- `enum error_code_e {
 MC_SUCCESS = 0, MC_ERR, MC_ERR_CONNECT, MC_ERR_PARSE,
 MC_ERR_EMPTY, MC_ERR_INVALID, MC_ERR_INVALID_ARGS, MC_ERR_NOT_FOUND,
 MC_ERR_MEMORY, MC_ERR_SEND, MC_WARN_DUPLICATE, MC_SUCCESS = 0,
 ERR, MC_ERR_CONNECT, MC_ERR_PARSE, MC_ERR_EMPTY,
 MC_ERR_INVALID, MC_ERR_INVALID_ARGS, MC_ERR_NOT_FOUND, MC_ERR_MEMORY,
 MC_ERR_SEND, MC_ERR_OPTIONS_UNINITIALIZED, MC_WARN_DUPLICATE } }`

7.37.1 Typedef Documentation

7.37.1.1 `typedef enum error_code_e error_code_t`

7.37.2 Enumeration Type Documentation

7.37.2.1 `enum error_code_e`

Enumerator:

MC_SUCCESS
MC_ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY
MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND
MC_ERR_MEMORY
MC_ERR_SEND
MC_WARN_DUPLICATE
MC_SUCCESS
ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY

MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND
MC_ERR_MEMORY
MC_ERR_SEND
MC_ERR_OPTIONS_UNINITIALIZED
MC_WARN_DUPLICATE

Definition at line 41 of file mc_error.h.

7.38 /home/dko/Projects/mobilec/src/include/mc_platform.h File Reference

```
#include "acc.h"
#include "ams.h"
#include "barrier.h"
#include "cmd_prompt.h"
#include "config.h"
#include "connection.h"
#include "df.h"
#include "libmc.h"
#include "../mc_sync/sync_list.h"
#include "../include/macros.h"
#include "../mc_list/list.h"
#include "../include/mc_rwlock.h"
#include "asm_node.h"
```

Data Structures

- struct [mc_platform_s](#)

Typedefs

- typedef struct [mc_platform_s](#) [mc_platform_t](#)
- typedef [mc_platform_t](#) * [mc_platform_p](#)

Functions

- [mc_platform_p mc_platform_Initialize \(MCAgency_t agency, ChOptions_t *ch_options\)](#)
- [int mc_platform_Destroy \(mc_platform_p mc_platform\)](#)
- [ChInterp_t * interpreter_queue_CreateRetrieve \(list_t *queue, ChOptions_t *interp_options\)](#)
- [list_t * mc_platform_GetQueue \(mc_platform_p platform, enum MC_QueueIndex_e index\)](#)

7.38.1 Typedef Documentation

7.38.1.1 [typedef mc_platform_t* mc_platform_p](#)

Definition at line 126 of file mc_platform.h.

7.38.1.2 [typedef struct mc_platform_s mc_platform_t](#)

Definition at line 125 of file mc_platform.h.

7.38.2 Function Documentation

7.38.2.1 ChInterp_t* interpreter_queue_CreateRetrieve (list_t * queue, ChOptions_t * interp_options)

Definition at line 346 of file mc_platform.c.

References agent_ChScriptInitVar(), ListPop(), ListWRLock(), and ListWRUnlock().

Referenced by agent_RunChScriptThread().

7.38.2.2 int mc_platform_Destroy (mc_platform_p mc_platform)

Definition at line 250 of file mc_platform.c.

References mc_platform_s::acc, acc_Destroy(), agent_Destroy(), mc_platform_s::agent_queue, mc_platform_s::ams, ams_Destroy(), barrier_node_Destroy(), mc_platform_s::barrier_queue, mc_platform_s::cmd_prompt, cmd_prompt_Destroy(), COND_DESTROY, connection_Destroy(), mc_platform_s::connection_queue, mc_platform_s::df, df_Destroy(), mc_platform_s::giant_cond, mc_platform_s::giant_lock, mc_platform_s::hostname, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, ListClearCB(), ListPop(), ListTerminate(), ListWRLock(), ListWRUnlock(), mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, MC_SUCCESS, mc_platform_s::MC_sync_cond, mc_platform_s::MC_sync_lock, message_Destroy(), mc_platform_s::message_queue, MUTEX_DESTROY, mc_platform_s::quit_cond, mc_platform_s::quit_lock, SOCKET_ERROR, mc_platform_s::sockfd, mc_platform_s::syncList, and syncListNodeDestroy().

Referenced by MC_End().

7.38.2.3 list_t* mc_platform_GetQueue (mc_platform_p platform, enum MC_QueueIndex_e index)

Definition at line 366 of file mc_platform.c.

References mc_platform_s::agent_queue, mc_platform_s::barrier_queue, mc_platform_s::connection_queue, MC_QUEUE_AGENT, MC_QUEUE_BARRIER, MC_QUEUE_CONNECTION, MC_QUEUE_MESSAGE, MC_QUEUE_SYNC, mc_platform_s::message_queue, and mc_platform_s::syncList.

Referenced by MC_QueueRDLock(), MC_QueueRDUnlock(), MC_QueueWRLock(), and MC_QueueWRUnlock().

7.38.2.4 mc_platform_p mc_platform_Initialize (MCAgency_t agency, ChOptions_t * ch_options)

Definition at line 54 of file mc_platform.c.

References mc_platform_s::acc, acc_Initialize(), acc_Start(), mc_platform_s::agency, agent_ChScriptInitVar(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, mc_platform_s::ams, ams_Initialize(), ams_Start(), mc_platform_s::barrier_queue, agency_s::bluetooth, mc_platform_s::bluetooth, CHECK_NULL, mc_platform_s::cmd_prompt, cmd_prompt_Initialize(), cmd_prompt_Start(), COND_INIT, COND_T, COND_WAIT, mc_platform_s::connection_queue, agency_s::default_agentstatus, mc_platform_s::default_agentstatus, DEFAULT_HOSTNAME_LENGTH, mc_platform_s::df, df_Initialize(), df_Start(), mc_platform_s::err, GET_THREAD_MODE, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, mc_platform_s::hostname, agency_s::initInterps, mc_platform_s::initInterps, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, agency_s::last_error, ListAdd(), ListInitialize(), ListWRLock(), ListWRUnlock(), MC_ERR_MEMORY,

MC_NO_SIGNAL, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, mc_platform_s::MC_sync_cond, mc_platform_s::MC_sync_lock, MC_THREAD_ACC, MC_THREAD_ALL, MC_THREAD_AMS, MC_THREAD_CP, MC_THREAD_DF, mc_platform_s::message_queue, MUTEX_INIT, MUTEX_LOCK, MUTEX_T, MUTEX_UNLOCK, mc_platform_s::port, agency_s::portno, mc_platform_s::quit, mc_platform_s::quit_cond, mc_platform_s::quit_lock, agency_s::stack_size, mc_platform_s::stack_size, mc_platform_s::syncList, and agency_s::threads.

Referenced by MC_Initialize().

7.39 /home/dko/Projects/mobilec/src/include/mc_rwlock.h File Reference

```
#include "macros.h"
```

Data Structures

- struct [mc_rwlock_s](#)

TypeDefs

- typedef struct [mc_rwlock_s](#) [mc_rwlock_t](#)
- typedef [mc_rwlock_t](#) * [mc_rwlock_p](#)

Functions

- int [mc_rwlock_init](#) ([mc_rwlock_p](#) *rwlock*)
- int [mc_rwlock_destroy](#) ([mc_rwlock_p](#) *rwlock*)
- int [mc_rwlock_rdlock](#) ([mc_rwlock_p](#) *rwlock*)
- int [mc_rwlock_rdunlock](#) ([mc_rwlock_p](#) *rwlock*)
- int [mc_rwlock_wrlock](#) ([mc_rwlock_p](#) *rwlock*)
- int [mc_rwlock_wrunlock](#) ([mc_rwlock_p](#) *rwlock*)

7.39.1 Typedef Documentation

7.39.1.1 [typedef mc_rwlock_t* mc_rwlock_p](#)

Definition at line 46 of file [mc_rwlock.h](#).

7.39.1.2 [typedef struct mc_rwlock_s mc_rwlock_t](#)

7.39.2 Function Documentation

7.39.2.1 [int mc_rwlock_destroy \(mc_rwlock_p rwlock\)](#)

Definition at line 66 of file [mc_rwlock.c](#).

References [mc_rwlock_s::cond](#), [COND_DESTROY](#), [mc_rwlock_s::lock](#), and [MUTEX_DESTROY](#).

7.39.2.2 [int mc_rwlock_init \(mc_rwlock_p rwlock\)](#)

Definition at line 46 of file [mc_rwlock.c](#).

References [CHECK_NULL](#), [mc_rwlock_s::cond](#), [COND_INIT](#), [COND_T](#), [mc_rwlock_s::lock](#), [MC_ERR_MEMORY](#), [MUTEX_INIT](#), [MUTEX_T](#), [mc_rwlock_s::num_readers](#), [mc_rwlock_s::write_flag](#), and [mc_rwlock_s::write_request](#).

7.39.2.3 int mc_rwlock_rdlock (mc_rwlock_p *rwlock*)

Definition at line 79 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_WAIT, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

7.39.2.4 int mc_rwlock_rdunlock (mc_rwlock_p *rwlock*)

Definition at line 94 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_SIGNAL, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and mc_rwlock_s::num_readers.

7.39.2.5 int mc_rwlock_wrlock (mc_rwlock_p *rwlock*)

Definition at line 107 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_WAIT, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

7.39.2.6 int mc_rwlock_wrunlock (mc_rwlock_p *rwlock*)

Definition at line 126 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_SIGNAL, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and mc_rwlock_s::write_flag.

7.40 /home/dko/Projects/mobilec/src/include/message.h File Reference

```
#include "mtp_http.h"
#include <mxml.h>
#include <netinet/in.h>
#include "config.h"
#include "security/interface.h"
```

Data Structures

- struct [message_s](#)
- struct [message_send_arg_s](#)

Typedefs

- typedef enum [message_type_e](#) [message_type_t](#)
- typedef struct [message_s](#) [message_t](#)
- typedef [message_t](#) * [message_p](#)
- typedef struct [message_send_arg_s](#) [message_send_arg_t](#)

Enumerations

- enum [message_type_e](#) {
 [RELAY](#), [REQUEST](#), [SUBSCRIBE](#), [CANCEL](#),
 [N_UNDRSTD](#), [MOBILE_AGENT](#), [QUER_IF](#), [QUER_REF](#),
 [AGENT_UPDATE](#), [RETURN_MSG](#), [FIPA_ACL](#), [ENCRYPTED_DATA](#),
 [ENCRYPTION_INITIALIZE](#), [REQUEST_ENCRYPTION_INITIALIZE](#), [NUM_MESSAGE_TYPE](#),
 [MSG_SEC](#) }

Functions

- [message_p message_New \(void\)](#)
- [message_p message_Copy \(message_p src\)](#)
- int [message_InitializeFromAgent \(struct mc_platform_s *mc_platform, message_p message, struct agent_s *agent\)](#)
- int [message_InitializeFromConnection \(struct mc_platform_s *mc_platform, message_p message, struct connection_s *connection\)](#)
- int [message_InitializeFromString \(struct mc_platform_s *mc_platform, message_p message, const char *string, const char *destination_host, int destination_port, const char *target\)](#)
- int [message_Destroy \(message_p message\)](#)
- int [auth_rece_send_msg \(int sockfd, char *hostname, char *message, char *privkey, char *known_host_filename\)](#)
- int [message_Send \(struct mc_platform_s *mc_platform, message_p message, char *privatekey\)](#)
- void * [message_send_Thread \(void *arg\)](#)
- int [http_to_hostport \(const char *http_str, char **host, int *port, char **target\)](#)
- int [message_Print \(message_t *message\)](#)

7.40.1 Typedef Documentation

7.40.1.1 `typedef message_t* message_p`

Definition at line 115 of file message.h.

7.40.1.2 `typedef struct message_send_arg_s message_send_arg_t`

7.40.1.3 `typedef struct message_s message_t`

7.40.1.4 `typedef enum message_type_e message_type_t`

7.40.2 Enumeration Type Documentation

7.40.2.1 `enum message_type_e`

Enumerator:

RELAY

REQUEST

SUBSCRIBE

CANCEL

N_UNDRSTD

MOBILE_AGENT

QUER_IF

QUER_REF

AGENT_UPDATE

RETURN_MSG

FIPA_ACL

ENCRYPTED_DATA

ENCRYPTION_INITIALIZE

REQUEST_ENCRYPTION_INITIALIZE

NUM_MESSAGE_TYPE

MSG_SEC

Definition at line 52 of file message.h.

7.40.3 Function Documentation

7.40.3.1 `int auth_rece_send_msg (int sockfd, char * hostname, char * message, char * privkey, char * known_host_filename)`

Definition at line 458 of file message.c.

References aes_en_de(), initiate_migration_process(), read_known_host_file(), and send_AES_en_MA().

Referenced by message_send_Thread().

7.40.3.2 int http_to_hostport (const char * *http_str*, char ** *host*, int * *port*, char ** *target*)

Definition at line 300 of file message.c.

References MC_ERR_PARSE.

Referenced by MC_AclSend().

7.40.3.3 message_p message_Copy (message_p *src*)

Definition at line 99 of file message.c.

7.40.3.4 int message_Destroy (message_p *message*)

Definition at line 416 of file message.c.

References message_s::addr, message_s::agent_xml_flag, message_s::from_address, MC_SUCCESS, message_s::message_body, mxmDelete(), message_s::sending_agent_name, message_s::target, message_s::to_address, message_s::update_name, and message_s::xml_root.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), ams_ManageAgentList(), MC_LoadAgentFromFile(), mc_platform_Destroy(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and message_InitializeFromConnection().

7.40.3.5 int message_InitializeFromAgent (struct mc_platform_s * *mc_platform*, message_p *message*, struct agent_s * *agent*)

Referenced by ams_ManageAgentList().

7.40.3.6 int message_InitializeFromConnection (struct mc_platform_s * *mc_platform*, message_p *message*, struct connection_s * *connection*)**7.40.3.7 int message_InitializeFromString (struct mc_platform_s * *mc_platform*, message_p *message*, const char * *string*, const char * *destination_host*, int *destination_port*, const char * *target*)**

Referenced by MC_LoadAgentFromFile(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), and MC_SendAgentMigrationMessageFile().

7.40.3.8 message_p message_New (void)

Definition at line 74 of file message.c.

References message_s::addr, message_s::agent_xml_flag, CHECK_NULL, message_s::connect_id, message_s::from_address, message_s::http_type, message_s::isHTTP, message_s::message_body, message_s::message_id, message_s::message_type, message_s::sending_agent_name, message_s::target, message_s::to_address, message_s::update_name, message_s::update_num, message_s::xml_payload, and message_s::xml_root.

Referenced by acc_connection_Thread(), ams_ManageAgentList(), MC_LoadAgentFromFile(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and mtp_http_CreateMessage().

7.40.3.9 int message_Print (message_t * *message*)

Definition at line 956 of file message.c.

References message_s::connect_id, and message_s::message_id.

Referenced by handler_PRINTLIST_MESSAGE().

7.40.3.10 int message_Send (struct mc_platform_s * *mc_platform*, message_p *message*, char * *privatekey*)

Definition at line 580 of file message.c.

References mc_platform_s::acc, COND_WAIT, message_send_arg_s::mc_platform, message_send_arg_s::message, message_send_Thread(), MSG_THREADS, MUTEX_LOCK, MUTEX_UNLOCK, message_send_arg_s::privatekey, THREAD_CREATE, and THREAD_DETACH.

Referenced by acc_MessageHandlerThread(), MC_AclSend(), and message_queue_SendOutgoing().

7.40.3.11 void* message_send_Thread (void * *arg*)

Definition at line 667 of file message.c.

References mc_platform_s::agency, auth_rece_send_msg(), mc_platform_s::bluetooth, buf, CHECK_NULL, dynstring_Append(), dynstring_Destroy(), dynstring_New(), agency_s::known_host_filename, dynstring_s::message, message_s::message_body, MSG_THREAD_EXIT, mtp_http_ComposeMessage(), mtp_http_Destroy(), mtp_http_New(), mtp_http_Parse(), port, send, SOCKET_ERROR, SOCKET_INPUT_SIZE, strtok_r, and message_s::to_address.

Referenced by message_Send().

7.41 /home/dko/Projects/mobilec/src/include/mobilec.h File Reference

```
#include <dynstring.h>
#include <fipa_acl.h>
#include <fipa_comm.h>
```

7.42 /home/dko/Projects/mobilec/src/include/mtp_http.h File Reference

Data Structures

- struct `mtp_http_content_s`
- struct `mtp_http_s`

Defines

- #define `SOCKET_INPUT_SIZE` 4096

Typedefs

- typedef struct `mtp_http_content_s` `mtp_http_content_t`
- typedef struct `mtp_http_s` `mtp_http_t`
- typedef `mtp_http_t *` `mtp_http_p`

Enumerations

- enum `http_status_code_e` {
 `CONTINUE` = 100, `SWITCHING_PROTOCOLS`, `PROCESSING`, `OK` = 200,
 `CREATED`, `ACCEPTED`, `NON_AUTHORITATIVE_INFORMATION`, `NO_CONTENT`,
 `RESET_CONTENT`, `PARTIAL_CONTENT`, `MULTI_STATUS`, `BAD_REQUEST` = 400,
 `UNAUTHORIZED`, `PAYMENT_REQUIRED`, `FORBIDDEN`, `NOT_FOUND`,
 `METHOD_NOT_ALLOWED`, `NOT_ACCEPTABLE`, `PROXY_AUTHENTICATION_REQUIRED`,
 `REQUEST_TIMEOUT`,
 `CONFLICT`, `GONE`, `LENGTH_REQUIRED`, `PRECONDITION_FAILED`,
 `REQUEST_ENTITY_TOO_LARGE`, `REQUEST_URI_TOO_LONG`, `UNSUPPORTED_MEDIA_TYPE`,
 `REQUESTED_RANGE_NOT_SATISFIABLE`,
 `EXPECTATION_FAILED`, `UNPROCESSABLE_ENTITY`, `LOCKED`, `FAILED_DEPENDANCY`,
 `UNORDERED_COLLECTION`, `UPGRADE_REQUIRED`, `RETRY_WITH` }

 http return status codes

- enum `http_performative_e` {
 `HTTP_PERFORMATIVE_UNDEF` = -1, `HTTP_PERFORMATIVE_ZERO` = 0, `HTTP_HEAD`,
 `HTTP_GET`,
 `HTTP_POST`, `HTTP_PUT`, `HTTP_DELETE`, `HTTP_TRACE`,
 `HTTP_OPTIONS`, `HTTP_CONNECT`, `HTTP_RESPONSE`, `HTTP_NUM_PERFORMATIVES` }

 http 'verbs'

Functions

- const char * [http_GetExpression](#) (const char *string, char **expr)
Parse an html expression.
- int [http_ParseExpression](#) (const char *expression_string, char **name, char **value)
Parse an expression into its name and value.
- const char * [http_ParseRequest](#) (mtp_http_p http, const char *string)
- const char * [http_GetToken](#) (const char *string, char **token)
- int [mtp_http_Destroy](#) (mtp_http_p http)
- int [mtp_http_InitializeFromConnection](#) (struct mtp_http_s *http, struct connection_s *connection, char *privatekey)
- [mtp_http_p mtp_http_New](#) (void)
- const char * [mtp_http_ParseHeader](#) (struct mtp_http_s *http, const char *string)
- int [mtp_http_Parse](#) (struct mtp_http_s *http, const char *string)
- int [mtp_http_ComposeMessage](#) (struct message_s *message)
- struct message_s * [mtp_http_CreateMessage](#) (mtp_http_t *mtp_http, char *hostname, int port)

7.42.1 Define Documentation

7.42.1.1 #define SOCKET_INPUT_SIZE 4096

Definition at line 147 of file mtp_http.h.

Referenced by message_InitializeFromConnection(), message_send_Thread(), and mtp_http_InitializeFromConnection().

7.42.2 Typedef Documentation

7.42.2.1 typedef struct mtp_http_content_s mtp_http_content_t

7.42.2.2 typedef mtp_http_t* mtp_http_p

Definition at line 145 of file mtp_http.h.

7.42.2.3 typedef struct mtp_http_s mtp_http_t

7.42.3 Enumeration Type Documentation

7.42.3.1 enum http_performative_e

http 'verbs'

Enumerator:

HTTP_PERFORMATIVE_UNDEF
HTTP_PERFORMATIVE_ZERO
HTTP_HEAD
HTTP_GET

HTTP_POST
HTTP_PUT
HTTP_DELETE
HTTP_TRACE
HTTP_OPTIONS
HTTP_CONNECT
HTTP_RESPONSE
HTTP_NUM_PERFORMATIVES

Definition at line 90 of file mtp_http.h.

7.42.3.2 enum http_status_code_e

http return status codes

Enumerator:

CONTINUE
SWITCHING_PROTOCOLS
PROCESSING
OK
CREATED
ACCEPTED
NON_AUTHORITATIVE_INFORMATION
NO_CONTENT
RESET_CONTENT
PARTIAL_CONTENT
MULTI_STATUS
BAD_REQUEST
UNAUTHORIZED
PAYMENT_REQUIRED
FORBIDDEN
NOT_FOUND
METHOD_NOT_ALLOWED
NOT_ACCEPTABLE
PROXY_AUTHENTICATION_REQUIRED
REQUEST_TIMEOUT
CONFLICT
GONE
LENGTH_REQUIRED
PRECONDITION_FAILED
REQUEST_ENTITY_TOO_LARGE
REQUEST_URI_TOO_LONG

UNSUPPORTED_MEDIA_TYPE
REQUESTED_RANGE_NOT_SATISFIABLE
EXPECTATION_FAILED
UNPROCESSABLE_ENTITY
LOCKED
FAILED_DEPENDANCY
UNORDERED_COLLECTION
UPGRADE_REQUIRED
RETRY_WITH

Definition at line 45 of file mtp_http.h.

7.42.4 Function Documentation

7.42.4.1 const char* http_GetExpression (const char * *string*, char ** *expr*)

Parse an html expression.

Parameters

string (input) The html block of text: Will parse the first expression pointed to by 'string'.
expr (output) The allocated expression

Returns

A pointer to the next expression segment of the string block, or NULL.

Definition at line 349 of file mtp_http.c.

Referenced by mtp_http_Parse(), and mtp_http_ParseHeader().

7.42.4.2 const char* http_GetToken (const char * *string*, char ** *token*)

Definition at line 790 of file mtp_http.c.

References cur.

Referenced by http_ParseRequest().

7.42.4.3 int http_ParseExpression (const char * *expression_string*, char ** *name*, char ** *value*)

Parse an expression into its name and value.

Parameters

expression_string (input) The expression
name (output) An allocated name string or NULL
value (output) An allocated value string or NULL

Returns

error_code_t type

Note

an http expression is something like 'Date: Mon, 23 May 2005 22:38:34 GMT
' where 'Date' is the name and the remainder of the string is the value

Definition at line 408 of file mtp_http.c.

References CHECK_NULL, MC_ERR_PARSE, and MC_SUCCESS.

Referenced by mtp_http_Parse(), and mtp_http_ParseHeader().

7.42.4.4 const char* http_ParseRequest (mtp_http_p *http*, const char * *string*)

Definition at line 701 of file mtp_http.c.

References cur, HTTP_CONNECT, HTTP_DELETE, HTTP_GET, http_GetToken(), HTTP_HEAD, HTTP_OPTIONS, mtp_http_s::http_performative, HTTP_PERFORMATIVE_UNDEF, HTTP_POST, HTTP_PUT, HTTP_RESPONSE, HTTP_TRACE, mtp_http_s::response_code, mtp_http_s::response_string, and mtp_http_s::target.

Referenced by mtp_http_ParseHeader().

7.42.4.5 int mtp_http_ComposeMessage (struct message_s * *message*)

Referenced by message_send_Thread().

7.42.4.6 struct message_s* mtp_http_CreateMessage (mtp_http_t * *mtp_http*, char * *hostname*, int *port*) [read]

Definition at line 875 of file mtp_http.c.

References buf, mtp_http_s::content, mtp_http_content_s::content_type, mtp_http_content_s::data, dynstring_Append(), dynstring_Destroy(), dynstring_New(), mtp_http_s::host, message_s::isHTTP, dynstring_s::len, dynstring_s::message, message_s::message_body, message_New(), mtp_http_s::message_parts, PACKAGE_VERSION, mtp_http_s::target, and message_s::to_address.

Referenced by MC_AclSend().

7.42.4.7 int mtp_http_Destroy (mtp_http_p *http*)

Definition at line 54 of file mtp_http.c.

References mtp_http_s::accept_ranges, mtp_http_s::boundary, mtp_http_s::cache_control, mtp_http_s::connection, mtp_http_s::content, mtp_http_s::content_length, mtp_http_content_s::content_type, mtp_http_s::content_type, mtp_http_content_s::data, mtp_http_s::date, mtp_http_s::host, mtp_http_s::http_version, mtp_http_s::message_parts, mtp_http_s::mime_version, mtp_http_s::response_string, mtp_http_s::return_code, SAFE_FREE, mtp_http_s::server, mtp_http_s::target, and mtp_http_s::user_agent.

Referenced by acc_connection_Thread(), MC_AclSend(), message_send_Thread(), and mtp_http_InitializeFromConnection().

7.42.4.8 int mtp_http_InitializeFromConnection (struct mtp_http_s * *http*, struct connection_s * *connection*, char * *privatekey*)

Referenced by acc_connection_Thread().

7.42.4.9 mtp_http_p mtp_http_New (void)

Definition at line 89 of file mtp_http.c.

References CHECK_NULL, and mtp_http_s::content.

Referenced by acc_connection_Thread(), MC_AclSend(), message_send_Thread(), and mtp_http_InitializeFromConnection().

7.42.4.10 int mtp_http_Parse (struct mtp_http_s * *http*, const char * *string*)

Definition at line 551 of file mtp_http.c.

References mtp_http_s::boundary, mtp_http_s::content, mtp_http_s::content_length, mtp_http_content_s::content_type, mtp_http_s::content_type, mtp_http_content_s::data, http_GetExpression(), HTTP_HEAD, http_ParseExpression(), mtp_http_s::http_performative, HTTP_POST, HTTP_PUT, HTTP_RESPONSE, MC_SUCCESS, mtp_http_s::message_parts, mtp_http_ParseHeader(), and strdup.

Referenced by message_send_Thread(), and mtp_http_InitializeFromConnection().

7.42.4.11 const char* mtp_http_ParseHeader (struct mtp_http_s * *http*, const char * *string*)

Definition at line 467 of file mtp_http.c.

References mtp_http_s::header_length, http_GetExpression(), HTTP_PARSE_EXPR, http_ParseExpression(), http_ParseRequest(), MC_SUCCESS, and SAFE_FREE.

Referenced by mtp_http_InitializeFromConnection(), and mtp_http_Parse().

7.43 /home/dko/Projects/mobilec/src/include/rwlock.h File Reference

```
#include "macros.h"
```

Data Structures

- struct [rwlock_s](#)

Typedefs

- [typedef struct rwlock_s rwlock_t](#)

Functions

- [int rwlock_wrlock \(rwlock_t *rwlock\)](#)
- [int rwlock_wrunlock \(rwlock_t *rwlock\)](#)
- [int rwlock_rdlock \(rwlock_t *rwlock\)](#)
- [int rwlock_rdunlock \(rwlock_t *rwlock\)](#)
- [int rwlock_rdwait \(rwlock_t *rwlock\)](#)
- [rwlock_t * rwlock_New \(void\)](#)
- [int rwlock_Destroy \(rwlock_t *rwlock\)](#)

7.43.1 Typedef Documentation

7.43.1.1 [typedef struct rwlock_s rwlock_t](#)

7.43.2 Function Documentation

7.43.2.1 [int rwlock_Destroy \(rwlock_t * rwlock\)](#)

Definition at line 61 of file rwlock.c.

References [COND_DESTROY](#), [rwlock_s::lock](#), [MUTEX_DESTROY](#), [rwlock_s::reader_cond](#), and [rwlock_s::writer_cond](#).

Referenced by [ListTerminate\(\)](#).

7.43.2.2 [rwlock_t* rwlock_New \(void\)](#)

Definition at line 48 of file rwlock.c.

References [COND_INIT](#), [COND_NEW](#), [rwlock_s::lock](#), [MUTEX_INIT](#), [MUTEX_NEW](#), [rwlock_s::reader_cond](#), [rwlock_s::readers](#), and [rwlock_s::writer_cond](#).

Referenced by [ListInitialize\(\)](#).

7.43.2.3 int rwlock_rdlock (rwlock_t * *rwlock*)

Definition at line 21 of file rwlock.c.

References rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and rwlock_s::readers.

Referenced by ListRDLock().

7.43.2.4 int rwlock_runlock (rwlock_t * *rwlock*)

Definition at line 29 of file rwlock.c.

References COND_SIGNAL, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::readers, and rwlock_s::writer_cond.

Referenced by ListRDUnlock().

7.43.2.5 int rwlock_rdwait (rwlock_t * *rwlock*)

Definition at line 38 of file rwlock.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::reader_cond, and rwlock_s::readers.

Referenced by ListWait().

7.43.2.6 int rwlock_wrlock (rwlock_t * *rwlock*)

Definition at line 5 of file rwlock.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, rwlock_s::readers, and rwlock_s::writer_cond.

Referenced by ListWRLock().

7.43.2.7 int rwlock_wrunlock (rwlock_t * *rwlock*)

Definition at line 14 of file rwlock.c.

References COND_SIGNAL, rwlock_s::lock, MUTEX_UNLOCK, and rwlock_s::reader_cond.

Referenced by ListWRUnlock().

7.44 /home/dko/Projects/mobilec/src/include/xml_compose.h File Reference

```
#include "agent.h"
#include "agent_file_data.h"
```

Functions

- `mxml_node_t * agent_xml_compose (agent_p agent)`
- `mxml_node_t * agent_xml_compose_gaf_message (agent_p agent)`
- `mxml_node_t * agent_xml_compose_message (agent_p agent)`
- `mxml_node_t * agent_xml_compose_mobile_agent (agent_p agent)`
- `mxml_node_t * agent_xml_compose_agent_data (agent_p agent)`
- `mxml_node_t * agent_xml_compose_name (agent_p agent)`
- `mxml_node_t * agent_xml_compose_owner (agent_p agent)`
- `mxml_node_t * agent_xml_compose_home (agent_p agent)`
- `mxml_node_t * agent_xml_compose_wg_code (agent_p agent)`
- `mxml_node_t * agent_xml_compose_tasks (agent_p agent)`
- `mxml_node_t * agent_xml_compose_task (agent_p agent, int index)`
- `mxml_node_t * agent_xml_compose_data (agent_p agent, int index, interpreter_variable_data_t *interp_variable)`
- `mxml_node_t * agent_xml_compose_file (agent_p agent, int index, agent_file_data_t *agent_file_data)`
- `mxml_node_t * agent_xml_compose_agent_code (agent_p agent, int index)`
- `mxml_node_t * agent_xml_compose_row (interpreter_variable_data_t *interp_variable, int index)`
- `mxml_node_t * agent_xml_compose_create_row_nodes (void *data, int index, int *extent, ChType_t type, int dim, int extent_index)`

7.44.1 Function Documentation

7.44.1.1 `mxml_node_t* agent_xml_compose (agent_p agent)`

Definition at line 46 of file xml_compose.c.

References `agent_xml_compose_gaf_message()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmAdd()`, and `mxmLoadString()`.

Referenced by `message_InitializeFromAgent()`.

7.44.1.2 `mxml_node_t* agent_xml_compose_agent_code (agent_p agent, int index)`

Definition at line 571 of file xml_compose.c.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_s::datastate`, `MXML_NO_PARENT`, `mxmElementSetAttr()`, `mxmNewElement()`, and `xml_new_cdata()`.

Referenced by `agent_xml_compose_tasks()`.

7.44.1.3 mxml_node_t* agent_xml_compose__agent_data (agent_p *agent*)

Definition at line 150 of file xml_compose.c.

References agent_xml_compose__home(), agent_xml_compose__name(), agent_xml_compose__owner(), agent_xml_compose__tasks(), agent_xml_compose__wg_code(), MXML_ADD_AFTER, mxmlAdd(), and mxmlNewElement().

Referenced by agent_xml_compose__mobile_agent().

7.44.1.4 mxml_node_t* agent_xml_compose__create_row_nodes (void * *data*, int *index*, int * *extent*, ChType_t *type*, int *dim*, int *extent_index*)

Definition at line 622 of file xml_compose.c.

References agent_xml_compose__create_row_nodes(), buf, CH_DATATYPE_SIZE, CH_DATATYPE_VALUE_STRING, MXML_ADD_AFTER, MXML_ADD_TO_PARENT, MXML_NO_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and mxmlNewText().

Referenced by agent_xml_compose__create_row_nodes(), and agent_xml_compose__row().

7.44.1.5 mxml_node_t* agent_xml_compose__data (agent_p *agent*, int *index*, interpreter_variable_data_t * *interp_variable*)

Definition at line 478 of file xml_compose.c.

References agent_xml_compose__row(), interpreter_variable_data_s::array_dim, buf, CH_DATATYPE_STRING, CH_DATATYPE_VALUE_STRING, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, MXML_ADD_AFTER, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and interpreter_variable_data_s::name.

Referenced by agent_xml_compose__task().

7.44.1.6 mxml_node_t* agent_xml_compose__file (agent_p *agent*, int *index*, agent_file_data_t * *agent_file_data*)

Definition at line 552 of file xml_compose.c.

References agent_file_data_s::data, MXML_NO_PARENT, mxmlElementSetAttr(), mxmlNewElement(), mxmlNewText(), and agent_file_data_s::name.

Referenced by agent_xml_compose__task().

7.44.1.7 mxml_node_t* agent_xml_compose__gaf_message (agent_p *agent*)

Definition at line 66 of file xml_compose.c.

References agent_xml_compose__message(), MXML_ADD_AFTER, mxmlAdd(), and mxmlNewElement().

Referenced by agent_xml_compose().

7.44.1.8 mxml_node_t* agent_xml_compose__home (agent_p *agent*)

Definition at line 253 of file xml_compose.c.

References `agent_s::home`, `mxmlNewElement()`, and `mxmlNewText()`.

Referenced by `agent_xml_compose__agent_data()`.

7.44.1.9 `mxml_node_t* agent_xml_compose__message (agent_p agent)`

Definition at line 85 of file `xml_compose.c`.

References `agent_s::agent_type`, `agent_xml_compose__mobile_agent()`, `MC_LOCAL_AGENT`, `MC_REMOTE_AGENT`, `MC_RETURN_AGENT`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, and `mxmlNewElement()`.

Referenced by `agent_xml_compose__gaf_message()`.

7.44.1.10 `mxml_node_t* agent_xml_compose__mobile_agent (agent_p agent)`

Definition at line 129 of file `xml_compose.c`.

References `agent_xml_compose__agent_data()`, `MXML_ADD_AFTER`, `mxmlAdd()`, and `mxmlNewElement()`.

Referenced by `agent_xml_compose__message()`.

7.44.1.11 `mxml_node_t* agent_xml_compose__name (agent_p agent)`

Definition at line 221 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::name`.

Referenced by `agent_xml_compose__agent_data()`.

7.44.1.12 `mxml_node_t* agent_xml_compose__owner (agent_p agent)`

Definition at line 237 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::owner`.

Referenced by `agent_xml_compose__agent_data()`.

7.44.1.13 `mxml_node_t* agent_xml_compose__row (interpreter_variable_data_t * interp_variable, int index)`

Definition at line 599 of file `xml_compose.c`.

References `agent_xml_compose__create_row_nodes()`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, and `interpreter_variable_data_s::data_type`.

Referenced by `agent_xml_compose__data()`.

7.44.1.14 `mxml_node_t* agent_xml_compose__task (agent_p agent, int index)`

Definition at line 342 of file `xml_compose.c`.

References `agent_file_data_Destroy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_compose__data()`, `agent_xml_compose__file()`, `buf`, `agent_task_s::code_id`, `agent_s::datastate`, `ListPop()`, `ListWRLock()`, `ListWRUnlock()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `agent_task_s::persistent`, `agent_datastate_s::persistent`, `agent_task_s::server_name`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `agent_xml_compose__tasks()`.

7.44.1.15 mxml_node_t* agent_xml_compose__tasks (agent_p *agent*)

Definition at line 285 of file `xml_compose.c`.

References `agent_xml_compose__agent_code()`, `agent_xml_compose__task()`, `buf`, `agent_s::datastate`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::task_progress`.

Referenced by `agent_xml_compose__agent_data()`.

7.44.1.16 mxml_node_t* agent_xml_compose__wg_code (agent_p *agent*)

Definition at line 269 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::wg_code`.

Referenced by `agent_xml_compose__agent_data()`.

7.45 /home/dko/Projects/mobilec/src/include/xml_helper.h File Reference

```
#include <mxml.h>
```

Functions

- `mxml_node_t * xml_find_sibling (const mxml_node_t *node, const char *sibling_name)`
- `char * xml_get_cdata (const mxml_node_t *node)`
- `mxml_node_t * xml_get_child (const mxml_node_t *node, const char *child_name, int descend)`
- `mxml_node_t * xml_get_deep_child (const mxml_node_t *parent, const char **child_path)`
- `mxml_node_t * xml_get_next_element (const mxml_node_t *node)`
- `char * xml_get_text (const mxml_node_t *node)`
- `char * xml_get_element_name (const mxml_node_t *node)`
- `mxml_node_t * xml_new_cdata (mxml_node_t *parent, const char *text)`
- `const char * whitespace_cb (mxml_node_t *node, int where)`

7.45.1 Function Documentation

7.45.1.1 `const char * whitespace_cb (mxml_node_t * node, int where)`

Definition at line 572 of file testxml.c.

References `mxml_node_s::child`, `mxml_value_u::element`, `MXML_WS_AFTER_CLOSE`, `MXML_WS_-AFTER_OPEN`, `MXML_WS_BEFORE_CLOSE`, `MXML_WS_BEFORE_OPEN`, `mxml_value_s::name`, `mxml_node_s::parent`, and `mxml_node_s::value`.

Referenced by `main()`.

7.45.1.2 `mxml_node_t* xml_find_sibling (const mxml_node_t * node, const char * sibling_name)`

Definition at line 54 of file xml_helper.c.

References `MXML_NO_DESCEND`, `mxmlFindElement()`, `mxml_node_s::parent`, and `xml_get_element_-name()`.

7.45.1.3 `char* xml_get_cdata (const mxml_node_t * node)`

Definition at line 76 of file xml_helper.c.

References `buf`, `CHECK_NULL`, `MXML_ELEMENT`, `mxml_node_s::type`, and `xml_get_element_-name()`.

Referenced by `xml_get_text()`.

7.45.1.4 `mxml_node_t* xml_get_child (const mxml_node_t * node, const char * child_name, int descend)`

Definition at line 109 of file xml_helper.c.

References `mxmlFindElement()`.

Referenced by agent_return_xml_parse(), agent_xml_parse_agent_data(), agent_xml_parse_data(), agent_xml_parse_mobile_agent(), message_xml_parse(), message_xml_parse_message(), and xml_get_deep_child().

7.45.1.5 `mxml_node_t* xml_get_deep_child (const mxml_node_t *parent, const char **child_path)`

Definition at line 128 of file xml_helper.c.

References MXML_NO_DESCEND, and xml_get_child().

7.45.1.6 `char* xml_get_element_name (const mxml_node_t *node)`

Definition at line 222 of file xml_helper.c.

References mxml_value_u::element, MXML_ELEMENT, mxml_value_s::name, mxml_node_s::type, and mxml_node_s::value.

Referenced by agent_xml_parse_data(), agent_xml_parse_mobile_agent(), agent_xml_parse_row(), message_xml_parse(), xml_find_sibling(), and xml_get_cdata().

7.45.1.7 `mxml_node_t* xml_get_next_element (const mxml_node_t *node)`

Definition at line 142 of file xml_helper.c.

References MXML_ELEMENT, mxml_node_s::next, and mxml_node_s::type.

7.45.1.8 `char* xml_get_text (const mxml_node_t *node)`

Definition at line 160 of file xml_helper.c.

References CHECK_NULL, mxml_node_s::child, mxml_value_u::element, MXML_ELEMENT, MXML_TEXT, mxml_value_s::name, mxml_node_s::next, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and xml_get_cdata().

Referenced by agent_xml_parse_agent_code(), agent_xml_parse_file(), agent_xml_parse_home(), agent_xml_parse_name(), agent_xml_parse_owner(), agent_xml_parse_sender(), and agent_xml_parse_wg_code().

7.45.1.9 `mxml_node_t* xml_new_cdata (mxml_node_t *parent, const char *text)`

Definition at line 235 of file xml_helper.c.

References CHECK_NULL, and mxmlNewElement().

Referenced by agent_xml_compose_agent_code().

7.46 /home/dko/Projects/mobilec/src/include/xml_parser.h File Reference

```
#include <mxml.h>
#include "macros.h"
#include "agent.h"
```

Functions

- [STRUCT \(xml_parser, mxml_node_t *root;mxml_node_t *node;\)](#)
- [error_code_t agent_xml_parse \(agent_p agent\)](#)
- [error_code_t agent_xml_parse__mobile_agent \(agent_p agent, xml_parser_p xml_parser\)](#)
- [error_code_t agent_xml_parse__agent_data \(agent_p agent, xml_parser_p xml_parser\)](#)
- [error_code_t agent_xml_parse__name \(agent_p agent, xml_parser_p xml_parser\)](#)
- [error_code_t agent_xml_parse__owner \(agent_p agent, xml_parser_p xml_parser\)](#)
- [error_code_t agent_xml_parse__home \(agent_p agent, xml_parser_p xml_parser\)](#)
- [error_code_t agent_xml_parse__sender \(agent_p agent, xml_parser_p xml_parser\)](#)
- [error_code_t agent_xml_parse__wg_code \(agent_p agent, xml_parser_p xml_parser\)](#)
- [error_code_t agent_xml_parse__tasks \(agent_p agent, xml_parser_p xml_parser\)](#)
- [error_code_t agent_xml_parse__task \(agent_p agent, xml_parser_p xml_parser, int index\)](#)
- [error_code_t agent_xml_parse__data \(agent_p agent, xml_parser_p xml_parser, int index\)](#)
- [error_code_t agent_xml_parse__file \(agent_p agent, xml_parser_p xml_parser, int index\)](#)
- [error_code_t agent_xml_parse__row \(interpreter_variable_data_t *interp_variable, xml_parser_p xml_parser, int index\)](#)
- [void agent_xml_parse__fill_row_data \(void *data, ChType_t type, int *extent, const mxml_node_t *node, int *index\)](#)
- [error_code_t agent_xml_parse__agent_code \(agent_p agent, int index, xml_parser_p xml_parser\)](#)
- [error_code_t message_xml_parse \(message_p message\)](#)
- [error_code_t message_xml_parse__message \(message_p message, xml_parser_p xml_parser\)](#)

7.46.1 Function Documentation

7.46.1.1 error_code_t agent_xml_parse (agent_p agent)

Definition at line 53 of file xml_parser.c.

References agent_xml_parse__mobile_agent(), agent_s::datastate, MC_SUCCESS, and agent_datastate_s::xml_agent_root.

Referenced by agent_Initialize().

7.46.1.2 error_code_t agent_xml_parse__agent_code (agent_p agent, int index, xml_parser_p xml_parser)

Definition at line 932 of file xml_parser.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_task_s::code_id, agent_s::datastate, MC_SUCCESS, mxmlElementGetAttr(), agent_datastate_s::number_of_tasks, agent_datastate_s::task_progress, agent_datastate_s::tasks, and xml_get_text().

Referenced by agent_xml_parse__tasks().

7.46.1.3 error_code_t agent_xml_parse__agent_data (agent_p agent, xml_parser_p xml_parser)

Definition at line 94 of file xml_parser.c.

References agent_xml_parse__home(), agent_xml_parse__name(), agent_xml_parse__owner(), agent_xml_parse__sender(), agent_xml_parse__tasks(), agent_xml_parse__wg_code(), MC_ERR_PARSE, MC_SUCCESS, and xml_get_child().

Referenced by agent_xml_parse__mobile_agent().

7.46.1.4 error_code_t agent_xml_parse__data (agent_p agent, xml_parser_p xml_parser, int index)

Definition at line 561 of file xml_parser.c.

References agent_task_s::agent_return_data, agent_task_s::agent_variable_list, agent_xml_parse__row(), interpreter_variable_data_s::array_dim, CH_DATATYPE_SIZE, CH_DATATYPE_STR_TO_VAL, CH_STRING_DATATYPE, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, interpreter_variable_data_New(), ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR_PARSE, MC_SUCCESS, mxmlelementGetAttr(), interpreter_variable_data_s::name, mxmle_node_s::parent, agent_task_s::persistent, agent_datastate_s::tasks, xml_get_child(), and xml_get_element_name().

Referenced by agent_xml_parse__task().

7.46.1.5 error_code_t agent_xml_parse__file (agent_p agent, xml_parser_p xml_parser, int index)

Definition at line 709 of file xml_parser.c.

References agent_file_data_NewWithData(), agent_task_s::agent_file_list, CHECK_NULL, agent_s::datastate, ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR_PARSE, MC_SUCCESS, mxmlelementGetAttr(), agent_datastate_s::tasks, and xml_get_text().

Referenced by agent_xml_parse__task().

7.46.1.6 void agent_xml_parse__fill_row_data (void * data, ChType_t type, int * extent, const mxmle_node_t * node, int * index)

Definition at line 811 of file xml_parser.c.

References agent_xml_parse__fill_row_data(), buf, CH_DATATYPE_SIZE, mxmle_node_s::child, MXML_DESCEND_FIRST, MXML_ELEMENT, MXML_TEXT, mxmleFindElement(), mxmle_text_s::string, strtok_r, mxmle_value_u::text, mxmle_node_s::type, and mxmle_node_s::value.

Referenced by agent_xml_parse__fill_row_data(), and agent_xml_parse__row().

7.46.1.7 error_code_t agent_xml_parse__home (agent_p agent, xml_parser_p xml_parser)

Definition at line 220 of file xml_parser.c.

References CHECK_NULL, agent_s::home, MC_SUCCESS, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

7.46.1.8 error_code_t agent_xml_parse__mobile_agent (agent_p agent, xml_parser_p xml_parser)

Definition at line 66 of file xml_parser.c.

References agent_xml_parse__agent_data(), MC_ERR_PARSE, xml_get_child(), and xml_get_element_name().

Referenced by agent_xml_parse().

7.46.1.9 error_code_t agent_xml_parse__name (agent_p agent, xml_parser_p xml_parser)

Definition at line 167 of file xml_parser.c.

References CHECK_NULL, MC_ERR_PARSE, MC_SUCCESS, agent_s::name, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

7.46.1.10 error_code_t agent_xml_parse__owner (agent_p agent, xml_parser_p xml_parser)

Definition at line 193 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::owner, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

7.46.1.11 error_code_t agent_xml_parse__row (interpreter_variable_data_t *interp_variable, xml_parser_p xml_parser, int index)

Definition at line 744 of file xml_parser.c.

References agent_xml_parse_fill_row_data(), interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, MC_SUCCESS, and xml_get_element_name().

Referenced by agent_xml_parse__data().

7.46.1.12 error_code_t agent_xml_parse__sender (agent_p agent, xml_parser_p xml_parser)

Definition at line 246 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::sender, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

7.46.1.13 error_code_t agent_xml_parse__task (agent_p agent, xml_parser_p xml_parser, int index)

Definition at line 443 of file xml_parser.c.

References agent_xml_parse__data(), agent_xml_parse__file(), CHECK_NULL, agent_task_s::code_id, agent_s::datastate, MC_ERR_PARSE, MC_SUCCESS, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmxElemGetAttr(), mxmxFindElement(), agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, and agent_task_s::var_name.

Referenced by agent_xml_parse__tasks().

7.46.1.14 error_code_t agent_xml_parse_tasks (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 305 of file xml_parser.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_task_New(), agent_xml_parse_agent_code(), agent_xml_parse_task(), buf, agent_s::datastate, MC_ERR_PARSE, MXML_DESCEND, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlelementGetAttr(), mxmlelementFindElement(), agent_datastate_s::number_of_tasks, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by agent_return_xml_parse(), and agent_xml_parse_agent_data().

7.46.1.15 error_code_t agent_xml_parse_wg_code (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 274 of file xml_parser.c.

References MC_SUCCESS, agent_s::wg_code, and xml_get_text().

Referenced by agent_xml_parse_agent_data().

7.46.1.16 error_code_t message_xml_parse (message_p *message*)

Definition at line 1008 of file xml_parser.c.

References MC_ERR_PARSE, message_xml_parse_message(), MXML_DESCEND, MXML_NO_DESCEND, mxmlelementFindElement(), xml_get_child(), xml_get_element_name(), and message_s::xml_root.

Referenced by acc_connection_Thread(), message_InitializeFromConnection(), and message_InitializeFromString().

7.46.1.17 error_code_t message_xml_parse_message (message_p *message*, xml_parser_p *xml_parser*)

Definition at line 1063 of file xml_parser.c.

References message_s::addr, buf, CHECK_NULL, ENCRYPTED_DATA, ENCRYPTION_INITIALIZE, FIPA_ACL, message_s::from_address, MC_ERR_PARSE, MC_SUCCESS, message_s::message_type, MOBILE_AGENT, mxmlelementGetAttr(), port, REQUEST_ENCRYPTION_INITIALIZE, RETURN_MSG, strtok_r, xml_get_child(), and message_s::xml_payload.

Referenced by message_xml_parse().

7.46.1.18 STRUCT (xml_parser, mxml_node_t *root;mxml_node_t *node;)

7.47 /home/dko/Projects/mobilec/src/libb64-1.2/base64/base64.cc File Reference

```
#include <b64/encode.h>
#include <b64/decode.h>
#include <iostream>
#include <fstream>
#include <string>
#include <stdlib.h>
```

Functions

- void [usage\(\)](#)
- void [usage\(const std::string &message\)](#)
- int [main\(int argc, char **argv\)](#)

7.47.1 Function Documentation

7.47.1.1 int main (int *argc*, char ***argv*)

Definition at line 35 of file base64.cc.

References [base64::decoder::decode\(\)](#), [base64::encoder::encode\(\)](#), and [usage\(\)](#).

7.47.1.2 void usage (const std::string & *message*)

Definition at line 28 of file base64.cc.

References [usage\(\)](#).

7.47.1.3 void usage ()

Definition at line 18 of file base64.cc.

Referenced by [main\(\)](#), and [usage\(\)](#).

7.48 /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cdecode.h File Reference

Data Structures

- struct [base64_decodestate](#)

Enumerations

- enum [base64_decodestep](#) { [step_a](#), [step_b](#), [step_c](#), [step_d](#) }

Functions

- void [base64_init_decodestate](#) ([base64_decodestate](#) *[state_in](#))
- int [base64_decode_value](#) (char [value_in](#))
- int [base64_decode_block](#) (const char *[code_in](#), const int [length_in](#), char *[plaintext_out](#), [base64_decodestate](#) *[state_in](#))

7.48.1 Enumeration Type Documentation

7.48.1.1 enum [base64_decodestep](#)

Enumerator:

step_a
step_b
step_c
step_d

Definition at line 11 of file cdecode.h.

7.48.2 Function Documentation

7.48.2.1 int [base64_decode_block](#) (const char *[code_in](#), const int [length_in](#), char *[plaintext_out](#), [base64_decodestate](#) *[state_in](#))

Definition at line 25 of file cdecode.c.

References [base64_decode_value\(\)](#), [base64_decodestate::plainchar](#), [base64_decodestate::step](#), [step_a](#), [step_b](#), [step_c](#), and [step_d](#).

Referenced by [MC_AgentRetrieveFile\(\)](#).

7.48.2.2 int [base64_decode_value](#) (char [value_in](#))

Definition at line 10 of file cdecode.c.

Referenced by [base64_decode_block\(\)](#).

7.48.2.3 void base64_init_decodestate (base64_decodestate * *state_in*)

Definition at line 19 of file cdecode.c.

References base64_decodestate::plainchar, base64_decodestate::step, and step_a.

Referenced by MC_AgentRetrieveFile().

7.49 /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cencode.h File Reference

Data Structures

- struct `base64_encodestate`

Enumerations

- enum `base64_encodestep` { `step_A`, `step_B`, `step_C` }

Functions

- void `base64_init_encodestate` (`base64_encodestate` *`state_in`)
- char `base64_encode_value` (char `value_in`)
- int `base64_encode_block` (const char *`plaintext_in`, int `length_in`, char *`code_out`, `base64_encodestate` *`state_in`)
- int `base64_encode_blockend` (char *`code_out`, `base64_encodestate` *`state_in`)

7.49.1 Enumeration Type Documentation

7.49.1.1 enum `base64_encodestep`

Enumerator:

`step_A`
`step_B`
`step_C`

Definition at line 11 of file cencode.h.

7.49.2 Function Documentation

7.49.2.1 int `base64_encode_block` (const char *`plaintext_in`, int `length_in`, char *`code_out`, `base64_encodestate` *`state_in`)

Definition at line 26 of file cencode.c.

References `base64_encode_value()`, `CHARS_PER_LINE`, `base64_encodestate::result`, `base64_encodestate::step`, `step_A`, `step_B`, `step_C`, and `base64_encodestate::stepcount`.

Referenced by `agent_file_data_InitializeFromFilename()`.

7.49.2.2 int `base64_encode_blockend` (char *`code_out`, `base64_encodestate` *`state_in`)

Definition at line 87 of file cencode.c.

References `base64_encode_value()`, `base64_encodestate::result`, `base64_encodestate::step`, `step_A`, `step_B`, and `step_C`.

Referenced by `agent_file_data_InitializeFromFilename()`.

7.49.2.3 char base64_encode_value (char *value_in*)

Definition at line 19 of file cencode.c.

Referenced by base64_encode_block(), and base64_encode_blockend().

7.49.2.4 void base64_init_encodestate (base64_encodestate * *state_in*)

Definition at line 12 of file cencode.c.

References base64_encodestate::result, base64_encodestate::step, step_A, and base64_encodestate::stepcount.

Referenced by agent_file_data_InitializeFromFilename().

7.50 /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/decode.h File Reference

```
#include <iostream>
#include "cdecode.h"
```

Data Structures

- struct `base64::base64_decodestate`
- struct `base64::decoder`

Namespaces

- namespace `base64`

Enumerations

- enum `base64::base64_decodestep` { `base64::step_a`, `base64::step_b`, `base64::step_c`, `base64::step_d` }

Functions

- void `base64::base64_init_decodestate` (`base64_decodestate` *`state_in`)
- int `base64::base64_decode_value` (char `value_in`)
- int `base64::base64_decode_block` (const char *`code_in`, const int `length_in`, char *`plaintext_out`, `base64_decodestate` *`state_in`)

7.51 /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/encode.h File Reference

```
#include <iostream>
#include "cencode.h"
```

Data Structures

- struct `base64::base64_encodestate`
- struct `base64::encoder`

Namespaces

- namespace `base64`

Enumerations

- enum `base64::base64_encodestep` { `base64::step_A`, `base64::step_B`, `base64::step_C` }

Functions

- void `base64::base64_init_encodestate` (`base64_encodestate` *`state_in`)
- char `base64::base64_encode_value` (char `value_in`)
- int `base64::base64_encode_block` (const char *`plaintext_in`, int `length_in`, char *`code_out`, `base64_encodestate` *`state_in`)
- int `base64::base64_encode_blockend` (char *`code_out`, `base64_encodestate` *`state_in`)

7.52 /home/dko/Projects/mobilec/src/libb64-1.2/src/cdecode.c File Reference

```
#include <b64/cdecode.h>
```

Functions

- int **base64_decode_value** (char *value_in*)
- void **base64_init_decodestate** (**base64_decodestate** **state_in*)
- int **base64_decode_block** (const char **code_in*, const int *length_in*, char **plaintext_out*, **base64_decodestate** **state_in*)

7.52.1 Function Documentation

7.52.1.1 int **base64_decode_block** (const char **code_in*, const int *length_in*, char **plaintext_out*, **base64_decodestate** **state_in*)

Definition at line 25 of file cdecode.c.

References `base64_decode_value()`, `base64_decodestate::plainchar`, `base64_decodestate::step`, `step_a`, `step_b`, `step_c`, and `step_d`.

Referenced by `MC_AgentRetrieveFile()`.

7.52.1.2 int **base64_decode_value** (char *value_in*)

Definition at line 10 of file cdecode.c.

Referenced by `base64_decode_block()`.

7.52.1.3 void **base64_init_decodestate** (**base64_decodestate** **state_in*)

Definition at line 19 of file cdecode.c.

References `base64_decodestate::plainchar`, `base64_decodestate::step`, and `step_a`.

Referenced by `MC_AgentRetrieveFile()`.

7.53 /home/dko/Projects/mobilec/src/libb64-1.2/src/cencode.c File Reference

```
#include <b64/cencode.h>
```

Functions

- void `base64_init_encodestate` (`base64_encodestate *state_in`)
- char `base64_encode_value` (`char value_in`)
- int `base64_encode_block` (`const char *plaintext_in, int length_in, char *code_out, base64_encodestate *state_in`)
- int `base64_encode_blockend` (`char *code_out, base64_encodestate *state_in`)

Variables

- const int `CHARS_PER_LINE` = 72

7.53.1 Function Documentation

7.53.1.1 int `base64_encode_block` (`const char *plaintext_in, int length_in, char *code_out, base64_encodestate *state_in`)

Definition at line 26 of file cencode.c.

References `base64_encode_value()`, `CHARS_PER_LINE`, `base64_encodestate::result`, `base64_encodestate::step`, `step_A`, `step_B`, `step_C`, and `base64_encodestate::stepcount`.

Referenced by `agent_file_data_InitializeFromFilename()`.

7.53.1.2 int `base64_encode_blockend` (`char *code_out, base64_encodestate *state_in`)

Definition at line 87 of file cencode.c.

References `base64_encode_value()`, `base64_encodestate::result`, `base64_encodestate::step`, `step_A`, `step_B`, and `step_C`.

Referenced by `agent_file_data_InitializeFromFilename()`.

7.53.1.3 char `base64_encode_value` (`char value_in`)

Definition at line 19 of file cencode.c.

Referenced by `base64_encode_block()`, and `base64_encode_blockend()`.

7.53.1.4 void `base64_init_encodestate` (`base64_encodestate *state_in`)

Definition at line 12 of file cencode.c.

References `base64_encodestate::result`, `base64_encodestate::step`, `step_A`, and `base64_encodestate::stepcount`.

Referenced by `agent_file_data_InitializeFromFilename()`.

7.53.2 Variable Documentation

7.53.2.1 const int CHARS_PER_LINE = 72

Definition at line 10 of file cencode.c.

Referenced by base64_encode_block().

7.54 /home/dko/Projects/mobilec/src/libmc.c File Reference

```
#include "config.h"
#include <unistd.h>
#include <pthread.h>
#include <sys/socket.h>
#include <netdb.h>
#include <embedch.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/time.h>
#include <b64/cdecode.h>
#include "include/libmc.h"
#include "include/mc_error.h"
#include "include/macros.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/fipa_acl_envelope.h"
#include "include/fipa_acl.h"
#include "include/agent.h"
#include "include/agent_file_data.h"
#include "include/agent_task.h"
#include "include/agent_lib.h"
```

Functions

- EXPORTMC int **MC_AclDestroy** (struct **fipa_acl_message_s** *message)
Destroy a FIPA ACL message.
- EXPORTMC **fipa_acl_message_t** * **MC_AclNew** (void)
Allocate a new ACL Message.
- EXPORTMC int **MC_AclPost** (MCAgent_t agent, struct **fipa_acl_message_s** *message)
Post ACL message to agent.
- EXPORTMC **fipa_acl_message_t** * **MC_AclReply** (**fipa_acl_message_t** *acl_message)
Reply to an ACL message.
- EXPORTMC **fipa_acl_message_t** * **MC_AclRetrieve** (MCAgent_t agent)
Retrieve an ACL message.
- EXPORTMC int **MC_AclSend** (MCAgency_t attr, **fipa_acl_message_t** *acl)

Send a composed ACL Message.

- EXPORTMC `fipa_acl_message_t * MC_AclWaitRetrieve (MCAgent_t agent)`

Wait for and retrieve an ACL message.

- EXPORTMC enum `fipa_protocol_e MC_AclGetProtocol (struct fipa_acl_message_s *acl)`
- EXPORTMC char * `MC_AclGetConversationID (struct fipa_acl_message_s *acl)`
- EXPORTMC enum `fipa_performative_e MC_AclGetPerformative (struct fipa_acl_message_s *acl)`
- EXPORTMC int `MC_AclGetSender (struct fipa_acl_message_s *acl, char **name, char **address)`
- EXPORTMC const char * `MC_AclGetContent (struct fipa_acl_message_s *acl)`
- EXPORTMC int `MC_AclSetProtocol (fipa_acl_message_t *acl, enum fipa_protocol_e protocol)`
- EXPORTMC int `MC_AclSetConversationID (fipa_acl_message_t *acl, const char *id)`
- EXPORTMC int `MC_AclSetPerformative (fipa_acl_message_t *acl, enum fipa_performative_e performative)`
- EXPORTMC int `MC_AclSetSender (fipa_acl_message_t *acl, const char *name, const char *address)`
- EXPORTMC int `MC_AclAddReceiver (fipa_acl_message_t *acl, const char *name, const char *address)`
- EXPORTMC int `MC_AclAddReplyTo (fipa_acl_message_t *acl, const char *name, const char *address)`
- EXPORTMC int `MC_AclSetContent (fipa_acl_message_t *acl, const char *content)`
- EXPORTMC int `MC_AddAgent (MCAgency_t attr, MCAgent_t agent)`

Add an agent to the agency 'attr'.

- EXPORTMC int `MC_AddStationaryAgent (MCAgency_t agency, void *(*agent_thread)(stationary_agent_info_t *), const char *name, void *agent_args)`

Add a stationary agent to the agency.

- EXPORTMC int `MC_AddAgentInitCallback (MCAgency_t agency, MC_AgentInitCallbackFunc_t function, void *user_data)`

Add an agent initialization callback function.

- EXPORTMC `MCAgency_t MC_AgentInfo_GetAgency (stationary_agent_info_t *stationary_agent_info)`

Get the host Mobile-C agency handle from a "stationary_agent_info_t" data structure.

- EXPORTMC `MCAgent_t MC_AgentInfo_GetAgent (stationary_agent_info_t *stationary_agent_info)`

Retrieve an agent handle from the stationary agent info from within a stationary agent.

- EXPORTMC `void * MC_AgentInfo_GetAgentArgs (stationary_agent_info_t *stationary_agent_info)`

Retrieve the agent argument supplied as the "agent_args" parameter in the `MC_AddStationaryAgent()` function.

- EXPORTMC int `MC_AgentAddTask (MCAgent_t agent, const char *code, const char *return_var_name, const char *server, int persistent)`

Add a new task to an already existing agent.

- EXPORTMC int `MC_AgentAddTaskFromFile (MCAgent_t agent, const char *filename, const char *return_var_name, const char *server, int persistent)`

Add a new task to an already existing agent.

- EXPORTMC int [MC_AgentAttachFile](#) ([MCAgent_t](#) agent, const char *name, const char *filepath)
Attach a file to the agent's current task.
- EXPORTMC int [MC_AgentListFiles](#) ([MCAgent_t](#) agent, int task_num, char ***names, int *num_files)
Get a list of an agent's attached files.
- EXPORTMC int [MC_AgentProcessingBegin](#) ([MCAgency_t](#) attr)
Begin a series of agent functions.
- EXPORTMC int [MC_AgentProcessingEnd](#) ([MCAgency_t](#) attr)
- EXPORTMC int [MC_AgentRetrieveFile](#) ([MCAgent_t](#) agent, int task_num, const char *name, const char *save_path)
Saves an agent's attached file to the filesystem.
- EXPORTMC int [MC_AgentReturnArrayExtent](#) ([MCAgent_t](#) agent, int task_num, int index)
Get the extent of a dimension of an agent's return data, if it is an array.
- EXPORTMC int [MC_AgentReturnArrayDim](#) ([MCAgent_t](#) agent, int task_num)
Get the dimension of an agent's return data, if it is an array.
- EXPORTMC int [MC_AgentReturnArrayNum](#) ([MCAgent_t](#) agent, int task_num)
Get the total number of elements of the agent return data.
- EXPORTMC const void * [MC_AgentReturnDataGetSymbolAddr](#) ([MCAgent_t](#) agent, int task_num)
Get a pointer to the agent's return data.
- EXPORTMC size_t [MC_AgentReturnDataSize](#) ([MCAgent_t](#) agent, int task_num)
Get the size of an agent's return data type.
- EXPORTMC int [MC_AgentReturnDataType](#) ([MCAgent_t](#) agent, int task_num)
Get the type of an agent's return data.
- EXPORTMC int [MC_AgentReturnIsArray](#) ([MCAgent_t](#) agent, int task_num)
Check to see whether or not an agent's return data is an array.
- EXPORTMC const void * [MC_AgentVariableRetrieve](#) ([MCAgent_t](#) agent, const char *var_name, int task_num)
Retrieve a pointer to a previously saved variable.
- EXPORTMC int [MC_AgentVariableRetrieveInfo](#) ([MCAgent_t](#) agent, const char *var_name, int task_num, const void **data, int *dim, const int **extent)
Retrieve a info about a previously saved variable.
- EXPORTMC int [MC_AgentVariableSave](#) ([MCAgent_t](#) agent, const char *var_name)
Mark an agent variable for saving.

- EXPORTMC int [MC_BARRIER](#) ([MCAgency_t](#) attr, int id)
- EXPORTMC int [MC_BARRIERINIT](#) ([MCAgency_t](#) attr, int id, int num_procs)

Initialize a MobileC Barrier.
- EXPORTMC int [MC_BARRIERDELETE](#) ([MCAgency_t](#) attr, int id)

Find and delete an initialized MobileC Barrier.
- EXPORTMC int [MC_CALLAGENTFUNC](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, int numArgs,...)

Use custom ChOptions_t type for internal Ch interpreter.
- EXPORTMC int [MC_CALLAGENTFUNCARG](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, void *arg)

Calls a function defined in an agent.
- EXPORTMC int [MC_CALLAGENTFUNCV](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, va_list ap)

Calls a function defined in an agent.
- EXPORTMC int [MC_CALLAGENTFUNCVAR](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, [ChVaList_t](#) varg)
 - EXPORTMC [MCAgent_t MC_ComposeAgent](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, int persistent)

Compose a new agent dynamically without using a prewritten XML file.
- EXPORTMC [MCAgent_t MC_ComposeAgentS](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, int persistent, const char *workgroup_code)

Compose a new agent dynamically without using a prewritten XML file.
- EXPORTMC [MCAgent_t MC_ComposeAgentWithWorkgroup](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, int persistent, const char *workgroup_code)

Compose a new agent dynamically without using a prewritten XML file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFile](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, int persistent)

Compose a new agent dynamically from a source code file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFileS](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, int persistent, const char *workgroup_code)

Compose a new agent dynamically from a source code file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFileWithWorkgroup](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, int persistent, const char *workgroup_code)

Compose a new agent dynamically from a source code file.
- EXPORTMC int [MC_COND.broadcast](#) ([MCAgency_t](#) attr, int id)

Wakes up all agents/threads waiting on a condition variable.

- EXPORTMC int [MC_CondSignal](#) ([MCAgency_t](#) attr, int id)
Wakes up at least one thread waiting on a condition variable.
- EXPORTMC int [MC_CondWait](#) ([MCAgency_t](#) attr, int id)
Wait on a MobileC synchronization variable.
- EXPORTMC int [MC_CondReset](#) ([MCAgency_t](#) attr, int id)
Reset a previously signalled MobileC condition variable.
- EXPORTMC int [MC_CopyAgent](#) ([MCAgent_t](#) *agent_out, const [MCAgent_t](#) agent_in)
Performs a deep-copy of an agent structure.
- EXPORTMC int [MC_DeleteAgent](#) ([MCAgent_t](#) agent)
Stop and remove an agent.
- EXPORTMC int [MC_DeleteAgentWG](#) ([MCAgent_t](#) calling_agent, [MCAgent_t](#) agent)
Stop and remove an agent in the same workgroup.
- EXPORTMC int [MC_DestroyServiceSearchResult](#) (char **agentName, char **serviceName, int *agentID, int numResult)
Free memory allocated by a Service Search operation.
- EXPORTMC int [MC_DeregisterService](#) ([MCAgency_t](#) agency, int agentID, const char *serviceName)
- EXPORTMC int [MC_End](#) ([MCAgency_t](#) agency)
End an agency.
- EXPORTMC [MCAgent_t](#) [MC_FindAgentByName](#) ([MCAgency_t](#) attr, const char *name)
Find an agent by its name.
- EXPORTMC [MCAgent_t](#) [MC_FindAgentByID](#) ([MCAgency_t](#) attr, int ID)
Find an agent by its id.
- EXPORTMC time_t [MC_GetAgentArrivalTime](#) ([MCAgent_t](#) agent)
- EXPORTMC int [MC_GetAgentStatus](#) ([MCAgent_t](#) agent)
Get an agent's current status.
- EXPORTMC char * [MC_GetAgentXMLString](#) ([MCAgent_t](#) agent)
Get an agent's xml string.
- EXPORTMC void * [MC_GetAgentExecEngine](#) ([MCAgent_t](#) agent)
Retrieve an agent's Ch interpreter.
- EXPORTMC int [MC_GetAgentID](#) ([MCAgent_t](#) agent)
Retrieve an agent's id.
- EXPORTMC char * [MC_GetAgentName](#) ([MCAgent_t](#) agent)
- EXPORTMC int [MC_GetAgentReturnData](#) ([MCAgent_t](#) agent, int task_num, void **data, int *dim, int **extent)

Get an agent's return data.

- EXPORTMC int [MC_GetAgentNumTasks](#) ([MCAgent_t](#) agent)
Retrieve the number of tasks an agent has.
- EXPORTMC enum [MC_AgentType_e](#) [MC_GetAgentType](#) ([MCAgent_t](#) agent)
Get an agent's type.
- EXPORTMC int [MC_GetAgents](#) ([MCAgency_t](#) attr, [MCAgent_t](#) **agents, int *num_agents, unsigned int agent_status_flags)
Get a list of agents that match a certain agent status.
- EXPORTMC int [MC_GetAllAgents](#) ([MCAgency_t](#) attr, [MCAgent_t](#) **agents, int *num_agents)
Get all of the agents on an agency.
- EXPORTMC int [MC_GetNumAgents](#) ([MCAgency_t](#) attr, int *num_agents)
Get the number of agents residing on an agency.
- EXPORTMC int [MC_HaltAgency](#) ([MCAgency_t](#) attr)
Halt an agency: Do not process new entries in queues.
- EXPORTMC [MCAgency_t](#) [MC_Initialize](#) (int port, [MCAgencyOptions_t](#) *options)
Initialize and start a MobileC agency.
- EXPORTMC int [MC_InitializeAgencyOptions](#) (struct [MCAgencyOptions_s](#) *options)
Initialize MobileC options.
- EXPORTMC int [MC_LoadAgentFromFile](#) ([MCAgency_t](#) attr, const char *filename)
Load an agent from a file into an agency.
- EXPORTMC int [MC_MigrateAgent](#) ([MCAgent_t](#) agent, const char *hostname, int port)
Migrates a running agent to another host.
- EXPORTMC int [MC_MutexLock](#) ([MCAgency_t](#) attr, int id)
Locks a MobileC synchronization variable as a mutex.
- EXPORTMC int [MC_MutexUnlock](#) ([MCAgency_t](#) attr, int id)
- EXPORTMC int [MC_PrintAgentCode](#) ([MCAgent_t](#) agent)
Prints an agents code to stdout.
- EXPORTMC int [MC_QueueRDLock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)
Lock an agency queue for reading. Prevents other threads from writing.
- EXPORTMC int [MC_QueueRDUlock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)
Unlock an agency queue that was previously locked for reading.
- EXPORTMC int [MC_QueueWRLock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)
Lock an agency queue for writing. Prevents other threads from reading and writing.
- EXPORTMC int [MC_QueueWRUnlock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)

Unlock an agency queue that was previously locked for writing.

- EXPORTMC int [MC_RegisterService](#) ([MCAgency_t](#) agency, [MCAgent_t](#) agent, int agentID, const char *agentName, char **serviceNames, int numServices)
Register a new service with the Directory Facilitator.
- EXPORTMC int [MC_ResumeAgency](#) ([MCAgency_t](#) attr)
Resumes a halted agency.
- EXPORTMC [MCAgent_t](#) [MC_RetrieveAgent](#) ([MCAgency_t](#) attr)
Retrieves the oldest agent from an agency.
- EXPORTMC char * [MC_RetrieveAgentCode](#) ([MCAgent_t](#) agent)
Retrieves an agent's Ch code.
- EXPORTMC int [MC_ResetSignal](#) ([MCAgency_t](#) attr)
Reset a MobileC signal.
- EXPORTMC int [MC_SearchForService](#) ([MCAgency_t](#) attr, const char *searchString, char ***agentNames, char ***serviceNames, int **agentIDs, int *numResults)
Search the directory facilitator for a service.
- EXPORTMC int [MC_SemaphorePost](#) ([MCAgency_t](#) attr, int id)
Post to a MobileC synchronization variable semaphore.
- EXPORTMC int [MC_SemaphoreWait](#) ([MCAgency_t](#) attr, int id)
Decreases a MobileC synchronization variable semaphore count by one.
- EXPORTMC int [MC_SendCh](#) ([MCAgency_t](#) attr, const char *filename, const char *remotehost, int port)
- EXPORTMC int [MC_SendAgent](#) ([MCAgency_t](#) attr, const char *string)
Sends an agent migration message.
- EXPORTMC int [MC_SendAgentFile](#) ([MCAgency_t](#) attr, const char *filename)
Sends an agent migration message.
- EXPORTMC int [MC_SendAgentMigrationMessage](#) ([MCAgency_t](#) attr, const char *string, const char *hostname, int port)
Sends an agent migration message.
- EXPORTMC int [MC_SendAgentMigrationMessageFile](#) ([MCAgency_t](#) attr, const char *filename, const char *hostname, int port)
Sends an agent migration message.
- EXPORTMC int [MC_SendSteerCommand](#) ([MCAgency_t](#) attr, enum [MC_SteerCommand_e](#) cmd)
- EXPORTMC int [MC_SetAgentStatus](#) ([MCAgent_t](#) agent, enum [MC_AgentStatus_e](#) status)
Set an agent's status.
- EXPORTMC int [MC_SetDefaultAgentStatus](#) ([MCAgency_t](#) agency, enum [MC_AgentStatus_e](#) status)

Sets default incoming agent status.

- EXPORTMC int [MC_SetThreadOn](#) ([MCAgencyOptions_t](#) *options, enum [MC_ThreadIndex_e](#) index)

Sets a MobileC thread to "on" status.

- EXPORTMC int [MC_SetThreadsAllOn](#) ([MCAgencyOptions_t](#) *options)

Set all Mobile-C threads on.

- EXPORTMC int [MC_SetThreadOff](#) ([MCAgencyOptions_t](#) *options, enum [MC_ThreadIndex_e](#) index)

Sets a MobileC thread to "off" status.

- EXPORTMC int [MC_SetThreadsAllOff](#) ([MCAgencyOptions_t](#) *options)

Set all MobileC threads to 'off' status.

- EXPORTMC int [MC_Steer](#) ([MCAgency_t](#) attr, int(*funcptr)(void *data), void *arg)

Set up a steerable algorithm.

- EXPORTMC enum [MC_SteerCommand_e](#) [MC_SteerControl](#) (void)

The MobileC user-algorithm steering function.

- EXPORTMC int [MC_SyncDelete](#) ([MCAgency_t](#) attr, int id)

Deletes a previously initialized synchronization variable.

- EXPORTMC int [MC_SyncInit](#) ([MCAgency_t](#) attr, int id)

Initializes a new MobileC synchronization variable.

- EXPORTMC int [MC_TerminateAgent](#) ([MCAgent_t](#) agent)

Halt a running agent.

- EXPORTMC int [MC_TerminateAgentWG](#) ([MCAgent_t](#) calling_agent, [MCAgent_t](#) agent)

- EXPORTMC int [MC_MainLoop](#) ([MCAgency_t](#) attr)

Wait indefinitely.

- EXPORTMC int [MC_WaitAgent](#) ([MCAgency_t](#) attr)

Wait indefinitely.

- EXPORTMC [MCAgent_t](#) [MC_WaitRetrieveAgent](#) ([MCAgency_t](#) attr)

Wait and retrieve an agent.

- EXPORTMC int [MC_WaitSignal](#) ([MCAgency_t](#) attr, int signals)

Wait for a MobileC signal.

- EXPORTMC int [MC_AclDestroy_chdl](#) (void *varg)

- EXPORTMC void * [MC_AclNew_chdl](#) (void *varg)

- EXPORTMC int [MC_AclPost_chdl](#) (void *varg)

- EXPORTCH void * [MC_AclReply_chdl](#) (void *varg)

- EXPORTCH void * [MC_AclRetrieve_chdl](#) (void *varg)

- EXPORTCH int [MC_AclSend_chdl](#) (void *varg)

- EXPORTCH void * [MC_AclWaitRetrieve_chdl](#) (void *varg)
- EXPORTCH int [MC_AclGetProtocol_chdl](#) (void *varg)
- EXPORTCH char * [MC_AclGetConversationID_chdl](#) (void *varg)
- EXPORTCH int [MC_AclGetPerformative_chdl](#) (void *varg)
- EXPORTCH int [MC_AclGetSender_chdl](#) (void *varg)
- EXPORTCH char * [MC_AclGetContent_chdl](#) (void *varg)
- EXPORTCH int [MC_AclSetProtocol_chdl](#) (void *varg)
- EXPORTCH int [MC_AclSetConversationID_chdl](#) (void *varg)
- EXPORTCH int [MC_AclSetPerformative_chdl](#) (void *varg)
- EXPORTCH int [MC_AclSetSender_chdl](#) (void *varg)
- EXPORTCH int [MC_AclAddReceiver_chdl](#) (void *varg)
- EXPORTCH int [MC_AclAddReplyTo_chdl](#) (void *varg)
- EXPORTCH int [MC_AclSetContent_chdl](#) (void *varg)
- EXPORTCH int [MC_AddAgent_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentAddTask_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentAttachFile_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentListFiles_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentRetrieveFile_chdl](#) (void *varg)
- EXPORTCH const void * [MC_AgentVariableRetrieve_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentVariableSave_chdl](#) (void *varg)
- EXPORTCH int [MC_CallAgentFunc_chdl](#) (void *varg)
- EXPORTCH int [MC_Barrier_chdl](#) (void *varg)
- EXPORTCH int [MC_BarrierDelete_chdl](#) (void *varg)
- EXPORTCH int [MC_BarrierInit_chdl](#) (void *varg)
- EXPORTCH int [MC_CondBroadcast_chdl](#) (void *varg)
- EXPORTCH MCAgent_t [MC_ComposeAgent_chdl](#) (void *varg)
- EXPORTCH MCAgent_t [MC_ComposeAgentWithWorkgroup_chdl](#) (void *varg)
- EXPORTCH MCAgent_t [MC_ComposeAgentFromFile_chdl](#) (void *varg)
- EXPORTCH MCAgent_t [MC_ComposeAgentFromFileWithWorkgroup_chdl](#) (void *varg)
- EXPORTCH int [MC_CondSignal_chdl](#) (void *varg)
- EXPORTCH int [MC_CondReset_chdl](#) (void *varg)
- EXPORTCH int [MC_CondWait_chdl](#) (void *varg)
- EXPORTCH int [MC_DeleteAgent_chdl](#) (void *varg)
- EXPORTCH int [MC_DeleteAgentWG_chdl](#) (void *varg)
- EXPORTCH int [MC_DestroyServiceSearchResult_chdl](#) (void *varg)
- EXPORTCH int [MC_DeregisterService_chdl](#) (void *varg)
- EXPORTCH int [MC_End_chdl](#) (void *varg)
- EXPORTCH MCAgent_t [MC_FindAgentByID_chdl](#) (void *varg)
- EXPORTCH MCAgent_t [MC_FindAgentByName_chdl](#) (void *varg)
- EXPORTCH time_t [MC_GetAgentArrivalTime_chdl](#) (void *varg)
- EXPORTCH int [MC_GetAgentID_chdl](#) (void *varg)
- EXPORTCH char * [MC_GetAgentName_chdl](#) (void *varg)
- EXPORTCH int [MC_GetAgentNumTasks_chdl](#) (void *varg)
- EXPORTCH int [MC_GetAgentStatus_chdl](#) (void *varg)
- EXPORTCH char * [MC_GetAgentXMLString_chdl](#) (void *varg)
- EXPORTCH int [MC_GetTimeOfDay_chdl](#) (void *varg)
- EXPORTCH int [MC_HaltAgency_chdl](#) (void *varg)
- EXPORTCH int [MC_MigrateAgent_chdl](#) (void *varg)
- EXPORTCH int [MC_MutexLock_chdl](#) (void *varg)
- EXPORTCH int [MC_MutexUnlock_chdl](#) (void *varg)

- EXPORTCH int [MC_PrintAgentCode_chdl](#) (void *varg)
- EXPORTCH int [MC_RegisterService_chdl](#) (void *varg)
- EXPORTCH int [MC_ResumeAgency_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t](#) [MC_RetrieveAgent_chdl](#) (void *varg)
- EXPORTCH char * [MC_RetrieveAgentCode_chdl](#) (void *varg)
- EXPORTCH int [MC_SaveData_chdl](#) (void *varg)
- EXPORTCH int [MC_SearchForService_chdl](#) (void *varg)
- EXPORTCH int [MC_SemaphorePost_chdl](#) (void *varg)
- EXPORTCH int [MC_SemaphoreWait_chdl](#) (void *varg)
- EXPORTCH int [MC_SendAgentMigrationMessage_chdl](#) (void *varg)
- EXPORTCH int [MC_SendAgentMigrationMessageFile_chdl](#) (void *varg)
- EXPORTCH int [MC_SendSteerCommand_chdl](#) (void *varg)
- EXPORTCH int [MC_SetAgentStatus_chdl](#) (void *varg)
- EXPORTCH int [MC_SetDefaultAgentStatus_chdl](#) (void *varg)
- EXPORTCH int [MC_SyncDelete_chdl](#) (void *varg)
- EXPORTCH int [MC_SyncInit_chdl](#) (void *varg)
- EXPORTCH int [MC_TerminateAgent_chdl](#) (void *varg)
- EXPORTCH int [MC_TerminateAgentWG_chdl](#) (void *varg)

Variables

- [mc_platform_p g_mc_platform](#)

7.54.1 Function Documentation

7.54.1.1 EXPORTMC int MC_AclAddReceiver (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 337 of file libmc.c.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_New()`, `fipa_agent_identifier_set_New()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_url_New()`, `fipa_url_sequence_New()`, `fipa_agent_identifier_s::name`, `fipa_url_sequence_s::num`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::receiver`, `fipa_acl_message_s::receiver_num`, `fipa_url_s::str`, `strdup`, and `fipa_url_sequence_s::urls`.

Referenced by `MC_AclAddReceiver_chdl()`.

7.54.1.2 EXPORTCH int MC_AclAddReceiver_chdl (void * *varg*)

Definition at line 3261 of file libmc.c.

References `MC_AclAddReceiver()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.3 EXPORTMC int MC_AclAddReplyTo (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 373 of file libmc.c.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_New()`, `fipa_agent_identifier_set_New()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_url_New()`, `fipa_url_sequence_New()`, `fipa_agent_identifier_s::name`, `fipa_url_sequence_s::num`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::reply_to`, `fipa_url_s::str`, `strdup`, and `fipa_url_sequence_s::urls`.

Referenced by `MC_AclAddReplyTo_chdl()`.

7.54.1.4 EXPORTCH int MC_AclAddReplyTo_chdl (void * *varg*)

Definition at line 3281 of file libmc.c.

References `MC_AclAddReplyTo()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.5 EXPORTMC int MC_AclDestroy (struct fipa_acl_message_s * *message*)

Destroy a FIPA ACL message.

Parameters

message The ACL message to destroy

Returns

0 on success, error code on failure.

Definition at line 84 of file libmc.c.

References `fipa_acl_message_Destroy()`.

Referenced by `MC_AclDestroy_chdl()`.

7.54.1.6 EXPORTMC int MC_AclDestroy_chdl (void * *varg*)

Definition at line 2993 of file libmc.c.

References `MC_AclDestroy()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.7 EXPORTMC const char* MC_AclGetContent (struct fipa_acl_message_s * *acl*)

Definition at line 265 of file libmc.c.

References `fipa_string_s::content`, and `fipa_acl_message_s::content`.

Referenced by `MC_AclGetContent_chdl()`.

7.54.1.8 EXPORTCH char* MC_AclGetContent_chdl (void * *varg*)

Definition at line 3172 of file libmc.c.

References `MC_AclGetContent()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.9 EXPORTMC char* MC_AclGetConversationID (struct fipa_acl_message_s * *acl*)

Definition at line 240 of file libmc.c.

References fipa_string_s::content, fipa_expression_s::content, fipa_acl_message_s::conversation_id, and fipa_expression_s::content_u::string.

Referenced by MC_AclGetConversationID_chdl().

7.54.1.10 EXPORTCH char* MC_AclGetConversationID_chdl (void * *varg*)

Definition at line 3123 of file libmc.c.

References MC_AclGetConversationID().

Referenced by agent_ChScriptInitVar().

7.54.1.11 EXPORTMC enum fipa_performative_e MC_AclGetPerformative (struct fipa_acl_message_s * *acl*)

Definition at line 246 of file libmc.c.

References fipa_acl_message_s::performative.

Referenced by MC_AclGetPerformative_chdl().

7.54.1.12 EXPORTCH int MC_AclGetPerformative_chdl (void * *varg*)

Definition at line 3138 of file libmc.c.

References MC_AclGetPerformative().

Referenced by agent_ChScriptInitVar().

7.54.1.13 EXPORTMC enum fipa_protocol_e MC_AclGetProtocol (struct fipa_acl_message_s * *acl*)

Definition at line 234 of file libmc.c.

References fipa_acl_message_s::performative.

Referenced by MC_AclGetProtocol_chdl().

7.54.1.14 EXPORTCH int MC_AclGetProtocol_chdl (void * *varg*)

Definition at line 3108 of file libmc.c.

References MC_AclGetProtocol().

Referenced by agent_ChScriptInitVar().

7.54.1.15 EXPORTMC int MC_AclGetSender (struct fipa_acl_message_s * *acl*, char ** *name*, char ** *address*)

Definition at line 252 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_s::name, fipa_acl_message_s::sender, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclGetSender_chdl().

7.54.1.16 EXPORTCH int MC_AclGetSender_chdl (void * *varg*)

Definition at line 3153 of file libmc.c.

References MC_AclGetSender().

Referenced by agent_ChScriptInitVar().

7.54.1.17 EXPORTMC fipa_acl_message_t* MC_AclNew (void) [read]

Allocate a new ACL Message.

Returns

A newly allocated and empty ACL message.

Definition at line 90 of file libmc.c.

References fipa_acl_message_New().

Referenced by MC_AclNew_chdl().

7.54.1.18 EXPORTMC void* MC_AclNew_chdl (void * *varg*)

Definition at line 3008 of file libmc.c.

References MC_AclNew().

Referenced by agent_ChScriptInitVar().

7.54.1.19 EXPORTMC int MC_AclPost (MCAgent_t *agent*, struct fipa_acl_message_s * *message*)

Post ACL message to agent.

Parameters

agent The agent to post the message to

message The message to post

Returns

0 if successful, or error_code_t type.

Definition at line 95 of file libmc.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), and agent_s::mailbox.

Referenced by MC_AclPost_chdl(), and MC_AclSend().

7.54.1.20 EXPORTMC int MC_AclPost_chdl (void * *varg*)

Definition at line 3016 of file libmc.c.

References MC_AclPost().

Referenced by agent_ChScriptInitVar().

7.54.1.21 EXPORTMC fipa_acl_message_t* MC_AclReply (struct fipa_acl_message_s * *acl_message*) [read]

Reply to an ACL message.

Parameters

acl_message The incoming acl message to reply to

Returns

A newly allocated ACL message

Note

This function simply generates a new ACL message with the 'receiver' field automatically set to the 'sender' field of the incoming message.

Definition at line 104 of file libmc.c.

References fipa_Reply().

Referenced by MC_AclReply_chdl().

7.54.1.22 EXPORTCH void* MC_AclReply_chdl (void * *varg*)

Definition at line 3034 of file libmc.c.

References MC_AclReply().

Referenced by agent_ChScriptInitVar().

7.54.1.23 EXPORTMC fipa_acl_message_t* MC_AclRetrieve (MCAgent_t *agent*) [read]

Retrieve an ACL message.

Parameters

agent Agent to retrieve message from.

Returns

an ACL message struct on success or NULL on failure

Definition at line 110 of file libmc.c.

References ListPop(), ListWRLock(), ListWRUnlock(), and agent_s::mailbox.

Referenced by MC_AclRetrieve_chdl().

7.54.1.24 EXPORTCH void* MC_AclRetrieve_chdl (void * *varg*)

Definition at line 3050 of file libmc.c.

References MC_AclRetrieve().

Referenced by agent_ChScriptInitVar().

7.54.1.25 EXPORTMC int MC_AclSend (MCAgency_t *attr*, struct fipa_acl_message_s * *acl*)

Send a composed ACL Message.

Parameters

attr An initialized and running MobileC agency

acl An allocated and fully composed ACL message.

Returns

0 if successful, error code on failure.

Definition at line 120 of file libmc.c.

References fipa_agent_identifier_s::addresses, mtp_http_s::content, mtp_http_content_s::content_type, mtp_http_content_s::data, dynstring_Destroy(), FIPA_ACL, fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_Compose(), mtp_http_s::host, http_to_hostport(), MC_AclPost(), MC_FindAgentByName(), agency_s::mc_platform, dynstring_s::message, mtp_http_s::message_parts, message_Send(), message_s::message_type, mtp_http_CreateMessage(), mtp_http_Destroy(), mtp_http_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_agent_identifier_set_s::num, port, mc_platform_s::private_key, fipa_acl_message_s::receiver, fipa_url_s::str, strdup, message_s::target, mtp_http_s::target, and fipa_url_sequence_s::urls.

Referenced by MC_AclSend_chdl().

7.54.1.26 EXPORTCH int MC_AclSend_chdl (void * *varg*)

Definition at line 3066 of file libmc.c.

References CHECK_NULL, MC_AclSend(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.1.27 EXPORTMC int MC_AclSetContent (fipa_acl_message_t * *acl*, const char * *content*)

Definition at line 408 of file libmc.c.

References fipa_string_s::content, fipa_acl_message_s::content, fipa_string_Destroy(), fipa_string_New(), and strdup.

Referenced by MC_AclSetContent_chdl().

7.54.1.28 EXPORTCH int MC_AclSetContent_chdl (void * *varg*)

Definition at line 3301 of file libmc.c.

References fipa_acl_message_s::content, and MC_AclSetContent().

Referenced by agent_ChScriptInitVar().

7.54.1.29 EXPORTMC int MC_AclSetConversationID (fipa_acl_message_t * *acl*, const char * *id*)

Definition at line 287 of file libmc.c.

References fipa_string_s::content, fipa_expression_s::content, fipa_acl_message_s::conversation_id, FIPA_EXPR_STRING, fipa_expression_New(), fipa_string_New(), strdup, fipa_expression_s::content_u::string, and fipa_expression_s::type.

Referenced by MC_AclSetConversationID_chdl().

7.54.1.30 EXPORTCH int MC_AclSetConversationID_chdl (void * *varg*)

Definition at line 3205 of file libmc.c.

References MC_AclSetConversationID().

Referenced by agent_ChScriptInitVar().

7.54.1.31 EXPORTMC int MC_AclSetPerformative (fipa_acl_message_t * *acl*, enum fipa_performative_e *performative*)

Definition at line 306 of file libmc.c.

References fipa_acl_message_s::performative.

Referenced by MC_AclSetPerformative_chdl().

7.54.1.32 EXPORTCH int MC_AclSetPerformative_chdl (void * *varg*)

Definition at line 3223 of file libmc.c.

References MC_AclSetPerformative(), and fipa_acl_message_s::performative.

Referenced by agent_ChScriptInitVar().

7.54.1.33 EXPORTMC int MC_AclSetProtocol (fipa_acl_message_t * *acl*, enum fipa_protocol_e *protocol*)

Definition at line 271 of file libmc.c.

References FIPA_PROTOCOL_END, FIPA_PROTOCOL_ERROR, and fipa_acl_message_s::protocol.

Referenced by MC_AclSetProtocol_chdl().

7.54.1.34 EXPORTCH int MC_AclSetProtocol_chdl (void * *varg*)

Definition at line 3187 of file libmc.c.

References MC_AclSetProtocol(), and fipa_acl_message_s::protocol.

Referenced by agent_ChScriptInitVar().

7.54.1.35 EXPORTMC int MC_AclSetSender (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 314 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_Destroy(), fipa_agent_identifier_New(), fipa_url_New(), fipa_url_sequence_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_acl_message_s::sender, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclSetSender_chdl().

7.54.1.36 EXPORTCH int MC_AclSetSender_chdl (void * *varg*)

Definition at line 3241 of file libmc.c.

References MC_AclSetSender().

Referenced by agent_ChScriptInitVar().

7.54.1.37 EXPORTMC fipa_acl_message_t* MC_AclWaitRetrieve (MCAgent_t *agent*) [read]

Wait for and retrieve an ACL message.

Parameters

agent Agent to retrieve message from.

Returns

an ACL message struct on success or NULL on failure

Definition at line 218 of file libmc.c.

References ListPop(), ListWRLock(), ListWRUnlock(), ListWRWait(), and agent_s::mailbox.

Referenced by MC_AclWaitRetrieve_chdl().

7.54.1.38 EXPORTCH void* MC_AclWaitRetrieve_chdl (void * *varg*)

Definition at line 3090 of file libmc.c.

References MC_AclWaitRetrieve().

Referenced by agent_ChScriptInitVar().

7.54.1.39 EXPORTMC int MC_AddAgent (MCAgency_t *attr*, MCAgent_t *agent*)

Add an agent to the agency 'attr'.

Parameters

attr a MobileC agency

agent An initialized MobileC agent

Returns

0 if successful, or error_code_t type

Definition at line 425 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `COND_SIGNAL`, `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, `agency_s::mc_platform`, `agent_s::mc_platform`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `handler_COMPOSE_SEND()`, and `MC_AddAgent_chdl()`.

7.54.1.40 EXPORTCH int MC_AddAgent_chdl (void * *varg*)

Definition at line 3321 of file libmc.c.

References `CHECK_NULL`, `MC_AddAgent()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.41 EXPORTMC int MC_AddAgentInitCallback (MCAgency_t *agency*, MC_AgentInitCallbackFunc_t *function*, void * *user_data*)

Add an agent initialization callback function.

Parameters

agency a MobileC agency

function The callback function to add. This callback function will be called after an interpreter is initialized for an agent but before the agent is executed.

user_data A pointer to any user data that should be made available to the callback function

Returns

0 if successful, or `error_code_t` type

Definition at line 474 of file libmc.c.

References `agency_s::agentInitCallback`, and `agency_s::agentInitUserData`.

7.54.1.42 EXPORTMC int MC_AddStationaryAgent (MCAgency_t *agency*, void *(*)(stationary_agent_info_t *) *agent_thread*, const char * *name*, void * *agent_args*)

Add a stationary agent to the agency.

Parameters

agency a MobileC agency

agent_thread The binary-space agent function

name The new agent's name

agent_args user arguments to pass to the agent

Returns

0 if successful, or `error_code_t` type

Definition at line 442 of file libmc.c.

References stationary_agent_info_s::agency, stationary_agent_info_s::agent, agent_NewBinary(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, stationary_agent_info_s::args, stationary_agent_info_s::attr, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, agent_s::name, strdup, stationary_agent_info_s::thread, and THREAD_CREATE.

7.54.1.43 EXPORTMC int MC_AgentAddTask (MCAgent_t *agent*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*)

Add a new task to an already existing agent.

Parameters

agent An existing agent

code The C code to use in the new task

return_var_name The name of the the return variable, or NULL if there is no return variable.

server The server to perform the task on.

persistent Whether or not the task is persistent. '1' indicates persistent, and '0' indicates not-persistent (the default)

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 499 of file libmc.c.

References agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_task_New(), agent_task_s::code_id, agent_s::datastate, agent_datastate_s::number_of_tasks, agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, and agent_task_s::var_name.

Referenced by MC_AgentAddTask_chdl(), and MC_AgentAddTaskFromFile().

7.54.1.44 EXPORTCH int MC_AgentAddTask_chdl (void * *varg*)

Definition at line 3345 of file libmc.c.

References MC_AgentAddTask().

Referenced by agent_ChScriptInitVar().

7.54.1.45 EXPORTMC int MC_AgentAddTaskFromFile (MCAgent_t *agent*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*)

Add a new task to an already existing agent.

Parameters

agent An existing agent

filename The C code to use in the new task

return_var_name The name of the the return variable, or NULL if there is no return variable.

server The server to perform the task on.

persistent Whether or not the task is persistent. '1' indicates persistent, and '0' indicates not-persistent (the default)

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 572 of file libmc.c.

References MC_AgentAddTask().

7.54.1.46 EXPORTMC int MC_AgentAttachFile (MCAgent_t *agent*, const char * *name*, const char * *filepath*)

Attach a file to the agent's current task.

Parameters

agent An existing agent

name The name to give the file

filepath The absolute path of the file

Returns

Returns 0 on success, or an error code on failure.

Definition at line 608 of file libmc.c.

References agent_file_data_InitializeFromFilename(), agent_task_s::agent_file_list, agent_s::datastate, ListAdd(), ListWRLock(), ListWRUnlock(), agent_file_data_s::name, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_AgentAttachFile_chdl().

7.54.1.47 EXPORTCH int MC_AgentAttachFile_chdl (void * *varg*)

Definition at line 3379 of file libmc.c.

References MC_AgentAttachFile().

Referenced by agent_ChScriptInitVar().

7.54.1.48 EXPORTMC MCAgency_t MC_AgentInfo_GetAgency (stationary_agent_info_t * *stationary_agent_info*)

Get the host Mobile-C agency handle from a "stationary_agent_info_t" data structure.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 484 of file libmc.c.

References stationary_agent_info_s::agency.

**7.54.1.49 EXPORTMC MCAgent_t MC_AgentInfo_GetAgent (stationary_agent_info_t *
stationary_agent_info)**

Retrieve an agent handle from the stationary agent info from within a stationary agent.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid agent handle or NULL on failure.

7.54.2 Examples

The following example demonstrates usage of [MC_AgentInfo_GetAgent\(\)](#)

Definition at line 489 of file libmc.c.

References stationary_agent_info_s::agent.

**7.54.2.1 EXPORTMC void* MC_AgentInfo_GetAgentArgs (stationary_agent_info_t *
stationary_agent_info)**

Retrieve the agent argument supplied as the "agent_args" parameter in the [MC_AddStationaryAgent\(\)](#) function.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid pointer or NULL on failure.

Definition at line 494 of file libmc.c.

References stationary_agent_info_s::args.

7.54.2.2 EXPORTMC int MC_AgentListFiles (MCAgent_t agent, int task_num, char * names,
int * num_files)**

Get a list of an agent's attached files.

Parameters

agent An existing agent

names A pointer two an unallocated two dimentional character array. The function will allocated any necessary memory for storing the names. If names are allocated, the array must be freed by the user.

num_files A pointer to an integer which will be filled with the number of filenames

Returns

returns 0 on success, -1 on failure.

Definition at line 630 of file libmc.c.

References `agent_task_s::agent_file_list`, `agent_s::datastate`, `ListGetSize()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, `agent_file_data_s::name`, `agent_datastate_s::number_of_tasks`, `strdup`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentListFiles_chdl()`.

7.54.2.3 EXPORTCH int MC_AgentListFiles_chdl (void * *varg*)

Definition at line 3403 of file libmc.c.

References `MC_AgentListFiles()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.2.4 EXPORTMC int MC_AgentProcessingBegin (MCAgency_t *attr*)

Begin a series of agent functions.

Parameters

agency A handle to a running agency

Returns

returns 0 on success, -1 on failure.

Definition at line 663 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListWRLock()`, and `agency_s::mc_platform`.

7.54.2.5 EXPORTMC int MC_AgentProcessingEnd (MCAgency_t *attr*)

Definition at line 671 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListWRUnlock()`, and `agency_s::mc_platform`.

7.54.2.6 EXPORTMC int MC_AgentRetrieveFile (MCAgent_t *agent*, int *task_num*, const char * *name*, const char * *save_path*)

Saves an agent's attached file to the filesystem.

Parameters

name The name of the agent's stored file

save_path The location to save the file (including the filename)

Returns

Returns 0 on success, -1 on failure.

Definition at line 678 of file libmc.c.

References agent_file_data_CmpName(), agent_task_s::agent_file_list, base64_decode_block(), base64_init_decodestate(), agent_file_data_s::data, agent_s::datastate, ListRDLock(), ListRDUnlock(), ListSearchCB(), agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

Referenced by MC_AgentRetrieveFile_chdl().

7.54.2.7 EXPORTCH int MC_AgentRetrieveFile_chdl (void * *varg*)

Definition at line 3430 of file libmc.c.

References MC_AgentRetrieveFile().

Referenced by agent_ChScriptInitVar().

7.54.2.8 EXPORTMC int MC_AgentReturnArrayDim (MCAgent_t *agent*, int *task_num*)

Get the dimension of an agent's return data, if it is an array.

Parameters

agent A return agent

task task to retrieve the agent return data size from

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 748 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

7.54.2.9 EXPORTMC int MC_AgentReturnArrayExtent (MCAgent_t *agent*, int *task_num*, int *index*)

Get the extent of a dimension of an agent's return data, if it is an array.

Parameters

agent A return agent

task task to retrieve the agent return data size from

index The dimension index to get the extent

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 724 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

7.54.2.10 EXPORTMC int MC_AgentReturnArrayNum (MCAgent_t *agent*, int *task_num*)

Get the total number of elements of the agent return data.

Parameters

agent A return agent

task task to retrieve the agent return data size from

index The dimension index to get the extent

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 766 of file libmc.c.

References `agent_task_s::agent_return_data`, `interpreter_variable_data_s::array_dim`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.54.2.11 EXPORTMC const void* MC_AgentReturnDataGetSymbolAddr (MCAgent_t *agent*, int *task_num*)

Get a pointer to the agent's return data.

Parameters

agent A return agent

task task to retrieve the agent return data from

Returns

Returns a pointer to the beginning of the task's return data on success. Returns NULL on failure.

Definition at line 796 of file libmc.c.

References `agent_task_s::agent_return_data`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.54.2.12 EXPORTMC size_t MC_AgentReturnDataSize (MCAgent_t *agent*, int *task_num*)

Get the size of an agent's return data type.

Parameters

agent A return agent

task task to retrieve the agent return data type size from

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 813 of file libmc.c.

References `agent_task_s::agent_return_data`, `CH_DATATYPE_SIZE`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

7.54.2.13 EXPORTMC int MC_AgentReturnDataType (MCAgent_t *agent*, int *task_num*)

Get the type of an agent's return data.

Parameters

agent A return agent

task task to retrieve the agent return data type from

Returns

Returns a positive integer on success or -1 on failure. The return type is of type ChType_t, defined in ch.h

Definition at line 836 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::data_type, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

7.54.2.14 EXPORTMC int MC_AgentReturnIsArray (MCAgent_t *agent*, int *task_num*)

Check to see whether or not an agent's return data is an array.

Parameters

agent A return agent

task task to check to see if the return data is an array.

Returns

Returns 1 if the return variable is an array, 0 if it is not an array, or -1 on failure.

Definition at line 846 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

7.54.2.15 EXPORTMC const void* MC_AgentVariableRetrieve (MCAgent_t *agent*, const char * *var_name*, int *task_num*)

Retrieve a pointer to a previously saved variable.

Parameters

agent A MobileC agent.

var_name The name of the saved variable that has previously been saved.

task_num The previous completed task from which to retrieve the saved variable.

Returns

A pointer to the data on success or NULL on failure.

7.54.3 Examples

The following example demonstrates usage of [MC_AgentVariableRetrieve\(\)](#) from agent space.

Definition at line 867 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `interpreter_variable_data_CmpName()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableRetrieve_chdl()`.

7.54.3.1 EXPORTCH const void* MC_AgentVariableRetrieve_chdl (void * *varg*)

Definition at line 3458 of file libmc.c.

References `MC_AgentVariableRetrieve()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.3.2 EXPORTMC int MC_AgentVariableRetrieveInfo (MCAgent_t *agent*, const char * *var_name*, int *task_num*, const void ** *data*, int * *dim*, const int ** *extent*)

Retrieve a info about a previously saved variable.

Parameters

agent A MobileC agent.

var_name The name of the saved variable that has previously been saved.

task_num The previous completed task from which to retrieve the saved variable.

data (Output) The Variable Data

dim (Output) The dimension of the data array

extent (Output) The extents of the output array

Returns

Error code.

Definition at line 888 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `interpreter_variable_data_CmpName()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

7.54.3.3 EXPORTMC int MC_AgentVariableSave (MCAgent_t *agent*, const char * *var_name*)

Mark an agent variable for saving.

Parameters

agent A MobileC agent.

var_name The name of the variable to mark for saving.

Returns

0 on success, non-zero on failure.

See also

test1.xml

7.54.4 Examples

See agent_saved_variables_example/test1.xml for an example of usage of this api function.

7.54.5 Examples

The following example demonstrates usage of [MC_AgentVariableSave\(\)](#) from agent space.

Definition at line 912 of file libmc.c.

References agent_s::datastate, MC_ERR_MEMORY, agent_task_s::num_saved_variables, agent_task_s::saved_variables, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_AgentVariableSave_chdl().

7.54.5.1 EXPORTCH int MC_AgentVariableSave_chdl (void * *varg*)

Definition at line 3482 of file libmc.c.

References MC_AgentVariableSave().

Referenced by agent_ChScriptInitVar().

7.54.5.2 EXPORTMC int MC_Barrier (MCAgency_t *attr*, int *id*)

Definition at line 933 of file libmc.c.

References barrier_node_CmpID(), mc_platform_s::barrier_queue, barrier_node_s::cond, COND_BROADCAST, COND_WAIT, ListRDLock(), ListRDUnlock(), ListSearchCB(), barrier_node_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, barrier_node_s::num_registered, and barrier_node_s::num_waiting.

Referenced by MC_Barrier_chdl().

7.54.5.3 EXPORTCH int MC_Barrier_chdl (void * *varg*)

Definition at line 3534 of file libmc.c.

References CHECK_NULL, MC_Barrier(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.5.4 EXPORTMC int MC_BarrierDelete (MCAgency_t *attr*, int *id*)

Find and delete an initialized MobileC Barrier.

Parameters

- attr* A running MobileC agency
- id* The id of the barrier node to delete

Returns

returns 0 on success, error if the node is not found or other failure.

Definition at line 982 of file libmc.c.

References barrier_node_CmpID(), barrier_node_Destroy(), mc_platform_s::barrier_queue, ListDeleteCB(), ListWRLock(), ListWRUnlock(), and agency_s::mc_platform.

Referenced by MC_BarrierDelete_chdl().

7.54.5.5 EXPORTCH int MC_BarrierDelete_chdl (void * *varg*)

Definition at line 3557 of file libmc.c.

References CHECK_NULL, MC_BarrierDelete(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.5.6 EXPORTMC int MC_BarrierInit (MCAgency_t *attr*, int *id*, int *num_procs*)

Initialize a MobileC Barrier.

Parameters

- attr* A running MobileC agency
- id* The requested barrier id
- num_procs* The number of agents/threads/processes that will wait on the barrier

Returns

The allocated barrier id. May differ from the requested id if it is already in use.

7.54.6 Examples

The following example demonstrates an agent which sets up an MC_Barrier.

Definition at line 961 of file libmc.c.

References barrier_node_CmpID(), barrier_node_Initialize(), mc_platform_s::barrier_queue, ListAdd(), ListRDLock(), ListRDUnlock(), ListSearchCB(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, and MC_SUCCESS.

Referenced by MC_BarrierInit_chdl().

7.54.6.1 EXPORTCH int MC_BarrierInit_chdl (void * *varg*)

Definition at line 3580 of file libmc.c.

References CHECK_NULL, MC_BarrierInit(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.6.2 EXPORTMC int MC_CallAgentFunc (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, int *numArgs*, ...)

Use custom ChOptions_t type for internal Ch interpreter.

Parameters

attr A running MobileC agency

options Initialized Ch options structure

Returns

0 on success, error_code_t type on failure Calls a function defined in an agent

Parameters

agent An initialized and executed MobileC agent

funcName The name of the function to call

returnVal The agent function's return value

numArgs The number of arguments supplied to the agent function

... A variable argument list to be supplied to the agent function

Returns

0 if successful, error_code_t type on failure

7.54.7 Example

Definition at line 1000 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.54.7.1 EXPORTCH int MC_CallAgentFunc_chdl (void * *varg*)

Definition at line 3504 of file libmc.c.

References MC_CallAgentFuncVar().

Referenced by agent_ChScriptInitVar().

7.54.7.2 EXPORTMC int MC_CallAgentFuncArg (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, void * *arg*)

Calls a function defined in an agent.

Parameters

- agent* An initialized and executed MobileC agent
- funcName* The name of the function to call
- returnVal* The agent function's return value
- arg* The agent functions argument

Note

The agent function must be of the form 'void* func(void* arg);'

Returns

0 if successful, error_code_t type on failure

7.54.8 Example

Definition at line 1021 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.54.8.1 EXPORTMC int MC_CallAgentFuncV (MCAgent_t *agent*, const char **funcName*, void **returnVal*, va_list *ap*)

Calls a function defined in an agent.

Parameters

- agent* An initialized and executed MobileC agent
- funcName* The name of the function to call
- returnVal* The agent function's return value
- ap* A variable argument list

Returns

0 if successful, error_code_t type on failure

Definition at line 1040 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.54.8.2 EXPORTMC int MC_CallAgentFuncVar (MCAgent_t *agent*, const char **funcName*, void **returnVal*, ChVaList_t *varg*)

Definition at line 1060 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

Referenced by MC_CallAgentFunc_chdl().

7.54.8.3 EXPORTMC MCAgent_t MC_ComposeAgent (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Definition at line 1100 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

7.54.8.4 EXPORTCH MCAgent_t MC_ComposeAgent_chdl (void * *varg*)

Definition at line 3628 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.54.8.5 EXPORTMC MCAgent_t MC_ComposeAgentFromFile (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Definition at line 1226 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by handler_COMPOSE_SEND().

7.54.8.6 EXPORTCH MCAgent_t MC_ComposeAgentFromFile_chdl (void * *varg*)

Definition at line 3712 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.54.8.7 EXPORTMC MCAgent_t MC_ComposeAgentFromFileS (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated. Please use the MC_ComposeAgentFromFileWithWorkgroup function instead.

Definition at line 1248 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

7.54.8.8 EXPORTMC MCAgent_t MC_ComposeAgentFromFileWithWorkgroup (const char * name, const char * home, const char * owner, const char *filename, const char * return_var_name, const char *server, int persistent, const char * workgroup_code)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file
name The desired name of the new agent.
home The home of the new agent.
owner The owner of the new agent.
code The agent code
return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.
server The target destination of the agent.
workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.
persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Definition at line 1273 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentFromFile(), MC_ComposeAgentFromFile_chdl(), MC_ComposeAgentFromFileS(), and MC_ComposeAgentFromFileWithWorkgroup_chdl().

7.54.8.9 EXPORTCH MCAgent_t MC_ComposeAgentFromFileWithWorkgroup_chdl (void *varg)

Definition at line 3753 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.54.8.10 EXPORTMC MCAgent_t MC_ComposeAgentS (const char * name, const char * home, const char * owner, const char * code, const char * return_var_name, const char * server, int persistent, const char * workgroup_code)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.
home The home of the new agent.
owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated. Please use the MC_ComposeAgentWithWorkgroup function instead.

Definition at line 1123 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentWithWorkgroup_chdl().

**7.54.8.11 EXPORTMC MCAgent_t MC_ComposeAgentWithWorkgroup (const char *
name, const char * home, const char * owner, const char * code, const char *
return_var_name, const char * server, int persistent, const char * workgroup_code)**

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated

Definition at line 1149 of file libmc.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_datastate_New(), agent_New(), agent_s::agent_status, agent_task_New(), agent_s::agent_type, agent_s::datastate, agent_s::home, MC_LOCAL_AGENT, MC_WAIT_MESSGSEND, agent_s::name, agent_datastate_s::number_of_tasks, agent_s::orphan, agent_s::owner, agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, agent_task_s::var_name, and agent_s::wg_code.

Referenced by MC_ComposeAgent(), MC_ComposeAgent_chdl(), MC_ComposeAgentFromFileWithWorkgroup(), and MC_ComposeAgentS().

7.54.8.12 EXPORTCH MCAgent_t MC_ComposeAgentWithWorkgroup_chdl (void * *varg*)

Definition at line 3669 of file libmc.c.

References MC_ComposeAgentS().

Referenced by agent_ChScriptInitVar().

7.54.8.13 EXPORTMC int MC_CondBroadcast (MCAgency_t *attr*, int *id*)

Wakes up all agents/threads waiting on a condition variable.

Parameters

attr A MobileC agency

id Synchronization variable id to broadcast to

See also

[MC_SyncInit\(\)](#), [MC_CondSignal\(\)](#)

Returns

0 on success, error_code_t type on failure

Definition at line 1319 of file libmc.c.

References syncListNode_s::cond, COND_BROADCAST, ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondBroadcast_chdl().

7.54.8.14 EXPORTCH int MC_CondBroadcast_chdl (void * *varg*)

Definition at line 3605 of file libmc.c.

References CHECK_NULL, MC_CondBroadcast(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.8.15 EXPORTMC int MC_CondReset (MCAgency_t *attr*, int *id*)

Reset a previously signalled MobileC condition variable.

Parameters

- attr* A MobileC Agency
id The synchronization variable id to reset

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

Definition at line 1386 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondReset_chdl().

7.54.8.16 EXPORTCH int MC_CondReset_chdl (void * *varg*)

Definition at line 3819 of file libmc.c.

References CHECK_NULL, MC_CondReset(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.8.17 EXPORTMC int MC_CondSignal (MCAgency_t *attr*, int *id*)

Wakes up at least one thread waiting on a condition variable.

Parameters

- attr* A MobileC agency
id synchronization variable id

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

7.54.9 Example

The following example demonstrates the agent-space version of the function, which is nearly identical to the binary space api function.

Definition at line 1339 of file libmc.c.

References syncListNode_s::cond, COND_SIGNAL, ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondSignal_chdl().

7.54.9.1 EXPORTCH int MC_CondSignal_chdl (void * *varg*)

Definition at line 3796 of file libmc.c.

References CHECK_NULL, MC_CondSignal(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.9.2 EXPORTMC int MC_CondWait (MCAgency_t *attr*, int *id*)

Wait on a MobileC synchronization variable.

Parameters

attr A MobileC agency

id a synchronization variable id

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

7.54.10 Example

The following example demonstrates the agent-space version of this function.

Definition at line 1359 of file libmc.c.

References syncListNode_s::cond, COND_WAIT, ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondWait_chdl().

7.54.10.1 EXPORTCH int MC_CondWait_chdl (void * *varg*)

Definition at line 3842 of file libmc.c.

References CHECK_NULL, MC_CondWait(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.10.2 EXPORTMC int MC_CopyAgent (MCAgent_t * *agent_out*, const MCAgent_t *agent_in*)

Performs a deep-copy of an agent structure.

Parameters

agent_out A pointer to the agent to copy to.

agent_in The agent to copy

Returns

0 on success, error_code_t type on failure.

Definition at line 1409 of file libmc.c.

References agent_Copy(), and MC_SUCCESS.

7.54.10.3 EXPORTMC int MC_DeleteAgent (MCAgent_t *agent*)

Stop and remove an agent.

Parameters

agent An agent in any state (running, waiting, etc)

Returns

0 on success, error_code_t type on failure

Definition at line 1416 of file libmc.c.

References agent_CmpName(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, CHECK_NULL, ListDeleteCB(), ListWRLock(), ListWRUnlock(), MC_ERR_INVALID, MC_ERR_INVALID_ARGS, agent_s::mc_platform, MC_SUCCESS, MC_TerminateAgent(), agent_s::name, strdup, and agent_s::wg_code.

Referenced by MC_DeleteAgent_chdl().

7.54.10.4 EXPORTCH int MC_DeleteAgent_chdl (void * *varg*)

Definition at line 3864 of file libmc.c.

References MC_DeleteAgent(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

7.54.10.5 EXPORTMC int MC_DeleteAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Stop and remove an agent in the same workgroup.

Parameters

calling_agent The calling agent

agent An agent in any state (running, waiting, etc)

Note

The agents must belong to the same workgroup.

Returns

0 on success, error_code_t type on failure

Definition at line 1446 of file libmc.c.

References `agent_CmpName()`, `agent_Destroy()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `CHECK_NULL`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_INVALID`, `MC_ERR_INVALID_ARGS`, `agent_s::mc_platform`, `MC_SUCCESS`, `MC_TerminateAgentWG()`, `agent_s::name`, `strdup`, and `agent_s::wg_code`.

Referenced by `MC_DeleteAgentWG_chdl()`.

7.54.10.6 EXPORTCH int MC_DeleteAgentWG_chdl (void * *varg*)

Definition at line 3884 of file libmc.c.

References `MC_DeleteAgentWG()`, `MC_ERR_NOT_FOUND`, and `MC_FindAgentByName()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.10.7 EXPORTMC int MC_DeregisterService (MCAgency_t *agency*, int *agentID*, const char * *serviceName*)

Definition at line 1503 of file libmc.c.

References `mc_platform_s::df`, `df_AddRequest()`, `df_request_list_node_New()`, and `agency_s::mc_platform`.

Referenced by `MC_DeregisterService_chdl()`.

7.54.10.8 EXPORTCH int MC_DeregisterService_chdl (void * *varg*)

Definition at line 3933 of file libmc.c.

References `CHECK_NULL`, `MC_DeregisterService()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

7.54.10.9 EXPORTMC int MC_DestroyServiceSearchResult (char ** *agentName*, char ** *serviceName*, int * *agentID*, int *numResult*)

Free memory allocated by a Service Search operation.

Parameters

agentName agent names returned by a search operation.

serviceName service names return by a search operation.

agentID list of agent id's returned by a search operation.

numResult The number of hits returned by a search operation.

Returns

0 on success, error code on failure.

Definition at line 1483 of file libmc.c.

Referenced by `MC_DestroyServiceSearchResult_chdl()`.

7.54.10.10 EXPORTCH int MC_DestroyServiceSearchResult_chdl (void * *varg*)

Definition at line 3906 of file libmc.c.

References MC_DestroyServiceSearchResult().

Referenced by agent_ChScriptInitVar().

7.54.10.11 EXPORTMC int MC_End (MCAgency_t *attr*)

End an agency.

Parameters

attr A running agency

Returns

0 on success, error_code_t type on failure

7.54.11 Example

Definition at line 1532 of file libmc.c.

References mc_platform_s::acc, mc_platform_s::ams, buf, mc_platform_s::cmd_prompt, COND_BROADCAST, COND_SIGNAL, mc_platform_s::connection_queue, mc_platform_s::df, GET_THREAD_MODE, agency_s::hostName, ListWRLock(), ListWRUnlock(), agency_s::mc_platform, mc_platform_Destroy(), MC_THREAD_ACC, MC_THREAD_AMS, MC_THREAD_CP, MC_THREAD_DF, mc_platform_s::message_queue, MUTEX_LOCK, MUTEX_UNLOCK, agency_s::portno, mc_platform_s::quit, mc_platform_s::quit_cond, mc_platform_s::quit_lock, send, cmd_prompt_s::thread, THREAD_CANCEL, THREAD_JOIN, and agency_s::threads.

Referenced by MC_End_chdl().

7.54.11.1 EXPORTCH int MC_End_chdl (void * *varg*)

Definition at line 3960 of file libmc.c.

References CHECK_NULL, MC_End(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.11.2 EXPORTMC MCAgent_t MC_FindAgentByID (MCAgency_t *attr*, int *ID*)

Find an agent by its id.

Parameters

attr the agency to search

ID the id to search for

Returns

a valid agent on success, NULL on failure

Definition at line 1652 of file libmc.c.

References agent_CmpID(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListRD-Lock(), ListRDUnclock(), ListSearchCB(), and agency_s::mc_platform.

Referenced by MC_FindAgentByID_chdl().

7.54.11.3 EXPORTCH MCAgent_t MC_FindAgentByID_chdl (void * *varg*)

Definition at line 3977 of file libmc.c.

References CHECK_NULL, MC_FindAgentByID(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.11.4 EXPORTMC MCAgent_t MC_FindAgentByName (MCAgency_t *attr*, const char * *name*)

Find an agent by its name.

Parameters

attr a running agency

name name to search for

Returns

a valid agent on success or NULL on failure

7.54.12 Example

Definition at line 1631 of file libmc.c.

References agent_CmpName(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListRD-Lock(), ListRDUnclock(), ListSearchCB(), and agency_s::mc_platform.

Referenced by MC_AclSend(), MC_DeleteAgent_chdl(), MC_DeleteAgentWG_chdl(), MC_FindAgentByName_chdl(), MC_TerminateAgent_chdl(), and MC_TerminateAgentWG_chdl().

7.54.12.1 EXPORTCH MCAgent_t MC_FindAgentByName_chdl (void * *varg*)

Definition at line 4000 of file libmc.c.

References CHECK_NULL, MC_FindAgentByName(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.12.2 EXPORTMC time_t MC_GetAgentArrivalTime (MCAgent_t *agent*)

Definition at line 1678 of file libmc.c.

References agent_s::arrival_time.

Referenced by MC_GetAgentArrivalTime_chdl().

7.54.12.3 EXPORTCH time_t MC_GetAgentArrivalTime_chdl (void * *varg*)

Definition at line 4027 of file libmc.c.

References MC_GetAgentArrivalTime().

7.54.12.4 EXPORTMC void* MC_GetAgentExecEngine (MCAgent_t *agent*)

Retrieve an agent's Ch interpreter.

Parameters

agent a valid agent

Returns

a Ch interpreter of type 'ChInterp_t' on success, or NULL on failure.

Definition at line 1717 of file libmc.c.

References agent_s::agent_interp.

7.54.12.5 EXPORTMC int MC_GetAgentID (MCAgent_t *agent*)

Retrieve an agent's id.

Definition at line 1723 of file libmc.c.

References agent_s::id.

Referenced by MC_GetAgentID_chdl().

7.54.12.6 EXPORTCH int MC_GetAgentID_chdl (void * *varg*)

Definition at line 4047 of file libmc.c.

References MC_GetAgentID().

Referenced by agent_ChScriptInitVar().

7.54.12.7 EXPORTMC char* MC_GetAgentName (MCAgent_t *agent*)

Definition at line 1731 of file libmc.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by MC_GetAgentName_chdl().

7.54.12.8 EXPORTCH char* MC_GetAgentName_chdl (void * *varg*)

Definition at line 4063 of file libmc.c.

References MC_GetAgentName().

Referenced by agent_ChScriptInitVar().

7.54.12.9 EXPORTMC int MC_GetAgentNumTasks (MCAgent_t *agent*)

Retrive the number of tasks an agent has.

7.54.13 Example

Definition at line 1814 of file libmc.c.

References agent_s::datastate, and agent_datastate_s::number_of_tasks.

Referenced by MC_GetAgentNumTasks_chdl().

7.54.13.1 EXPORTCH int MC_GetAgentNumTasks_chdl (void * *varg*)

Definition at line 4079 of file libmc.c.

References MC_GetAgentNumTasks().

7.54.13.2 EXPORTMC int MC_GetAgentReturnData (MCAgent_t *agent*, int *task_num*, void ** *data*, int * *dim*, int ** *extent*)

Get an agent's return data.

Parameters

agent a valid agent

task_num the task for which to retrieve the return data. The task must already be completed.

data the return data. May be multi dimensional array.

dim the number of dimensions of the return array.

extent the extent of each one of the array dimensions.

7.54.14 Example

This file demonstrates the retrieval of agent return data from an agent

This is the agent which gets the data

Definition at line 1749 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, interpreter_variable_data_s::data_type, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

7.54.14.1 EXPORTMC int MC_GetAgents (MCAgency_t *attr*, MCAgent_t ** *agents*, int * *num_agents*, unsigned int *agent_status_flags*)

Get a list of agents that match a certain agent status.

Parameters

agency A handle to a running Mobile-C agency

agents The address of an uninitialized pointer to an agent. An array of agents will be allocated, which will need to be freed by the user.

num_agents A pointer to an integer. The integer will be filled with the number of agents allocated for the 'agents' variable.

agent_status_flags These contain flags of agent statuses. For instance, if a user wishes to retrieve all agents with either the status MC_WAIT_CH or MC_AGENT_NEUTRAL, they may use an agent_status_flag of ((1<<MC_WAIT_CH) | (1<<MC_AGENT_NEUTRAL)). All valid agent statuses are enumerated in the enumeration MC_AgentStatus_e, located in [libmc.h](#).

Definition at line 1830 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, ListRDLock(), ListRDUnlock(), ListSearch(), and agency_s::mc_platform.

7.54.14.2 EXPORTMC int MC_GetAgentStatus (MCAgent_t *agent*)

Get an agent's current status.

Returns

returns type 'enum MC_AgentStatus_e'

Definition at line 1693 of file libmc.c.

References agent_s::agent_status, agent_s::agent_status_lock, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_GetAgentStatus_chdl().

7.54.14.3 EXPORTCH int MC_GetAgentStatus_chdl (void * *varg*)

Definition at line 4095 of file libmc.c.

References MC_GetAgentStatus().

Referenced by agent_ChScriptInitVar().

7.54.14.4 EXPORTMC enum MC_AgentType_e MC_GetAgentType (MCAgent_t *agent*)

Get an agent's type.

Returns

returns type 'enum MC_AgentType_e'

Definition at line 1820 of file libmc.c.

References agent_s::agent_type.

7.54.14.5 EXPORTMC char* MC_GetAgentXMLString (MCAgent_t *agent*)

Get an agent's xml string.

Returns

a malloc'd character string containing the agent's xml code

Definition at line 1705 of file libmc.c.

References agent_s::datastate, mxmSaveAllocString(), and agent_datastate_s::xml_agent_root.

Referenced by MC_GetAgentXMLString_chdl().

7.54.14.6 EXPORTCH char* MC_GetAgentXMLString_chdl (void * *varg*)

Definition at line 4111 of file libmc.c.

References MC_GetAgentXMLString().

Referenced by agent_ChScriptInitVar().

7.54.14.7 EXPORTMC int MC_GetAllAgents (MCAgency_t *attr*, MCAgent_t ** *agents*, int * *num_agents*)

Get all of the agents on an agency.

Parameters

agency A handle to a running Mobile-C agency

agents The address of an uninitialized pointer to an agent. An array of agents will be allocated, which will need to be freed by the user.

num_agents A pointer to an integer. The integer will be filled with the number of agents allocated for the 'agents' variable.

Definition at line 1876 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRDLock(), ListRDUnlock(), ListSearch(), and agency_s::mc_platform.

7.54.14.8 EXPORTMC int MC_GetNumAgents (MCAgency_t *attr*, int * *num_agents*)

Get the number of agents residing on an agency.

Parameters

attr A handle to a running Mobile-C agency

num_agents A pointer to an integer to fill with the number of agents

Returns

Returns 0 on success, non-zero on failure.

Definition at line 1907 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRDLock(), ListRDUnlock(), and agency_s::mc_platform.

7.54.14.9 EXPORTCH int MC_GetTimeOfDay_chdl (void * *varg*)

Definition at line 4127 of file libmc.c.

Referenced by agent_ChScriptInitVar().

7.54.14.10 EXPORTMC int MC_HaltAgency (MCAgency_t *agency*)

Halt an agency: Do not process new entries in queues.

Parameters

agency A handle to a running MobileC agency.

Returns

0 on success, non-zero on failure.

Definition at line 1920 of file libmc.c.

References mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_HaltAgency_chdl().

7.54.14.11 EXPORTCH int MC_HaltAgency_chdl (void * *varg*)

Definition at line 4142 of file libmc.c.

References CHECK_NULL, MC_HaltAgency(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.14.12 EXPORTMC MCAgency_t MC_Initialize (int *port*, MCAgencyOptions_t * *options*)

Initialize and start a MobileC agency.

Parameters

port the TCP port the agency should bind to

options initialized MobileC options or NULL for default options

Returns

a handle to a running MobileC agency or NULL on failure

7.54.15 Example

Definition at line 1929 of file libmc.c.

References agency_s::agentInitCallback, agency_s::agentInitUserData, MCAgencyOptions_s::bluetooth, agency_s::bluetooth, buf, MCAgencyOptions_s::ch_options, agency_s::client, MCAgencyOptions_s::default_agent_status, agency_s::default_agentstatus, f, agency_s::hostName, MCAgencyOptions_s::initialized, MCAgencyOptions_s::initInterps, agency_s::initInterps, agency_s::known_host_filename,

MCAgencyOptions_s::known_host_filename, MC_InitializeAgencyOptions(), MC_INITIALIZED_CODE, agency_s::mc_platform, mc_platform_Initialize(), MC_THREAD_ALL, MCAgencyOptions_s::passphrase, agency_s::portno, agency_s::priv_key_filename, MCAgencyOptions_s::priv_key_filename, read_encrypted_file(), agency_s::server, MCAgencyOptions_s::stack_size, agency_s::stack_size, strdup, MCAgencyOptions_s::threads, and agency_s::threads.

7.54.15.1 EXPORTMC int MC_InitializeAgencyOptions (struct MCAgencyOptions_s * *options*)

Initialize MobileC options.

Parameters

options options to initialize.

Returns

0 on success, error_code_t on failure

Note

MobileC options should be initialized with this function before any of its members are modified.

7.54.16 Example

Definition at line 2049 of file libmc.c.

References MCAgencyOptions_s::bluetooth, MCAgencyOptions_s::default_agent_status, MCAgencyOptions_s::initialized, MCAgencyOptions_s::initInterps, MCAgencyOptions_s::known_host_filename, MC_INITIALIZED_CODE, MC_THREAD_ALL, MC_WAIT_CH, MCAgencyOptions_s::modified, MCAgencyOptions_s::passphrase, MCAgencyOptions_s::priv_key_filename, MCAgencyOptions_s::stack_size, and MCAgencyOptions_s::threads.

Referenced by MC_Initialize().

7.54.16.1 EXPORTMC int MC_LoadAgentFromFile (MCAgency_t *attr*, const char * *filename*)

Load an agent from a file into an agency.

Parameters

agency A valid and running Mobile-C agency
filename Filename containing the agent to load

Returns

0 on success, non-zero on failure.

Definition at line 2072 of file libmc.c.

References buf, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), mc_platform_s::message_queue, MXML_DESCEND, mxmlFindElement(), mxmlLoadString(), message_s::to_address, message_s::xml_payload, and message_s::xml_root.

7.54.16.2 EXPORTMC int MC_MainLoop (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever.

Definition at line 2923 of file libmc.c.

References COND_WAIT, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_cond, and mc_platform_s::quit_lock.

7.54.16.3 EXPORTMC int MC_MigrateAgent (MCAgent_t *agent*, const char * *hostname*, int *port*)

Migrates a running agent to another host.

Parameters

agent The agent to migrate

hostname The new host to migrate the agent to

port The new port to migrate the agent to

Returns

0 on success, error_code_t type on failure.

Definition at line 2146 of file libmc.c.

References agent_s::datastate, agent_datastate_s::progress_modifier, agent_task_s::server_name, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_MigrateAgent_chdl().

7.54.16.4 EXPORTCH int MC_MigrateAgent_chdl (void * *varg*)

Definition at line 4159 of file libmc.c.

References MC_MigrateAgent(), and port.

Referenced by agent_ChScriptInitVar().

7.54.16.5 EXPORTMC int MC_MutexLock (MCAgency_t *attr*, int *id*)

Locks a MobileC synchronization variable as a mutex.

Parameters

attr a MobileC agency handle

id the synchronization variable id to lock

Returns

0 on success, error_code_t type on failure

7.54.17 Example

Consider the following agents, which use the agent-space version of this api function. Note that the 'sleep' agent is sent first, followed by the 'wake' agent.

Definition at line 2168 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, agency_s::mc_platform, MUTEX_LOCK, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_MutexLock_chdl().

7.54.17.1 EXPORTCH int MC_MutexLock_chdl (void * *varg*)

Definition at line 4178 of file libmc.c.

References CHECK_NULL, MC_MutexLock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.17.2 EXPORTMC int MC_MutexUnlock (MCAgency_t *attr*, int *id*)

Definition at line 2185 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, agency_s::mc_platform, MUTEX_UNLOCK, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_MutexUnlock_chdl().

7.54.17.3 EXPORTCH int MC_MutexUnlock_chdl (void * *varg*)

Definition at line 4202 of file libmc.c.

References CHECK_NULL, MC_MutexUnlock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.17.4 EXPORTMC int MC_PrintAgentCode (MCAgent_t *agent*)

Prints an agents code to stdout.

Returns

0 on success, error_code_t on failure

Definition at line 2202 of file libmc.c.

References agent_datastate_s::agent_code, agent_s::datastate, agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, agent_datastate_s::number_of_tasks, and agent_datastate_s::task_progress.

Referenced by MC_PrintAgentCode_chdl().

7.54.17.5 EXPORTCH int MC_PrintAgentCode_chdl (void * *varg*)

Definition at line 4226 of file libmc.c.

References MC_PrintAgentCode().

Referenced by agent_ChScriptInitVar().

7.54.17.6 EXPORTMC int MC_QueueRDLock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Lock an agency queue for reading. Prevents other threads from writing.

Definition at line 2218 of file libmc.c.

References ListRDLock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.54.17.7 EXPORTMC int MC_QueueRDUnlock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Unlock an agency queue that was previously locked for reading.

Definition at line 2230 of file libmc.c.

References ListRDUnlock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.54.17.8 EXPORTMC int MC_QueueWRLock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Lock an agency queue for writing. Prevents other threads from reading and writing.

Definition at line 2242 of file libmc.c.

References ListWRLock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.54.17.9 EXPORTMC int MC_QueueWRUnlock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Unlock an agency queue that was previously locked for writing.

Definition at line 2254 of file libmc.c.

References ListWRUnlock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.54.17.10 EXPORTMC int MC_RegisterService (MCAgency_t *agency*, MCAgent_t *agent*, int *agentID*, const char * *agentName*, char ** *serviceNames*, int *numServices*)

Register a new service with the Directory Facilitator.

Parameters

agency a MobileC agency handle

agent (OPTIONAL: See note) a MobileC agent

agentID (OPTIONAL: See note) a MobileC agent id

agentName (OPTIONAL: See note) a MobileC agent name

serviceNames an array of character strings of service names

numServices the number of services described in 'serviceNames'

Returns

0 on success, error_code_t type on failure

Note

Three of the input arguments are optional. The function expects as input the arguments 'agent XOR (agentID AND agentName)'.

7.54.18 Example

Definition at line 2266 of file libmc.c.

References CHECK_NULL, mc_platform_s::df, df_AddRequest(), df_request_list_node_New(), agent_s::id, MC_ERR_INVALID_ARGS, MC_ERR_MEMORY, agency_s::mc_platform, MUTEX_INIT, MUTEX_T, and agent_s::name.

Referenced by MC_RegisterService_chdl().

7.54.18.1 EXPORTCH int MC_RegisterService_chdl (void * *varg*)

Definition at line 4242 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RegisterService().

Referenced by agent_ChScriptInitVar().

7.54.18.2 EXPORTMC int MC_ResetSignal (MCAgency_t *attr*)

Reset a MobileC signal.

Returns

0 on success, error_code_t on failure

See also

[MC_WaitSignal\(\)](#)

Definition at line 2405 of file libmc.c.

References COND_SIGNAL, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, MC_NO_SIGNAL, agency_s::mc_platform, mc_platform_s::MC_Signal, MUTEX_LOCK, and MUTEX_UNLOCK.

7.54.18.3 EXPORTMC int MC_ResumeAgency (MCAgency_t *agency*)

Resumes a halted agency.

Parameters

agency An agency previously halted with the [MC_HaltAgency\(\)](#) function.

Returns

0 on success, non-zero on failure.

Definition at line 2345 of file libmc.c.

References mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by [MC_ResumeAgency_chdl\(\)](#).

7.54.18.4 EXPORTCH int MC_ResumeAgency_chdl (void * *varg*)

Definition at line 4279 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and [MC_ResumeAgency\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.54.18.5 EXPORTMC MCAgent_t MC_RetrieveAgent (MCAgency_t *attr*)

Retrieves the oldest agent from an agency.

Returns

a valid agent or NULL on failure

Definition at line 2354 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_lock, ListRDLock(), ListRDUnlock(), ListSearch(), MC_AGENT_NEUTRAL, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and list_s::size.

Referenced by [MC_RetrieveAgent_chdl\(\)](#).

7.54.18.6 EXPORTCH MCAgent_t MC_RetrieveAgent_chdl (void * *varg*)

Definition at line 4297 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and [MC_RetrieveAgent\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.54.18.7 EXPORTMC char* MC_RetrieveAgentCode (MCAgent_t *agent*)

Retrieves an agent's Ch code.

Returns

a malloc'd character string on success, NULL on failure

Definition at line 2389 of file libmc.c.

References `agent_datastate_s::agent_code`, `buf`, `agent_s::datastate`, `agent_s::lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `agent_datastate_s::task_progress`.

Referenced by `MC_RetrieveAgentCode_chdl()`.

7.54.18.8 EXPORTCH `char* MC_RetrieveAgentCode_chdl (void *varg)`

Definition at line 4314 of file libmc.c.

References `MC_RetrieveAgentCode()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.18.9 EXPORTCH `int MC_SaveData_chdl (void *varg)`

Definition at line 4330 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `interpreter_variable_data_New()`, `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, `interpreter_variable_data_s::name`, `interpreter_variable_data_s::size`, `strdup`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `agent_ChScriptInitVar()`.

7.54.18.10 EXPORTMC `int MC_SearchForService (MCAgency_t attr, const char *searchString, char ***agentNames, char ***serviceNames, int **agentIDs, int *numResults)`

Search the directory facilitator for a service.

Returns

0 on success, `error_code_t` on failure

Parameters

`attr` (input) a MobileC agency handle

`searchString` (input) substring to search services for

`agentNames` (return) array of agent names with matching services

`serviceNames` (return) array of matching service names

`agentIDs` (return) array of matching agent IDs

`numResults` (return) number of matching results

7.54.19 Example

Definition at line 2416 of file libmc.c.

References `CHECK_NULL`, `COND_SLEEP_ACTION`, `mc_platform_s::df`, `df_AddRequest()`, `df_request_list_node_Destroy()`, `df_request_list_node_New()`, `df_request_search_Destroy()`, `df_request_search_New()`, `MC_ERR_MEMORY`, `agency_s::mc_platform`, `MC_SUCCESS`, and `search`.

Referenced by `MC_SearchForService_chdl()`.

7.54.19.1 EXPORTCH int MC_SearchForService_chdl (void * *varg*)

Definition at line 4369 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SearchForService().

Referenced by agent_ChScriptInitVar().

7.54.19.2 EXPORTMC int MC_SemaphorePost (MCAgency_t *attr*, int *id*)

Post to a MobileC synchronization variable semaphore.

Parameters

attr a MobileC agency handle

id the synchronization variable id to post to

Returns

0 on success, error_code_t type on failure

7.54.20 Example

Definition at line 2466 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_POST, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_SemaphorePost_chdl().

7.54.20.1 EXPORTCH int MC_SemaphorePost_chdl (void * *varg*)

Definition at line 4410 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphorePost().

Referenced by agent_ChScriptInitVar().

7.54.20.2 EXPORTMC int MC_SemaphoreWait (MCAgency_t *attr*, int *id*)

Decreases a MobileC synchronization variable semaphore count by one.

Parameters

attr a MobileC agency handle

id synchronization variable id to wait on

Returns

0 on MC_SUCCESS, error_code_t type of failure

Note

If the semaphore count is already zero, this function will block until another thread posts to the semaphore.

7.54.21 Example

Definition at line 2483 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_WAIT, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_SemaphoreWait_chdl().

7.54.21.1 EXPORTCH int MC_SemaphoreWait_chdl (*void *varg*)

Definition at line 4434 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphoreWait().

Referenced by agent_ChScriptInitVar().

7.54.21.2 EXPORTMC int MC_SendAgent (MCAgency_t *attr*, const char * *message*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

message a valid MobileC xml agent migration message

Definition at line 2510 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

7.54.21.3 EXPORTMC int MC_SendAgentFile (MCAgency_t *attr*, const char * *filename*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

filename file containing a valid MobileC xml agent migration message

Definition at line 2565 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, buf, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by handler_SEND().

7.54.21.4 EXPORTMC int MC_SendAgentMigrationMessage (MCAgency_t *attr*, const char * *message*, const char * *hostname*, int *port*)

Sends an agent migration message.

Parameters

- attr* a MobileC agency handle
- message* a valid MobileC xml agent migration message
- hostname* host to send the message to
- port* port to send the message to

Definition at line 2640 of file libmc.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), and mc_platform_s::message_queue.

Referenced by MC_SendAgentMigrationMessage_chdl().

7.54.21.5 EXPORTCH int MC_SendAgentMigrationMessage_chdl (void * *varg*)

Definition at line 4458 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, MC_SendAgentMigrationMessage(), and port.

Referenced by agent_ChScriptInitVar().

7.54.21.6 EXPORTMC int MC_SendAgentMigrationMessageFile (MCAgency_t *attr*, const char * *filename*, const char * *hostname*, int *port*)

Sends an agent migration message.

Parameters

- attr* a MobileC agency handle
- filename* file containing a valid MobileC xml agent migration message
- hostname* hostname to send the agent to
- port* port to send the agent to

Definition at line 2677 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, buf, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_SendAgentMigrationMessageFile_chdl().

7.54.21.7 EXPORTCH int MC_SendAgentMigrationMessageFile_chdl (void * *varg*)

Definition at line 4483 of file libmc.c.

References MC_SendAgentMigrationMessageFile(), and port.

Referenced by agent_ChScriptInitVar().

7.54.21.8 EXPORTMC int MC_SendCh (MCAgency_t *attr*, const char **filename*, const char **remotehost*, int *port*)

Definition at line 2500 of file libmc.c.

7.54.21.9 EXPORTMC int MC_SendSteerCommand (MCAgency_t *attr*, enum MC_SteerCommand_e *cmd*)

Definition at line 2754 of file libmc.c.

References COND_BROADCAST, agency_s::mc_platform, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_SendSteerCommand_chdl().

7.54.21.10 EXPORTCH int MC_SendSteerCommand_chdl (void **varg*)

Definition at line 4503 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SendSteerCommand().

Referenced by agent_ChScriptInitVar().

7.54.21.11 EXPORTMC int MC_SetAgentStatus (MCAgent_t *agent*, enum MC_AgentStatus_e *status*)

Set an agent's status.

Parameters

agent a MobileC agent

status agent status of type 'enum MC_AgentStatus_e'

Returns

0 on success, or error_code_t on failure

Definition at line 2764 of file libmc.c.

References agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, COND_BROADCAST, COND_SIGNAL, agent_s::lock, agent_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::orphan.

Referenced by MC_SetAgentStatus_chdl().

7.54.21.12 EXPORTCH int MC_SetAgentStatus_chdl (void **varg*)

Definition at line 4526 of file libmc.c.

References MC_SetAgentStatus().

Referenced by agent_ChScriptInitVar().

7.54.21.13 EXPORTMC int MC_SetDefaultAgentStatus (MCAgency_t *agency*, enum MC_AgentStatus_e *status*)

Sets default incoming agent status.

Parameters

agency a MobileC agency handle

status the status to set all incoming agents

Returns

0 on success, error_type_t on failure

Note

using this function will override any status the incoming agent attempts to set for itself.

Definition at line 2782 of file libmc.c.

References mc_platform_s::default_agentstatus, and agency_s::mc_platform.

Referenced by MC_SetDefaultAgentStatus_chdl().

7.54.21.14 EXPORTCH int MC_SetDefaultAgentStatus_chdl (void * *varg*)

Definition at line 4544 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SetDefaultAgentStatus().

Referenced by agent_ChScriptInitVar().

7.54.21.15 EXPORTMC int MC_SetThreadOff (MCAgencyOptions_t * *options*, enum MC_ThreadIndex_e *index*)

Sets a MobileC thread to "off" status.

Parameters

options MobileC options previously initialized with [MC_InitializeAgencyOptions\(\)](#)

index the thread to set

Returns

0 on success, error_code_t on failure

Note

This function must be called before [MC_Initialize\(\)](#). Once an agency is started with MC_Initialize, the MC_SetThread functions will have no effect.

Definition at line 2809 of file libmc.c.

References SET_THREAD_OFF, and MCAgencyOptions_s::threads.

7.54.21.16 EXPORTMC int MC_SetThreadOn (MCAgencyOptions_t * *options*, enum MC_ThreadIndex_e *index*)

Sets a MobileC thread to "on" status.

Parameters

options MobileC options previously initialized with [MC_InitializeAgencyOptions\(\)](#)
index the thread to set

Returns

0 on success, error_code_t on failure

Note

This function must be called before [MC_Initialize\(\)](#). Once an agency is started with MC_Initialize, the MC_SetThread functions will have no effect.

Definition at line 2792 of file libmc.c.

References SET_THREAD_ON, and MCAgencyOptions_s::threads.

7.54.21.17 EXPORTMC int MC_SetThreadsAllOff (MCAgencyOptions_t * *options*)

Set all MobileC threads to 'off' status.

Parameters

options a MobileC options structure initialized with the [MC_InitializeAgencyOptions\(\)](#) function.

Returns

0 on success, error code on failure.

Definition at line 2816 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_OFF, and MCAgencyOptions_s::threads.

7.54.21.18 EXPORTMC int MC_SetThreadsAllOn (MCAgencyOptions_t * *options*)

Set all Mobile-C threads on.

Parameters

options MobileC options structure, initialized with [MC_InitializeAgencyOptions\(\)](#)

Returns

0 on success, error code on failure.

Definition at line 2799 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_ON, and MCAgencyOptions_s::threads.

7.54.21.19 EXPORTMC int MC_Steer (MCAgency_t *attr*, int(*)(void *data) *funcptr*, void * *arg*)

Set up a steerable algorithm.

Parameters

- attr* a MobileC agency handle
- funcptr* a function pointer to the algorithm
- arg* an argument for the algorithm function

Returns

0 on success, error_code_t on failure

Note

The algorithm function must contain a call to MC_SteerControl in order for the algorithm to be steerable.

7.54.22 Example

Definition at line 2826 of file libmc.c.

References agency_s::mc_platform, MC_RESTART, MC_RUN, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_lock, MUTEX_LOCK, and MUTEX_UNLOCK.

7.54.22.1 EXPORTMC enum MC_SteerCommand_e MC_SteerControl (void)

The MobileC user-algorithm steering function.

Returns

The current steering command

Note

This function belongs inside a user's steerable algorithm.

See also

[MC_Steer\(\)](#)

Definition at line 2845 of file libmc.c.

References COND_WAIT, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, MC_SUSPEND, MUTEX_LOCK, and MUTEX_UNLOCK.

7.54.22.2 EXPORTMC int MC_SyncDelete (MCAgency_t *attr*, int *id*)

Deletes a previously initialized synchronization variable.

Parameters

- attr* a MobileC agency handle

id the sync variable id to delete

Returns

0 on success, or error_code_t on failure

Definition at line 2861 of file libmc.c.

References agency_s::mc_platform, mc_platform_s::syncList, and syncListDelete().

Referenced by MC_SyncDelete_chdl().

7.54.22.3 EXPORTCH int MC_SyncDelete_chdl (void * *varg*)

Definition at line 4567 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncDelete().

Referenced by agent_ChScriptInitVar().

7.54.22.4 EXPORTMC int MC_SyncInit (MCAgency_t *attr*, int *id*)

Initializes a new MobileC synchronization variable.

Parameters

attr a MobileC agency handle

id the requested sync variable id

Returns

new sync variable's id. May be different than the requested id.

Note

Each synchronization variable may be used as a mutex, condition variable, or semaphore. However, it should only be used as one type of synchronization variable per instance, or undefined behaviour may result.

See also

[MC_MutexLock\(\)](#), [MC_MutexUnlock\(\)](#), [MC_CondWait\(\)](#), [MC_CondSignal\(\)](#), [MC_CondBroadcast\(\)](#), [MC_SemaphorePost\(\)](#), [MC_SemaphoreWait\(\)](#)

Definition at line 2867 of file libmc.c.

References syncListNode_s::id, ListSearchCB(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, mc_platform_s::syncList, syncListAddNode(), syncListNode_CmpID(), and syncListNode_New().

Referenced by MC_SyncInit_chdl().

7.54.22.5 EXPORTCH int MC_SyncInit_chdl (void * *varg*)

Definition at line 4590 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncInit().

Referenced by agent_ChScriptInitVar().

7.54.22.6 EXPORTMC int MC_TerminateAgent (MCAgent_t *agent*)

Halt a running agent.

Returns

0 on success, error_code_t on failure

Definition at line 2893 of file libmc.c.

References agent_s::agent_interp, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by ams_ManageAgentList(), MC_DeleteAgent(), and MC_TerminateAgent_chdl().

7.54.22.7 EXPORTCH int MC_TerminateAgent_chdl (void * *varg*)

Definition at line 4614 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgent().

Referenced by agent_ChScriptInitVar().

7.54.22.8 EXPORTMC int MC_TerminateAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Definition at line 2905 of file libmc.c.

References agent_s::agent_interp, MC_ERR_INVALID_ARGS, and agent_s::wg_code.

Referenced by MC_DeleteAgentWG(), and MC_TerminateAgentWG_chdl().

7.54.22.9 EXPORTCH int MC_TerminateAgentWG_chdl (void * *varg*)

Definition at line 4635 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgentWG().

Referenced by agent_ChScriptInitVar().

7.54.22.10 EXPORTMC int MC_WaitAgent (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever. Wait for an agent arrival event
This function blocks until an agent arrival signal is triggered, at which point it unblocks.

Definition at line 2934 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRDLock(), ListRDUnlock(), ListRDWait(), and agency_s::mc_platform.

7.54.22.11 EXPORTMC MCAgent_t MC_WaitRetrieveAgent (MCAgency_t *attr*)

Wait and retrieve an agent.

Returns

a valid MobileC agent on success, or NULL on failure

Note

This function blocks until the arrival of an agent. The agent is retrieved after it is initialized, but before it is executed.

Definition at line 2952 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRDLock(), ListRDUunlock(), ListSearch(), agency_s::mc_platform, MC_RECV_AGENT, and MC_WaitSignal().

7.54.22.12 EXPORTMC int MC_WaitSignal (MCAgency_t *attr*, int *signals*)

Wait for a MobileC signal.

Parameters

attr a MobileC agency handle

signals a flag of signals to wait for, of type 'enum MC_Signal_e'

Returns

0 on success, error_code_t on failure

Note

the parameter 'signals' may be something like 'MC_RECV_MESSAGE | MC_RECV_AGENT', etc.

7.54.23 Example

Definition at line 2972 of file libmc.c.

References COND_WAIT, mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_WaitRetrieveAgent().

7.54.24 Variable Documentation

7.54.24.1 mc_platform_p g_mc_platform

Definition at line 77 of file libmc.c.

Referenced by fipa_envelope_Compose__from().

7.55 /home/dko/Projects/mobilec/src/mc_list/list.c File Reference

```
#include "list.h"
#include "../include/rwlock.h"
#include "macros.h"
#include <stdio.h>
#include <stdlib.h>
```

Functions

- `list_p ListInitialize (void)`
- `void ListTerminate (list_p list)`
- `void ListClearCB (list_p list, ListElemDestroyFunc_t cb)`
- `int ListGetSize (list_p list)`
- `void * ListGetHead (list_p list)`
- `void * ListPop (list_p list)`
- `void * ListSearch (list_p list, const int index)`
- `int ListAdd (list_p list, void *data)`
- `int ListAppend (list_p list, void *data)`
- `int ListInsert (list_p list, void *data, const int index)`
- `list_p ListCopy (list_p list, void *(*data_copy_callback)(const void *data))`
- `void * ListDelete (list_p list, const int index)`
- `void * ListSearchCB (list_p list, const void *key, ListSearchFunc_t cb)`
- `void * ListDeleteCB (list_p list, const void *key, ListSearchFunc_t cb)`
- `void ListWait (list_p list)`
- `int ListForEachCB (list_p list, ListElemGenericFunc_t cb)`
- `void ListRDLock (list_p list)`
- `void ListRDUnlock (list_p list)`
- `void ListWRLock (list_p list)`
- `void ListWRUnlock (list_p list)`
- `void ListWRWait (list_p list)`
- `void ListRDWait (list_p list)`
- `void ListRDtoWR (list_p list)`
- `void ListWRtoRD (list_p list)`

7.55.1 Function Documentation

7.55.1.1 int ListAdd (list_p list, void * data)

Definition at line 185 of file list.c.

References `list_s::listhead`, `listNode_s::next`, `listNode_s::node_data`, and `list_s::size`.

Referenced by `acc_connection_Thread()`, `acc_MessageHandlerThread()`, `agent_AddPersistentVariable()`, `agent_Destroy()`, `agent_RunChScriptThread()`, `agent_task_Copy()`, `agent_xml_parse_data()`, `agent_xml_parse_file()`, `ams_ManageAgentList()`, `df_Add()`, `df_AddRequest()`, `listen_Thread()`, `MC_AclPost()`, `MC_AddAgent()`, `MC_AddStationaryAgent()`, `MC_AgentAttachFile()`, `MC_BarrierInit()`, `MC_LoadAgentFromFile()`, `mc_platform_Initialize()`, `MC_SaveData_chdl()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessage()`, `MC_SendAgentMigrationMessageFile()`, and `syncListAddNode()`.

7.55.1.2 int ListAppend (list_p *list*, void * *data*)

Definition at line 221 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by ListCopy().

7.55.1.3 void ListClearCB (list_p *list*, ListElemDestroyFunc_t *cb*)

Definition at line 72 of file list.c.

References ListPop().

Referenced by agent_Destroy(), agent_RunChScriptThread(), agent_task_Destroy(), handler_FLUSH_AGENTS(), and mc_platform_Destroy().

7.55.1.4 list_p ListCopy (list_p *list*, void *(*)(const void *data) *data_copy_callback*)

Definition at line 257 of file list.c.

References ListAppend(), list_s::listhead, ListInitialize(), listNode_s::next, and listNode_s::node_data.

Referenced by agent_task_Copy().

7.55.1.5 void* ListDelete (list_p *list*, const int *index*)

Definition at line 272 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by ams_ManageAgentList(), and message_queue_SendOutgoing().

7.55.1.6 void* ListDeleteCB (list_p *list*, const void * *key*, ListSearchFunc_t *cb*)

Definition at line 362 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_AddPersistentVariable(), MC_BarrierDelete(), MC_DeleteAgent(), MC_DeleteAgentWG(), syncListDelete(), and syncListRemove().

7.55.1.7 int ListForEachCB (list_p *list*, ListElemGenericFunc_t *cb*)

Definition at line 408 of file list.c.

References list_s::listhead, listNode_s::next, and listNode_s::node_data.

Referenced by ams_Print(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), and handler_PRINTLIST_MESSAGE().

7.55.1.8 void* ListGetHead (list_p *list*)

Definition at line 92 of file list.c.

References list_s::listhead, and listNode_s::node_data.

7.55.1.9 int ListGetSize (list_p *list*)

Definition at line 85 of file list.c.

References list_s::size.

Referenced by acc_Thread(), ams_Print(), MC_AgentListFiles(), MC_GetAllAgents(), MC_GetNumAgents(), MC_WaitAgent(), and MC_WaitRetrieveAgent().

7.55.1.10 list_p ListInitialize (void)

Definition at line 34 of file list.c.

References list_s::listhead, list_s::rwlock, rwlock_New(), and list_s::size.

Referenced by agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), agent_task_Copy(), agent_task_New(), df_Initialize(), ListCopy(), and mc_platform_Initialize().

7.55.1.11 int ListInsert (list_p *list*, void * *data*, const int *index*)

Definition at line 249 of file list.c.

7.55.1.12 void* ListPop (list_p *list*)

Definition at line 104 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_xml_compose__task(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), interpreter_queue_CreateRetrieve(), ListClearCB(), MC_AclRetrieve(), MC_AclWaitRetrieve(), and mc_platform_Destroy().

7.55.1.13 void ListRDLock (list_p *list*)

Definition at line 422 of file list.c.

References list_s::rwlock, and rwlock_rdlock().

Referenced by acc_connection_Thread(), acc_Thread(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), df_Thread(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), handler_PRINTLIST_MESSAGE(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_MutexLock(), MC_MutexUnlock(), MC_QueueRDLock(), MC_RetrieveAgent(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.55.1.14 void ListRDtoWR (list_p *list*)

Definition at line 456 of file list.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, rwlock_s::readers, list_s::rwlock, and rwlock_s::writer_cond.

Referenced by acc_Thread(), ams_ManageAgentList(), and message_queue_SendOutgoing().

7.55.1.15 void ListRDUnlock (list_p *list*)

Definition at line 427 of file list.c.

References list_s::rwlock, and rwlock_rdunlock().

Referenced by acc_connection_Thread(), acc_Thread(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), df_Thread(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), handler_PRINTLIST_MESSAGE(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_MutexLock(), MC_MutexUnlock(), MC_QueueRDUnlock(), MC_RetrieveAgent(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.55.1.16 void ListRDWait (list_p *list*)

Definition at line 447 of file list.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::reader_cond, rwlock_s::readers, and list_s::rwlock.

Referenced by acc_Thread(), df_Thread(), and MC_WaitAgent().

7.55.1.17 void* ListSearch (list_p *list*, const int *index*)

Definition at line 139 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_task_Copy(), ams_ManageAgentList(), MC_AgentListFiles(), MC_GetAgents(), MC_GetAllAgents(), MC_RetrieveAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.55.1.18 void* ListSearchCB (list_p *list*, const void * *key*, ListSearchFunc_t *cb*)

Definition at line 319 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncInit(), and syncListAddNode().

7.55.1.19 void ListTerminate (list_p *list*)

Definition at line 51 of file list.c.

References list_s::listhead, list_s::rwlock, rwlock_Destroy(), and list_s::size.

Referenced by agent_Destroy(), agent_task_Destroy(), df_Destroy(), df_request_list_Destroy(), and mc_platform_Destroy().

7.55.1.20 void ListWait (list_p *list*)

Definition at line 403 of file list.c.

References list_s::rwlock, and rwlock_rdwait().

7.55.1.21 void ListWRLock (list_p *list*)

Definition at line 432 of file list.c.

References list_s::rwlock, and rwlock_wrlock().

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_task_Destroy(), agent_xml_compose_task(), agent_xml_parse_data(), agent_xml_parse_file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), handler_FLUSH_AGENTS(), interpreter_queue_CreateRetrieve(), listen_Thread(), MC_AclPost(), MC_AclRetrieve(), MC_AclWaitRetrieve(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_AgentProcessingBegin(), MC_BarrierDelete(), MC_BarrierInit(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), MC_QueueWRLock(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and MC_SyncInit().

7.55.1.22 void ListWRtoRD (list_p *list*)

Definition at line 465 of file list.c.

References rwlock_s::lock, MUTEX_UNLOCK, rwlock_s::readers, and list_s::rwlock.

Referenced by ams_ManageAgentList(), and message_queue_SendOutgoing().

7.55.1.23 void ListWRUnlock (list_p *list*)

Definition at line 437 of file list.c.

References list_s::rwlock, and rwlock_wrunlock().

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), acc_Thread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_task_Destroy(), agent_xml_compose_task(), agent_xml_parse_data(), agent_xml_parse_file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), handler_FLUSH_AGENTS(), interpreter_queue_CreateRetrieve(), listen_Thread(), MC_AclPost(), MC_AclRetrieve(), MC_AclWaitRetrieve(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_AgentProcessingEnd(), MC_BarrierDelete(), MC_BarrierInit(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), MC_QueueWRUnlock(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and MC_SyncInit().

7.55.1.24 void ListWRWait (list_p *list*)

Definition at line 442 of file list.c.

References COND_WAIT, rwlock_s::lock, rwlock_s::reader_cond, and list_s::rwlock.

Referenced by acc_MessageHandlerThread(), and MC_AclWaitRetrieve().

7.56 /home/dko/Projects/mobilec/src/mc_list/list.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include "../include/macros.h"
#include "../include/rwlock.h"
```

Data Structures

- struct [listNode_s](#)
- struct [list_s](#)

Typedefs

- typedef int(* [ListSearchFunc_t](#))(const void *key, void *element)
- typedef void *(* [ListElemCopyFunc_t](#))(const void *src)
- typedef int(* [ListElemDestroyFunc_t](#))(void *elem)
- typedef int(* [ListElemGenericFunc_t](#))(void *elem)
- typedef struct [listNode_s](#) [listNode_t](#)
- typedef [listNode_t](#) * [listNode_p](#)
- typedef struct [list_s](#) [list_t](#)
- typedef [list_t](#) * [list_p](#)

Functions

- [list_p ListInitialize](#) (void)
- void [ListTerminate](#) ([list_p](#) list)
- void [ListClearCB](#) ([list_p](#) list, [ListElemDestroyFunc_t](#) cb)
- int [ListGetSize](#) ([list_p](#) list)
- int [ListAdd](#) ([list_p](#) list, void *data)
- int [ListAppend](#) ([list_p](#) list, void *data)
- int [ListInsert](#) ([list_p](#) list, void *data, const int index)
- [list_p ListCopy](#) ([list_p](#) list, void *(*data_copy_callback)(const void *data))
- void * [ListGetHead](#) ([list_p](#) list)
- void * [ListPop](#) ([list_p](#) list)
- void * [ListSearch](#) ([list_p](#) list, const int index)
- void * [ListDelete](#) ([list_p](#) list, const int index)
- void * [ListSearchCB](#) ([list_p](#) list, const void *key, [ListSearchFunc_t](#) cb)
- void * [ListDeleteCB](#) ([list_p](#) list, const void *key, [ListSearchFunc_t](#) cb)
- void [ListWait](#) ([list_p](#) list)
- int [ListForEachCB](#) ([list_p](#) list, [ListElemGenericFunc_t](#) cb)
- void [ListRDLock](#) ([list_p](#) list)
- void [ListRDUnlock](#) ([list_p](#) list)
- void [ListWRLock](#) ([list_p](#) list)
- void [ListWRUnlock](#) ([list_p](#) list)
- void [ListWRWait](#) ([list_p](#) list)
- void [ListRDWait](#) ([list_p](#) list)
- void [ListRDtoWR](#) ([list_p](#) list)
- void [ListWRtoRD](#) ([list_p](#) list)

7.56.1 Typedef Documentation

7.56.1.1 **typedef list_t* list_p**

Definition at line 58 of file list.h.

7.56.1.2 **typedef struct list_s list_t**

7.56.1.3 **typedef void*(* ListElemCopyFunc_t)(const void *src)**

Definition at line 36 of file list.h.

7.56.1.4 **typedef int(* ListElemDestroyFunc_t)(void *elem)**

Definition at line 37 of file list.h.

7.56.1.5 **typedef int(* ListElemGenericFunc_t)(void *elem)**

Definition at line 38 of file list.h.

7.56.1.6 **typedef listNode_t* listNode_p**

Definition at line 47 of file list.h.

7.56.1.7 **typedef struct listNode_s listNode_t**

7.56.1.8 **typedef int(* ListSearchFunc_t)(const void *key, void *element)**

Definition at line 35 of file list.h.

7.56.2 Function Documentation

7.56.2.1 **int ListAdd (list_p list, void * data)**

Definition at line 185 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_xml_parse_data(), agent_xml_parse_file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), listen_Thread(), MC_AclPost(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_BarrierInit(), MC_LoadAgentFromFile(), mc_platform_Initialize(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and syncListAddNode().

7.56.2.2 **int ListAppend (list_p list, void * data)**

Definition at line 221 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.
Referenced by ListCopy().

7.56.2.3 void ListClearCB (list_p *list*, ListElemDestroyFunc_t *cb*)

Definition at line 72 of file list.c.

References ListPop().

Referenced by agent_Destroy(), agent_RunChScriptThread(), agent_task_Destroy(), handler_FLUSH_AGENTS(), and mc_platform_Destroy().

7.56.2.4 list_p ListCopy (list_p *list*, void *(*)(const void *data) *data_copy_callback*)

Definition at line 257 of file list.c.

References ListAppend(), list_s::listhead, ListInitialize(), listNode_s::next, and listNode_s::node_data.

Referenced by agent_task_Copy().

7.56.2.5 void* ListDelete (list_p *list*, const int *index*)

Definition at line 272 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by ams_ManageAgentList(), and message_queue_SendOutgoing().

7.56.2.6 void* ListDeleteCB (list_p *list*, const void * *key*, ListSearchFunc_t *cb*)

Definition at line 362 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_AddPersistentVariable(), MC_BarrierDelete(), MC_DeleteAgent(), MC_DeleteAgentWG(), syncListDelete(), and syncListRemove().

7.56.2.7 int ListForEachCB (list_p *list*, ListElemGenericFunc_t *cb*)

Definition at line 408 of file list.c.

References list_s::listhead, listNode_s::next, and listNode_s::node_data.

Referenced by ams_Print(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), and handler_PRINTLIST_MESSAGE().

7.56.2.8 void* ListGetHead (list_p *list*)

Definition at line 92 of file list.c.

References list_s::listhead, and listNode_s::node_data.

7.56.2.9 int ListGetSize (list_p *list*)

Definition at line 85 of file list.c.

References list_s::size.

Referenced by acc_Thread(), ams_Print(), MC_AgentListFiles(), MC_GetAllAgents(), MC_GetNumAgents(), MC_WaitAgent(), and MC_WaitRetrieveAgent().

7.56.2.10 list_p ListInitialize (void)

Definition at line 34 of file list.c.

References list_s::listhead, list_s::rwlock, rwlock_New(), and list_s::size.

Referenced by agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), agent_task_Copy(), agent_task_New(), df_Initialize(), ListCopy(), and mc_platform_Initialize().

7.56.2.11 int ListInsert (list_p *list*, void * *data*, const int *index*)

Definition at line 249 of file list.c.

7.56.2.12 void* ListPop (list_p *list*)

Definition at line 104 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_xml_compose_task(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), interpreter_queue_CreateRetrieve(), ListClearCB(), MC_AclRetrieve(), MC_AclWaitRetrieve(), and mc_platform_Destroy().

7.56.2.13 void ListRDLock (list_p *list*)

Definition at line 422 of file list.c.

References list_s::rwlock, and rwlock_rdlock().

Referenced by acc_connection_Thread(), acc_Thread(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), df_Thread(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), handler_PRINTLIST_MESSAGE(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_MutexLock(), MC_MutexUnlock(), MC_QueueRDLock(), MC_RetrieveAgent(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.56.2.14 void ListRDtoWR (list_p *list*)

Definition at line 456 of file list.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, rwlock_s::readers, list_s::rwlock, and rwlock_s::writer_cond.

Referenced by acc_Thread(), ams_ManageAgentList(), and message_queue_SendOutgoing().

7.56.2.15 void ListRDUnlock (list_p *list*)

Definition at line 427 of file list.c.

References list_s::rwlock, and rwlock_rdunlock().

Referenced by acc_connection_Thread(), acc_Thread(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), df_Thread(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), handler_PRINTLIST_MESSAGE(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_MutexLock(), MC_MutexUnlock(), MC_QueueRDUnlock(), MC_RetrieveAgent(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.56.2.16 void ListRDWait (list_p *list*)

Definition at line 447 of file list.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::reader_cond, rwlock_s::readers, and list_s::rwlock.

Referenced by acc_Thread(), df_Thread(), and MC_WaitAgent().

7.56.2.17 void* ListSearch (list_p *list*, const int *index*)

Definition at line 139 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_task_Copy(), ams_ManageAgentList(), MC_AgentListFiles(), MC_GetAgents(), MC_GetAllAgents(), MC_RetrieveAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.56.2.18 void* ListSearchCB (list_p *list*, const void * *key*, ListSearchFunc_t *cb*)

Definition at line 319 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncInit(), and syncListAddNode().

7.56.2.19 void ListTerminate (list_p *list*)

Definition at line 51 of file list.c.

References list_s::listhead, list_s::rwlock, rwlock_Destroy(), and list_s::size.

Referenced by agent_Destroy(), agent_task_Destroy(), df_Destroy(), df_request_list_Destroy(), and mc_platform_Destroy().

7.56.2.20 void ListWait (list_p list)

Definition at line 403 of file list.c.

References list_s::rwlock, and rwlock_rdwait().

7.56.2.21 void ListWRLock (list_p list)

Definition at line 432 of file list.c.

References list_s::rwlock, and rwlock_wrlock().

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_task_Destroy(), agent_xml_compose_task(), agent_xml_parse_data(), agent_xml_parse_file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), handler_FLUSH_AGENTS(), interpreter_queue_CreateRetrieve(), listen_Thread(), MC_AclPost(), MC_AclRetrieve(), MC_AclWaitRetrieve(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_AgentProcessingBegin(), MC_BarrierDelete(), MC_BarrierInit(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), MC_QueueWRLock(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and MC_SyncInit().

7.56.2.22 void ListWRtoRD (list_p list)

Definition at line 465 of file list.c.

References rwlock_s::lock, MUTEX_UNLOCK, rwlock_s::readers, and list_s::rwlock.

Referenced by ams_ManageAgentList(), and message_queue_SendOutgoing().

7.56.2.23 void ListWRUnlock (list_p list)

Definition at line 437 of file list.c.

References list_s::rwlock, and rwlock_wrunlock().

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), acc_Thread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_task_Destroy(), agent_xml_compose_task(), agent_xml_parse_data(), agent_xml_parse_file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), handler_FLUSH_AGENTS(), interpreter_queue_CreateRetrieve(), listen_Thread(), MC_AclPost(), MC_AclRetrieve(), MC_AclWaitRetrieve(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_AgentProcessingEnd(), MC_BarrierDelete(), MC_BarrierInit(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), MC_QueueWRUnlock(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and MC_SyncInit().

7.56.2.24 void ListWRWait (list_p list)

Definition at line 442 of file list.c.

References COND_WAIT, rwlock_s::lock, rwlock_s::reader_cond, and list_s::rwlock.

Referenced by acc_MessageHandlerThread(), and MC_AclWaitRetrieve().

7.57 /home/dko/Projects/mobilec/src/mc_platform.c File Reference

```
#include "config.h"
#include <unistd.h>
#include <sys/socket.h>
#include <netdb.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "include/acc.h"
#include "include/agent.h"
#include "include/mc_platform.h"
#include "include/macros.h"
```

Defines

- #define DEFAULT_HOSTNAME_LENGTH 200

Functions

- mc_platform_p mc_platform_Initialize (MCAgency_t agency, ChOptions_t *ch_options)
- int mc_platform_Destroy (mc_platform_p platform)
- ChInterp_t * interpreter_queue_CreateRetrieve (list_t *queue, ChOptions_t *interp_options)
- list_t * mc_platform_GetQueue (mc_platform_p platform, enum MC_QueueIndex_e index)

7.57.1 Define Documentation

7.57.1.1 #define DEFAULT_HOSTNAME_LENGTH 200

Definition at line 52 of file mc_platform.c.

Referenced by mc_platform_Initialize().

7.57.2 Function Documentation

7.57.2.1 ChInterp_t* interpreter_queue_CreateRetrieve (list_t * queue, ChOptions_t * interp_options)

Definition at line 346 of file mc_platform.c.

References agent_ChScriptInitVar(), ListPop(), ListWRLock(), and ListWRUnlock().

Referenced by agent_RunChScriptThread().

7.57.2.2 int mc_platform_Destroy (mc_platform_p platform)

Definition at line 250 of file mc_platform.c.

References `mc_platform_s::acc`, `acc_Destroy()`, `agent_Destroy()`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `ams_Destroy()`, `barrier_node_Destroy()`, `mc_platform_s::barrier_queue`, `mc_platform_s::cmd_prompt`, `cmd_prompt_Destroy()`, `COND_DESTROY`, `connection_Destroy()`, `mc_platform_s::connection_queue`, `mc_platform_s::df`, `df_Destroy()`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `mc_platform_s::hostname`, `mc_platform_s::interp_options`, `mc_platform_s::interpreter_queue`, `ListClearCB()`, `ListPop()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `mc_platform_s::MC_steer_cond`, `mc_platform_s::MC_steer_lock`, `MC_SUCCESS`, `mc_platform_s::MC_sync_cond`, `mc_platform_s::MC_sync_lock`, `message_Destroy()`, `mc_platform_s::message_queue`, `MUTEX_DESTROY`, `mc_platform_s::quit_cond`, `mc_platform_s::quit_lock`, `SOCKET_ERROR`, `mc_platform_s::sockfd`, `mc_platform_s::syncList`, and `syncListNodeDestroy()`.

Referenced by `MC_End()`.

7.57.2.3 `list_t* mc_platform_GetQueue (mc_platform_p platform, enum MC_QueueIndex_e index)`

Definition at line 366 of file `mc_platform.c`.

References `mc_platform_s::agent_queue`, `mc_platform_s::barrier_queue`, `mc_platform_s::connection_queue`, `MC_QUEUE_AGENT`, `MC_QUEUE_BARRIER`, `MC_QUEUE_CONNECTION`, `MC_QUEUE_MESSAGE`, `MC_QUEUE_SYNC`, `mc_platform_s::message_queue`, and `mc_platform_s::syncList`.

Referenced by `MC_QueueRDLock()`, `MC_QueueRDUnlock()`, `MC_QueueWRLock()`, and `MC_QueueWRUnlock()`.

7.57.2.4 `mc_platform_p mc_platform_Initialize (MCAgency_t agency, ChOptions_t * ch_options)`

Definition at line 54 of file `mc_platform.c`.

References `mc_platform_s::acc`, `acc_Initialize()`, `acc_Start()`, `mc_platform_s::agency`, `agent_ChScriptInitVar()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `ams_Initialize()`, `ams_Start()`, `mc_platform_s::barrier_queue`, `agency_s::bluetooth`, `mc_platform_s::bluetooth`, `CHECK_NULL`, `mc_platform_s::cmd_prompt`, `cmd_prompt_Initialize()`, `cmd_prompt_Start()`, `COND_INIT`, `COND_T`, `COND_WAIT`, `mc_platform_s::connection_queue`, `agency_s::default_agentstatus`, `mc_platform_s::default_agentstatus`, `DEFAULT_HOSTNAME_LENGTH`, `mc_platform_s::df`, `df_Initialize()`, `df_Start()`, `mc_platform_s::err`, `GET_THREAD_MODE`, `mc_platform_s::giant`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `mc_platform_s::hostname`, `agency_s::initInterps`, `mc_platform_s::initInterps`, `mc_platform_s::interp_options`, `mc_platform_s::interpreter_queue`, `agency_s::last_error`, `ListAdd()`, `ListInitialize()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_MEMORY`, `MC_NO_SIGNAL`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `mc_platform_s::MC_steer_cond`, `mc_platform_s::MC_steer_lock`, `mc_platform_s::MC_sync_cond`, `mc_platform_s::MC_sync_lock`, `MC_THREAD_ACC`, `MC_THREAD_ALL`, `MC_THREAD_AMS`, `MC_THREAD_CP`, `MC_THREAD_DF`, `mc_platform_s::message_queue`, `MUTEX_INIT`, `MUTEX_LOCK`, `MUTEX_T`, `MUTEX_UNLOCK`, `mc_platform_s::port`, `agency_s::portno`, `mc_platform_s::quit`, `mc_platform_s::quit_cond`, `mc_platform_s::quit_lock`, `agency_s::stack_size`, `mc_platform_s::stack_size`, `mc_platform_s::syncList`, and `agency_s::threads`.

Referenced by `MC_Initialize()`.

7.58 /home/dko/Projects/mobilec/src/mc_rwlock.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include "include/macros.h"
#include "include/mc_error.h"
#include "include/mc_rwlock.h"
```

Functions

- int mc_rwlock_init (mc_rwlock_p rwlock)
- int mc_rwlock_destroy (mc_rwlock_p rwlock)
- int mc_rwlock_rdlock (mc_rwlock_p rwlock)
- int mc_rwlock_rdunlock (mc_rwlock_p rwlock)
- int mc_rwlock_wrlock (mc_rwlock_p rwlock)
- int mc_rwlock_wrunlock (mc_rwlock_p rwlock)

7.58.1 Function Documentation

7.58.1.1 int mc_rwlock_destroy (mc_rwlock_p *rwlock*)

Definition at line 66 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_DESTROY, mc_rwlock_s::lock, and MUTEX_DESTROY.

7.58.1.2 int mc_rwlock_init (mc_rwlock_p *rwlock*)

Definition at line 46 of file mc_rwlock.c.

References CHECK_NULL, mc_rwlock_s::cond, COND_INIT, COND_T, mc_rwlock_s::lock, MC_ERR_MEMORY, MUTEX_INIT, MUTEX_T, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

7.58.1.3 int mc_rwlock_rdlock (mc_rwlock_p *rwlock*)

Definition at line 79 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_WAIT, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

7.58.1.4 int mc_rwlock_rdunlock (mc_rwlock_p *rwlock*)

Definition at line 94 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_SIGNAL, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and mc_rwlock_s::num_readers.

7.58.1.5 int mc_rwlock_wrlock (mc_rwlock_p *rwlock*)

Definition at line 107 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_WAIT, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

7.58.1.6 int mc_rwlock_wrunlock (mc_rwlock_p *rwlock*)

Definition at line 126 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_SIGNAL, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and mc_rwlock_s::write_flag.

7.59 /home/dko/Projects/mobilec/src/mc_sync/sync_list.c File Reference

```
#include <pthread.h>
#include "sync_list.h"
#include "../mc_list/list.h"
#include "../include/mc_error.h"
```

Functions

- int syncListNodeInit (struct syncListNode_s *node)
- struct syncListNode_s * syncListNodeNew (void)
- int syncListNodeDestroy (struct syncListNode_s *node)
- int syncListAddNode (struct syncListNode_s *node, list_t *list)
- int syncListNew (int id, list_t *list)
- int syncListDelete (int id, list_t *list)
- syncListNode_t * syncListRemove (int id, list_t *list)
- int syncListNode_CmpID (int *key, syncListNode_t *node)

7.59.1 Function Documentation

7.59.1.1 int syncListAddNode (struct syncListNode_s * *node*, list_t * *list*)

Definition at line 56 of file sync_list.c.

References syncListNode_s::id, ListAdd(), ListSearchCB(), and syncListNode_CmpID().

Referenced by MC_SyncInit(), and syncListNew().

7.59.1.2 int syncListDelete (int *id*, list_t * *list*)

Definition at line 83 of file sync_list.c.

References ListDeleteCB(), MC_ERR_NOT_FOUND, syncListNode_CmpID(), and syncListNodeDestroy().

Referenced by MC_SyncDelete().

7.59.1.3 int syncListNew (int *id*, list_t * *list*)

Definition at line 72 of file sync_list.c.

References syncListNode_s::id, syncListAddNode(), and syncListNodeInit().

7.59.1.4 int syncListNode_CmpID (int * *key*, syncListNode_t * *node*)

Definition at line 101 of file sync_list.c.

References syncListNode_s::id.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncInit(), syncListAddNode(), syncListDelete(), and syncListRemove().

7.59.1.5 int syncListNodeDestroy (struct syncListNode_s * *node*)

Definition at line 44 of file sync_list.c.

References syncListNode_s::cond, COND_DESTROY, syncListNode_s::lock, MUTEX_DESTROY, syncListNode_s::sem, and SEMAPHORE_DESTROY.

Referenced by mc_platform_Destroy(), and syncListDelete().

7.59.1.6 int syncListNodeInit (struct syncListNode_s * *node*)

Definition at line 11 of file sync_list.c.

References CHECK_NULL, syncListNode_s::cond, COND_INIT, COND_T, syncListNode_s::lock, MUTEX_INIT, MUTEX_T, syncListNode_s::sem, SEMAPHORE_INIT, and SEMAPHORE_T.

Referenced by syncListNew().

7.59.1.7 struct syncListNode_s* syncListNodeNew (void) [read]

Definition at line 26 of file sync_list.c.

References CHECK_NULL, syncListNode_s::cond, COND_INIT, COND_T, syncListNode_s::lock, MUTEX_INIT, MUTEX_T, syncListNode_s::sem, SEMAPHORE_INIT, SEMAPHORE_T, and syncListNode_s::signalled.

Referenced by MC_SyncInit().

7.59.1.8 syncListNode_t* syncListRemove (int *id*, list_t * *list*)

Definition at line 94 of file sync_list.c.

References ListDeleteCB(), and syncListNode_CmpID().

7.60 /home/dko/Projects/mobilec/src/mc_sync/sync_list.h File Reference

```
#include "../include/macros.h"
#include "../mc_list/list.h"
#include "../include/mc_rwlock.h"
```

Data Structures

- struct syncListNode_s

Typedefs

- typedef struct syncListNode_s syncListNode_t
- typedef syncListNode_t * syncListNode_p

Functions

- int syncListNodeInit (struct syncListNode_s *node)
- int syncListNodeDestroy (struct syncListNode_s *node)
- struct syncListNode_s * syncListNodeNew (void)
- int syncListDelete (int id, list_t *list)
- syncListNode_t * syncListRemove (int id, list_t *list)
- int syncListAddNode (struct syncListNode_s *node, list_t *list)
- int syncListNew (int id, list_t *list)
- syncListNode_t * syncListGet (int id, list_t *list)
- int syncListNode_CmpID (int *key, syncListNode_t *node)

7.60.1 Typedef Documentation

7.60.1.1 **typedef syncListNode_t* syncListNode_p**

Definition at line 23 of file sync_list.h.

7.60.1.2 **typedef struct syncListNode_s syncListNode_t**

7.60.2 Function Documentation

7.60.2.1 **int syncListAddNode (struct syncListNode_s * *node*, list_t * *list*)**

Definition at line 56 of file sync_list.c.

References syncListNode_s::id, ListAdd(), ListSearchCB(), and syncListNode_CmpID().

Referenced by MC_SyncInit(), and syncListNew().

7.60.2.2 int syncListDelete (int *id*, list_t * *list*)

Definition at line 83 of file sync_list.c.

References ListDeleteCB(), MC_ERR_NOT_FOUND, syncListNode_CmpID(), and syncListNodeDestroy().

Referenced by MC_SyncDelete().

7.60.2.3 syncListNode_t* syncListGet (int *id*, list_t * *list*)**7.60.2.4 int syncListNew (int *id*, list_t * *list*)**

Definition at line 72 of file sync_list.c.

References syncListNode_s::id, syncListAddNode(), and syncListNodeInit().

7.60.2.5 int syncListNode_CmpID (int * *key*, syncListNode_t * *node*)

Definition at line 101 of file sync_list.c.

References syncListNode_s::id.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncInit(), syncListAddNode(), syncListDelete(), and syncListRemove().

7.60.2.6 int syncListNodeDestroy (struct syncListNode_s * *node*)

Definition at line 44 of file sync_list.c.

References syncListNode_s::cond, COND_DESTROY, syncListNode_s::lock, MUTEX_DESTROY, syncListNode_s::sem, and SEMAPHORE_DESTROY.

Referenced by mc_platform_Destroy(), and syncListDelete().

7.60.2.7 int syncListNodeInit (struct syncListNode_s * *node*)

Definition at line 11 of file sync_list.c.

References CHECK_NULL, syncListNode_s::cond, COND_INIT, COND_T, syncListNode_s::lock, MUTEX_INIT, MUTEX_T, syncListNode_s::sem, SEMAPHORE_INIT, and SEMAPHORE_T.

Referenced by syncListNew().

7.60.2.8 struct syncListNode_s* syncListNodeNew (void) [read]

Definition at line 26 of file sync_list.c.

References CHECK_NULL, syncListNode_s::cond, COND_INIT, COND_T, syncListNode_s::lock, MUTEX_INIT, MUTEX_T, syncListNode_s::sem, SEMAPHORE_INIT, SEMAPHORE_T, and syncListNode_s::signalled.

Referenced by MC_SyncInit().

7.60.2.9 syncListNode_t* syncListRemove (int *id*, list_t * *list*)

Definition at line 94 of file sync_list.c.

References ListDeleteCB(), and syncListNode_CmpID().

7.61 /home/dko/Projects/mobilec/src/message.c File Reference

```
#include <string.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <unistd.h>
#include <netdb.h>
#include <errno.h>
#include "config.h"
#include <mxml.h>
#include "include/libmc.h"
#include "include/agent.h"
#include "include/dynstring.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/mtp_http.h"
#include "include/xml_compose.h"
#include "agent_file_data.h"
#include "include/xml_parser.h"
#include "include/macros.h"
#include "../include/macros.h"
#include "../include/message.h"
#include "xyssl-0.9/include/xyssl/dhm.h"
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "xyssl-0.9/include/xyssl/aes.h"
```

Defines

- #define **SOCKET_INPUT_SIZE** 4096
- #define **MSG_THREADS** 40
- #define **MSG_THREAD_EXIT()**

Functions

- **message_p message_New (void)**
- **message_p message_Copy (message_p src)**
- **int message_InitializeFromAgent (mc_platform_p mc_platform, message_p message, agent_p agent)**

- int `message_InitializeFromConnection` (`mc_platform_p` `mc_platform`, `message_p` `message`, `connection_p` `connection`)
- int `http_to_hostport` (`const char *http_str`, `char **host`, `int *port`, `char **target`)
- int `message_InitializeFromString` (`mc_platform_p` `mc_platform`, `message_p` `message`, `const char *string`, `const char *destination_host`, `int destination_port`, `const char *target`)
- int `message_Destroy` (`message_p` `message`)
- int `auth_rece_send_msg` (`int sockfd`, `char *hostname`, `char *message`, `char *privkey`, `char *known_host_filename`)
- int `message_Send` (`mc_platform_t *mc_platform`, `message_p` `message`, `char *privatekey`)
- void * `message_send_Thread` (`void *arg`)
- int `message_Print` (`message_t *message`)

7.61.1 Define Documentation

7.61.1.1 #define MSG_THREAD_EXIT()

Value:

```
free(arg); \
    message_Destroy(message); \
if(myaddrinfo) { \
    freeaddrinfo(myaddrinfo); \
} \
    MUXLOCK(&mc_platform->acc->msg_thread_lock); \
    mc_platform->acc->num_msg_threads--; \
    COND_SIGNAL(&mc_platform->acc->msg_thread_cond); \
    MUXUNLOCK(&mc_platform->acc->msg_thread_lock); \
    THREAD_EXIT()
```

Definition at line 643 of file message.c.

Referenced by `message_send_Thread()`.

7.61.1.2 #define MSG_THREADS 40

Definition at line 579 of file message.c.

Referenced by `message_Send()`.

7.61.1.3 #define SOCKET_INPUT_SIZE 4096

Definition at line 71 of file message.c.

7.61.2 Function Documentation

7.61.2.1 int auth_rece_send_msg (int *sockfd*, char * *hostname*, char * *message*, char * *privkey*, char * *known_host_filename*)

Definition at line 458 of file message.c.

References `aes_en_de()`, `initiate_migration_process()`, `read_known_host_file()`, and `send_AES_en_MA()`.

Referenced by `message_send_Thread()`.

7.61.2.2 int http_to_hostport (const char * *http_str*, char ** *host*, int * *port*, char ** *target*)

Definition at line 300 of file message.c.

References MC_ERR_PARSE.

Referenced by MC_AclSend().

7.61.2.3 message_p message_Copy (message_p *src*)

Definition at line 99 of file message.c.

7.61.2.4 int message_Destroy (message_p *message*)

Definition at line 416 of file message.c.

References message_s::addr, message_s::agent_xml_flag, message_s::from_address, MC_SUCCESS, message_s::message_body, mxmDelete(), message_s::sending_agent_name, message_s::target, message_s::to_address, message_s::update_name, and message_s::xml_root.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), ams_ManageAgentList(), MC_LoadAgentFromFile(), mc_platform_Destroy(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and message_InitializeFromConnection().

7.61.2.5 int message_InitializeFromAgent (mc_platform_p *mc_platform*, message_p *message*, agent_p *agent*)

Definition at line 107 of file message.c.

References message_s::addr, agent_xml_compose(), message_s::agent_xml_flag, mc_platform_s::bluetooth, buf, CHECK_NULL, agent_s::datastate, mc_platform_s::err, message_s::from_address, agent_s::home, mc_platform_s::hostname, MC_ERR_MEMORY, MC_SUCCESS, message_s::message_body, message_s::message_id, message_s::message_type, MOBILE_AGENT, MXML_NO_CALLBACK, mxmSaveAllocString(), agent_s::name, agent_datastate_s::number_of_tasks, mc_platform_s::port, message_s::sending_agent_name, agent_task_s::server_name, strdup, strtok_r, message_s::target, agent_datastate_s::task_progress, agent_datastate_s::tasks, message_s::to_address, message_s::update_name, WARN, and message_s::xml_root.

7.61.2.6 int message_InitializeFromConnection (mc_platform_p *mc_platform*, message_p *message*, connection_p *connection*)

Definition at line 209 of file message.c.

References connection_s::addr, message_s::addr, CHECK_NULL, connection_s::clientfd, connection_s::connect_id, message_s::connect_id, message_s::from_address, MC_ERR_CONNECT, MC_ERR_PARSE, MC_SUCCESS, message_s::message_body, message_Destroy(), message_s::message_id, message_xml_parse(), MXML_NO_CALLBACK, mxmLoadString(), SOCKET_ERROR, SOCKET_INPUT_SIZE, message_s::target, message_s::to_address, and message_s::xml_root.

7.61.2.7 int message_InitializeFromString (mc_platform_p *mc_platform*, message_p *message*, const char * *string*, const char * *destination_host*, int *destination_port*, const char * *target*)

Definition at line 335 of file message.c.

References message_s::addr, CHECK_NULL, message_s::connect_id, mc_platform_s::err, message_s::from_address, mc_platform_s::hostname, MC_ERR_MEMORY, MC_ERR_PARSE, MC_SUCCESS, message_s::message_body, message_s::message_id, message_s::message_type, message_xml_parse(), MOBILE_AGENT, MXML_NO_CALLBACK, mxmLoadString(), mc_platform_s::port, message_s::target, message_s::to_address, message_s::update_name, and message_s::xml_root.

7.61.2.8 message_p message_New (void)

Definition at line 74 of file message.c.

References message_s::addr, message_s::agent_xml_flag, CHECK_NULL, message_s::connect_id, message_s::from_address, message_s::http_type, message_s::isHTTP, message_s::message_body, message_s::message_id, message_s::message_type, message_s::sending_agent_name, message_s::target, message_s::to_address, message_s::update_name, message_s::update_num, message_s::xml_payload, and message_s::xml_root.

Referenced by acc_connection_Thread(), ams_ManageAgentList(), MC_LoadAgentFromFile(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and mtp_http_CreateMessage().

7.61.2.9 int message_Print (message_t * *message*)

Definition at line 956 of file message.c.

References message_s::connect_id, and message_s::message_id.

Referenced by handler_PRINTLIST_MESSAGE().

7.61.2.10 int message_Send (mc_platform_t * *mc_platform*, message_p *message*, char * *privatekey*)

Definition at line 580 of file message.c.

References mc_platform_s::acc, COND_WAIT, message_send_arg_s::mc_platform, message_send_arg_s::message, message_send_Thread(), MSG_THREADS, MUTEX_LOCK, MUTEX_UNLOCK, message_send_arg_s::privatekey, THREAD_CREATE, and THREAD_DETACH.

Referenced by acc_MessageHandlerThread(), MC_AclSend(), and message_queue_SendOutgoing().

7.61.2.11 void* message_send_Thread (void * *arg*)

Definition at line 667 of file message.c.

References mc_platform_s::agency, auth_rece_send_msg(), mc_platform_s::bluetooth, buf, CHECK_NULL, dynstring_Append(), dynstring_Destroy(), dynstring_New(), agency_s::known_host_filename, dynstring_s::message, message_s::message_body, MSG_THREAD_EXIT, mtp_http_ComposeMessage(), mtp_http_Destroy(), mtp_http_New(), mtp_http_Parse(), port, send, SOCKET_ERROR, SOCKET_INPUT_SIZE, strtok_r, and message_s::to_address.

Referenced by message_Send().

7.62 /home/dko/Projects/mobilec/src/message_queue.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <pthread.h>
#include "include/mc_platform.h"
```

Functions

- void [message_queue_SendOutgoing](#) (struct mc_platform_s *mc_platform, list_t *mqueue)

7.62.1 Function Documentation

7.62.1.1 void message_queue_SendOutgoing (struct mc_platform_s * *mc_platform*, list_t * *mqueue*)

Definition at line 56 of file message_queue.c.

References CHECK_NULL, mc_platform_s::hostname, ListDelete(), ListRDLock(), ListRDtoWR(), ListRDUnlock(), ListSearch(), ListWRtoRD(), message_Send(), mc_platform_s::port, and message_s::to_address.

7.63 /home/dko/Projects/mobilec/src/mtp_http.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <unistd.h>
#include <errno.h>
#include "config.h"
#include "include/connection.h"
#include "include/mtp_http.h"
#include "include/macros.h"
#include "include/mc_error.h"
#include "include/message.h"
#include "include/dynstring.h"
```

Defines

- #define **SAFE_FREE**(elem)
- #define **HTTP_PARSE_EXPR**(parse_name, struct_name)
- #define **SAFE_FREE**(object)

Functions

- int **mtp_http_Destroy** (**mtp_http_p** http)
- **mtp_http_p** **mtp_http_New** (void)
- int **rece_de_msg** (char *buffer, **connection_p** con, char *privatekey)
- int **mtp_http_InitializeFromConnection** (**mtp_http_p** http, **connection_p** connection, char *privatekey)
- const char * **http_GetExpression** (const char *string, char **expr)

Parse an html expression.
- int **http_ParseExpression** (const char *expression_string, char **name, char **value)

Parse an expression into its name and value.
- const char * **mtp_http_ParseHeader** (struct **mtp_http_s** *http, const char *string)
- int **mtp_http_Parse** (struct **mtp_http_s** *http, const char *string)
- const char * **http_ParseRequest** (**mtp_http_p** http, const char *string)
- const char * **http_GetToken** (const char *string, char **token)
- int **mtp_http_ParseResponse** (struct **mtp_http_s** *http, const char *string)
- int **mtp_http_ComposeMessage** (**message_p** message)
- struct **message_s** * **mtp_http_CreateMessage** (**mtp_http_t** *mtp_http, char *hostname, int port)

7.63.1 Define Documentation

7.63.1.1 #define HTTP_PARSE_EXPR(parse_name, struct_name)

Value:

```
if ( !strcmp(name, parse_name) ) { \
    http->struct_name = (char*)malloc \
    ( \
        sizeof(char) * \
        (strlen(value)+1) \
    ); \
    strcpy(http->struct_name, value); \
} else
```

Referenced by mtp_http_ParseHeader().

7.63.1.2 #define SAFE_FREE(object)

Value:

```
if(object) free(object); \
object = NULL
```

7.63.1.3 #define SAFE_FREE(elem)

Value:

```
if(elem) \
free(elem)
```

Referenced by mtp_http_Destroy(), and mtp_http_ParseHeader().

7.63.2 Function Documentation

7.63.2.1 const char* http_GetExpression (const char * *string*, char ** *expr*)

Parse an html expression.

Parameters

string (input) The html block of text: Will parse the first expression pointed to by 'string'.

expr (output) The allocated expression

Returns

A pointer to the next expression segment of the string block, or NULL.

Definition at line 349 of file mtp_http.c.

Referenced by mtp_http_Parse(), and mtp_http_ParseHeader().

7.63.2.2 const char* http_GetToken (const char * *string*, char ** *token*)

Definition at line 790 of file mtp_http.c.

References cur.

Referenced by http_ParseRequest().

7.63.2.3 int http_ParseExpression (const char * *expression_string*, char ** *name*, char ** *value*)

Parse an expression into its name and value.

Parameters

expression_string (input) The expression

name (output) An allocated name string or NULL

value (output) An allocated value string or NULL

Returns

error_code_t type

Note

an http expression is something like 'Date: Mon, 23 May 2005 22:38:34 GMT
' where 'Date' is the name and the remainder of the string is the value

Definition at line 408 of file mtp_http.c.

References CHECK_NULL, MC_ERR_PARSE, and MC_SUCCESS.

Referenced by mtp_http_Parse(), and mtp_http_ParseHeader().

7.63.2.4 const char* http_ParseRequest (mtp_http_p *http*, const char * *string*)

Definition at line 701 of file mtp_http.c.

References cur, HTTP_CONNECT, HTTP_DELETE, HTTP_GET, http_GetToken(), HTTP_HEAD, HTTP_OPTIONS, mtp_http_s::http_performative, HTTP_PERFORMATIVE_UNDEF, HTTP_POST, HTTP_PUT, HTTP_RESPONSE, HTTP_TRACE, mtp_http_s::response_code, mtp_http_s::response_string, and mtp_http_s::target.

Referenced by mtp_http_ParseHeader().

7.63.2.5 int mtp_http_ComposeMessage (message_p *message*)

Definition at line 829 of file mtp_http.c.

References buf, message_s::isHTTP, MC_SUCCESS, message_s::message_body, PACKAGE_VERSION, message_s::target, and message_s::to_address.

7.63.2.6 struct message_s* mtp_http_CreateMessage (mtp_http_t * *mtp_http*, char * *hostname*, int *port*) [read]

Definition at line 875 of file mtp_http.c.

References buf, mtp_http_s::content, mtp_http_content_s::content_type, mtp_http_content_s::data, dynstring_Append(), dynstring_Destroy(), dynstring_New(), mtp_http_s::host, message_s::isHTTP, dynstring_s::len, dynstring_s::message, message_s::message_body, message_New(), mtp_http_s::message_parts, PACKAGE_VERSION, mtp_http_s::target, and message_s::to_address.

Referenced by MC_AclSend().

7.63.2.7 int mtp_http_Destroy (mtp_http_p http)

Definition at line 54 of file mtp_http.c.

References mtp_http_s::accept_ranges, mtp_http_s::boundary, mtp_http_s::cache_control, mtp_http_s::connection, mtp_http_s::content, mtp_http_s::content_length, mtp_http_content_s::content_type, mtp_http_s::content_type, mtp_http_content_s::data, mtp_http_s::date, mtp_http_s::host, mtp_http_s::http_version, mtp_http_s::message_parts, mtp_http_s::mime_version, mtp_http_s::response_string, mtp_http_s::return_code, SAFE_FREE, mtp_http_s::server, mtp_http_s::target, and mtp_http_s::user_agent.

Referenced by acc_connection_Thread(), MC_AclSend(), message_send_Thread(), and mtp_http_InitializeFromConnection().

7.63.2.8 int mtp_http_InitializeFromConnection (mtp_http_p http, connection_p connection, char *privatekey)

Definition at line 180 of file mtp_http.c.

References CHECK_NULL, connection_s::clientfd, mtp_http_s::content_length, dynstring_Append(), dynstring_Destroy(), dynstring_New(), ERR, mtp_http_s::header_length, HTTP_HEAD, mtp_http_s::http_performative, MC_ERR_CONNECT, mtp_http_Destroy(), mtp_http_New(), mtp_http_Parse(), mtp_http_ParseHeader(), PACKAGE_STRING, rece_de_msg(), send, SOCKET_ERROR, SOCKET_INPUT_SIZE, and strdup.

7.63.2.9 mtp_http_p mtp_http_New (void)

Definition at line 89 of file mtp_http.c.

References CHECK_NULL, and mtp_http_s::content.

Referenced by acc_connection_Thread(), MC_AclSend(), message_send_Thread(), and mtp_http_InitializeFromConnection().

7.63.2.10 int mtp_http_Parse (struct mtp_http_s * http, const char * string)

Definition at line 551 of file mtp_http.c.

References mtp_http_s::boundary, mtp_http_s::content, mtp_http_s::content_length, mtp_http_content_s::content_type, mtp_http_s::content_type, mtp_http_content_s::data, http_GetExpression(), HTTP_HEAD, http_ParseExpression(), mtp_http_s::http_performative, HTTP_POST, HTTP_PUT, HTTP_RESPONSE, MC_SUCCESS, mtp_http_s::message_parts, mtp_http_ParseHeader(), and strdup.

Referenced by message_send_Thread(), and mtp_http_InitializeFromConnection().

7.63.2.11 const char* mtp_http_ParseHeader (struct mtp_http_s * http, const char * string)

Definition at line 467 of file mtp_http.c.

References `mtp_http_s::header_length`, `http_GetExpression()`, `HTTP_PARSE_EXPR`, `http_ParserExpression()`, `http_ParseRequest()`, `MC_SUCCESS`, and `SAFE_FREE`.

Referenced by `mtp_http_InitializeFromConnection()`, and `mtp_http_Parse()`.

7.63.2.12 int mtp_http_ParseResponse (struct mtp_http_s * *http*, const char * *string*)

Definition at line 823 of file `mtp_http.c`.

7.63.2.13 int rece_de_msg (char * *buffer*, connection_p *con*, char * *privatekey*)

Definition at line 100 of file `mtp_http.c`.

References `aes_en_de()`, `connection_s::AES_key`, `connection_s::clientfd`, `connection_s::nonce`, and `receive_AES_en_MA()`.

Referenced by `mtp_http_InitializeFromConnection()`.

7.64 /home/dko/Projects/mobilec/src/mxml-2.2.2/config.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdarg.h>
#include <ctype.h>
```

Defines

- #define **MXML_VERSION** "Mini-XML v2.2.2"
- #define **HAVE_VSNPRINTF** 1
- #define **HAVE_STRDUP** 1

Functions

- char * **mxml_strdup** (const char *, va_list)

7.64.1 Define Documentation

7.64.1.1 #define HAVE_STRDUP 1

Definition at line 49 of file config.h.

7.64.1.2 #define HAVE_VSNPRINTF 1

Definition at line 42 of file config.h.

7.64.1.3 #define MXML_VERSION "Mini-XML v2.2.2"

Definition at line 35 of file config.h.

Referenced by write_documentation().

7.64.2 Function Documentation

7.64.2.1 char* mxml_strdup (const char *, va_list)

Definition at line 66 of file mxml-string.c.

Referenced by mxml_error(), mxmlNewTextf(), and mxmlSetTextf().

7.65 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/config.h File Reference

Defines

- #define XYSSL_HAVE_ASM
- #define XYSSL_DEBUG_MSG
- #define XYSSL_SELF_TEST
- #define XYSSL_GENPRIME
- #define XYSSL_AES_C
- #define XYSSL_ARC4_C
- #define XYSSL_BASE64_C
- #define XYSSL_BIGNUM_C
- #define XYSSL_CERTS_C
- #define XYSSL_DEBUG_C
- #define XYSSL_DES_C
- #define XYSSL_DHM_C
- #define XYSSL_HAVEGE_C
- #define XYSSL_MD5_C
- #define XYSSL_NET_C
- #define XYSSL_PADLOCK_C
- #define XYSSL_RSA_C
- #define XYSSL_SHA1_C
- #define XYSSL_SHA2_C
- #define XYSSL_SHA4_C
- #define XYSSL_SSL_CLI_C
- #define XYSSL_SSL_SRV_C
- #define XYSSL_SSL_TLS_C
- #define XYSSL_TIMING_C
- #define XYSSL_X509_PARSE_C
- #define XYSSL_X509_WRITE_C

7.65.1 Define Documentation

7.65.1.1 #define XYSSL_AES_C

Definition at line 74 of file config.h.

7.65.1.2 #define XYSSL_ARC4_C

Definition at line 84 of file config.h.

7.65.1.3 #define XYSSL_BASE64_C

Definition at line 92 of file config.h.

7.65.1.4 #define XYSSL_BIGNUM_C

Definition at line 103 of file config.h.

7.65.1.5 #define XYSSL_CERTS_C

Definition at line 111 of file config.h.

7.65.1.6 #define XYSSL_DEBUG_C

Definition at line 121 of file config.h.

7.65.1.7 #define XYSSL_DEBUG_MSG

Definition at line 47 of file config.h.

7.65.1.8 #define XYSSL_DES_C

Definition at line 131 of file config.h.

7.65.1.9 #define XYSSL_DHM_C

Definition at line 142 of file config.h.

7.65.1.10 #define XYSSL_GENPRIME

Definition at line 57 of file config.h.

7.65.1.11 #define XYSSL_HAVE_ASM

Definition at line 36 of file config.h.

7.65.1.12 #define XYSSL_HAVEGE_C

Definition at line 150 of file config.h.

7.65.1.13 #define XYSSL_MD5_C

Definition at line 177 of file config.h.

7.65.1.14 #define XYSSL_NET_C

Definition at line 185 of file config.h.

7.65.1.15 #define XYSSL_PADLOCK_C

Definition at line 193 of file config.h.

7.65.1.16 #define XYSSL_RSA_C

Definition at line 204 of file config.h.

7.65.1.17 #define XYSSL_SELF_TEST

Definition at line 52 of file config.h.

7.65.1.18 #define XYSSL_SHA1_C

Definition at line 215 of file config.h.

7.65.1.19 #define XYSSL_SHA2_C

Definition at line 223 of file config.h.

7.65.1.20 #define XYSSL_SHA4_C

Definition at line 231 of file config.h.

7.65.1.21 #define XYSSL_SSL_CLI_C

Definition at line 239 of file config.h.

7.65.1.22 #define XYSSL_SSL_SRV_C

Definition at line 247 of file config.h.

7.65.1.23 #define XYSSL_SSL_TLS_C

Definition at line 256 of file config.h.

7.65.1.24 #define XYSSL_TIMING_C

Definition at line 264 of file config.h.

7.65.1.25 #define XYSSL_X509_PARSE_C

Definition at line 274 of file config.h.

7.65.1.26 #define XYSSL_X509_WRITE_C

Definition at line 282 of file config.h.

7.66 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-attr.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdarg.h>
#include <ctype.h>
#include <errno.h>
```

Functions

- const char * **mxmlElementGetAttr** (*mxml_node_t* *node, const char *name)
- void **mxmlElementSetAttr** (*mxml_node_t* *node, const char *name, const char *value)

7.66.1 Function Documentation

7.66.1.1 const char* mxmlElementGetAttr (*mxml_node_t* * *node*, const char * *name*)

Definition at line 48 of file mxml-attr.c.

References *mxml_value_s::attrs*, *mxml_value_u::element*, *MXML_ELEMENT*, *mxml_attr_s::name*, *mxml_value_s::numAttrs*, *mxml_node_s::type*, *mxml_attr_s::value*, and *mxml_node_s::value*.

Referenced by *agent_xml_parse_agent_code()*, *agent_xml_parse_data()*, *agent_xml_parse_file()*, *agent_xml_parse_task()*, *agent_xml_parse_tasks()*, *fipa_envelope_HandleReceived()*, *index_compare()*, *index_find()*, *message_xml_parse_message()*, *mxml_parse_element()*, *mxmlFindElement()*, *mxmlIndexNew()*, *scan_file()*, *sort_node()*, *type_cb()*, and *write_documentation()*.

7.66.1.2 void mxmlElementSetAttr (*mxml_node_t* * *node*, const char * *name*, const char * *value*)

Definition at line 95 of file mxml-attr.c.

References *mxml_value_s::attrs*, *mxml_value_u::element*, *MXML_ELEMENT*, *mxml_error()*, *mxml_value_s::name*, *mxml_attr_s::name*, *mxml_value_s::numAttrs*, *strdup*, *mxml_node_s::type*, *mxml_attr_s::value*, and *mxml_node_s::value*.

Referenced by *add_variable()*, *agent_xml_compose_agent_code()*, *agent_xml_compose_create_row_nodes()*, *agent_xml_compose_data()*, *agent_xml_compose_file()*, *agent_xml_compose_message()*, *agent_xml_compose_task()*, *agent_xml_compose_tasks()*, *fipa_envelope_Compose_params()*, *main()*, *mxml_parse_element()*, *scan_file()*, *sort_node()*, and *update_comment()*.

7.67 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-entity.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- static int **default_callback** (const char *name)
- int **mxmlEntityAddCallback** (int(*cb)(const char *name))
- const char * **mxmlEntityGetName** (int val)
- int **mxmlEntityGetValue** (const char *name)
- void **mxmlEntityRemoveCallback** (int(*cb)(const char *name))

Variables

- static int **num_callbacks** = 1
- static int(*) **callbacks** [100])(const char *name)

7.67.1 Function Documentation

7.67.1.1 static int default_callback (const char * *name*) [static]

Definition at line 173 of file mxml-entity.c.

7.67.1.2 int mxmlEntityAddCallback (int(*)(const char *name) *cb*)

Definition at line 69 of file mxml-entity.c.

References callbacks, mxml_error(), and num_callbacks.

7.67.1.3 const char* mxmlEntityGetName (int *val*)

Definition at line 95 of file mxml-entity.c.

Referenced by mxml_write_name(), and mxml_write_string().

7.67.1.4 int mxmlEntityGetValue (const char * *name*)

Definition at line 125 of file mxml-entity.c.

References callbacks, and num_callbacks.

Referenced by mxml_get_entity().

7.67.1.5 void mxmlEntityRemoveCallback (int(*)(const char *name) *cb*)

Definition at line 144 of file mxml-entity.c.

References callbacks, and num_callbacks.

7.67.2 Variable Documentation

7.67.2.1 int(* callbacks[100])(const char *name) [static]

Initial value:

```
{  
    default_callback  
}
```

Definition at line 58 of file mxml-entity.c.

Referenced by mxmlEntityAddCallback(), mxmlEntityGetValue(), and mxmlEntityRemoveCallback().

7.67.2.2 int num_callbacks = 1 [static]

Definition at line 57 of file mxml-entity.c.

Referenced by mxmlEntityAddCallback(), mxmlEntityGetValue(), and mxmlEntityRemoveCallback().

7.68 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-file.c File Reference

```
#include "mxml.h"
#include <unistd.h>
#include "config.h"
```

Data Structures

- struct [mxml_fdbuf_s](#)

Defines

- #define ENCODE_UTF8 0
- #define ENCODE_UTF16BE 1
- #define ENCODE_UTF16LE 2
- #define [mxml_bad_char\(ch\)](#) ((ch) < ' ' && (ch) != '\n' && (ch) != '\r' && (ch) != '\t')

Typedefs

- typedef struct [mxml_fdbuf_s](#) [mxml_fdbuf_t](#)

Functions

- static int [mxml_add_char](#) (int ch, char **ptr, char **buffer, int *bufsize)
- static int [mxml_fd_getc](#) (void *p, int *encoding)
- static int [mxml_fd_putc](#) (int ch, void *p)
- static int [mxml_fd_read](#) ([mxml_fdbuf_t](#) *buf)
- static int [mxml_fd_write](#) ([mxml_fdbuf_t](#) *buf)
- static int [mxml_file_getc](#) (void *p, int *encoding)
- static int [mxml_file_putc](#) (int ch, void *p)
- static int [mxml_get_entity](#) ([mxml_node_t](#) *parent, void *p, int *encoding, int(*getc_cb)(void *, int *))
- static [mxml_node_t](#) * [mxml_load_data](#) ([mxml_node_t](#) *top, void *p, [mxml_type_t](#)(*cb)([mxml_node_t](#) *), int(*getc_cb)(void *, int *))
- static int [mxml_parse_element](#) ([mxml_node_t](#) *node, void *p, int *encoding, int(*getc_cb)(void *, int *))
- static int [mxml_string_getc](#) (void *p, int *encoding)
- static int [mxml_string_putc](#) (int ch, void *p)
- static int [mxml_write_name](#) (const char *s, void *p, int(*putc_cb)(int, void *))
- static int [mxml_write_node](#) ([mxml_node_t](#) *node, void *p, const char *(*cb)([mxml_node_t](#) *, int), int col, int(*putc_cb)(int, void *))
- static int [mxml_write_string](#) (const char *s, void *p, int(*putc_cb)(int, void *))
- static int [mxml_write_ws](#) ([mxml_node_t](#) *node, void *p, const char *(*cb)([mxml_node_t](#) *, int), int ws, int col, int(*putc_cb)(int, void *))
- [mxml_node_t](#) * [mxmlLoadFd](#) ([mxml_node_t](#) *top, int fd, [mxml_type_t](#)(*cb)([mxml_node_t](#) *node))
- [mxml_node_t](#) * [mxmlLoadFile](#) ([mxml_node_t](#) *top, FILE *fp, [mxml_type_t](#)(*cb)([mxml_node_t](#) *node))

- `mxml_node_t * mxmlLoadString (mxml_node_t *top, const char *s, mxml_type_t(*cb)(mxml_node_t *node))`
- `char * mxmlSaveAllocString (mxml_node_t *node, const char *(*cb)(mxml_node_t *node, int ws))`
- `int mxmlSaveFd (mxml_node_t *node, int fd, const char *(*cb)(mxml_node_t *node, int ws))`
- `int mxmlSaveFile (mxml_node_t *node, FILE *fp, const char *(*cb)(mxml_node_t *node, int ws))`
- `int mxmlSaveString (mxml_node_t *node, char *buffer, int bufsize, const char *(*cb)(mxml_node_t *node, int ws))`
- `void mxmlSetCustomHandlers (mxml_custom_load_cb_t load, mxml_custom_save_cb_t save)`
- `void mxmlSetErrorHandler (void(*cb)(const char *))`

Variables

- `void(* mxml_error_cb)(const char *)`
- `static mxml_custom_load_cb_t mxml_custom_load_cb = NULL`
- `static mxml_custom_save_cb_t mxml_custom_save_cb = NULL`

7.68.1 Define Documentation

7.68.1.1 #define ENCODE_UTF16BE 1

Definition at line 69 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, and `mxml_string_getc()`.

7.68.1.2 #define ENCODE_UTF16LE 2

Definition at line 70 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, and `mxml_string_getc()`.

7.68.1.3 #define ENCODE_UTF8 0

Definition at line 68 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, `mxml_load_data()`, and `mxml_string_getc()`.

7.68.1.4 #define mxml_bad_char(ch) ((ch) < ' ' && (ch) != '\n' && (ch) != '\r' && (ch) != '\t')

Definition at line 77 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, `mxml_get_entity()`, and `mxml_string_getc()`.

7.68.2 Typedef Documentation

7.68.2.1 typedef struct mxml_fdbuf_s mxml_fdbuf_t

7.68.3 Function Documentation

7.68.3.1 static int mxml_add_char (int ch, char **ptr, char **buffer, int *bufsize) [static]

Definition at line 484 of file mxml-file.c.

References mxml_error().

Referenced by mxml_load_data(), and mxml_parse_element().

7.68.3.2 static int mxml_fd_getc (void **p*, int **encoding*) [static]

Definition at line 564 of file mxml-file.c.

References buf, mxml_fdbuf_s::current, ENCODE_UTF16BE, ENCODE_UTF16LE, ENCODE_UTF8, mxml_fdbuf_s::end, mxml_bad_char, mxml_error(), and mxml_fd_read().

Referenced by mxmlLoadFd().

7.68.3.3 static int mxml_fd_putc (int *ch*, void **p*) [static]

Definition at line 851 of file mxml-file.c.

References buf, mxml_fdbuf_s::current, mxml_fdbuf_s::end, and mxml_fd_write().

Referenced by mxmlSaveFd().

7.68.3.4 static int mxml_fd_read (mxml_fdbuf_t **buf*) [static]

Definition at line 920 of file mxml-file.c.

References mxml_fdbuf_s::buffer, mxml_fdbuf_s::current, mxml_fdbuf_s::end, and mxml_fdbuf_s::fd.

Referenced by mxml_fd_getc().

7.68.3.5 static int mxml_fd_write (mxml_fdbuf_t **buf*) [static]

Definition at line 959 of file mxml-file.c.

References mxml_fdbuf_s::buffer, mxml_fdbuf_s::current, and mxml_fdbuf_s::fd.

Referenced by mxml_fd_putc(), and mxmlSaveFd().

7.68.3.6 static int mxml_file_getc (void **p*, int **encoding*) [static]

Definition at line 1002 of file mxml-file.c.

References ENCODE_UTF16BE, ENCODE_UTF16LE, ENCODE_UTF8, mxml_bad_char, and mxml_error().

Referenced by mxmlLoadFile().

7.68.3.7 static int mxml_file_putc (int *ch*, void **p*) [static]

Definition at line 1201 of file mxml-file.c.

Referenced by mxmlSaveFile().

7.68.3.8 static int mxml_get_entity (mxml_node_t * *parent*, void * *p*, int * *encoding*, int(*)(void *, int *) *getc_cb*) [static]

Definition at line 1256 of file mxml-file.c.

References mxml_value_u::element, mxml_bad_char, mxml_error(), mxmlEntityGetValue(), mxml_value_s::name, and mxml_node_s::value.

Referenced by mxml_load_data(), and mxml_parse_element().

7.68.3.9 static mxml_node_t * mxml_load_data (mxml_node_t * *top*, void * *p*, mxml_type_t(*)(mxml_node_t *) *cb*, int(*)(void *, int *) *getc_cb*) [static]

Definition at line 1317 of file mxml-file.c.

References mxml_value_u::element, ENCODE_UTF8, mxml_add_char(), MXML_CUSTOM, mxml_custom_load_cb, mxml_error(), mxml_get_entity(), MXML_INTEGER, MXML_OPAQUE, mxml_parse_element(), MXML_REAL, MXML_TEXT, mxmlDelete(), mxmlNewCustom(), mxmlNewElement(), mxmlNewInteger(), mxmlNewOpaque(), mxmlNewReal(), mxmlNewText(), mxml_value_s::name, mxml_node_s::parent, and mxml_node_s::value.

Referenced by mxmlLoadFd(), mxmlLoadFile(), and mxmlLoadString().

7.68.3.10 static int mxml_parse_element (mxml_node_t * *node*, void * *p*, int * *encoding*, int(*)(void *, int *) *getc_cb*) [static]

Definition at line 1841 of file mxml-file.c.

References mxml_value_u::element, mxml_add_char(), mxml_error(), mxml_get_entity(), mxmlElementGetAttr(), mxmlElementSetAttr(), mxml_value_s::name, and mxml_node_s::value.

Referenced by mxml_load_data().

7.68.3.11 static int mxml_string_getc (void * *p*, int * *encoding*) [static]

Definition at line 2103 of file mxml-file.c.

References ENCODE_UTF16BE, ENCODE_UTF16LE, ENCODE_UTF8, mxml_bad_char, and mxml_error().

Referenced by mxmlLoadString().

7.68.3.12 static int mxml_string_putc (int *ch*, void * *p*) [static]

Definition at line 2339 of file mxml-file.c.

Referenced by mxmlSaveString().

7.68.3.13 static int mxml_write_name (const char * *s*, void * *p*, int(*)(int, void *) *putc_cb*) [static]

Definition at line 2413 of file mxml-file.c.

References mxmlEntityGetName().

Referenced by mxml_write_node().

7.68.3.14 static int mxmxml_write_node (mxmxml_node_t * node, void * p, const char *(*)(mxmxml_node_t *, int) cb, int col, int(*(int, void *)) putc_cb) [static]

Definition at line 2488 of file mxmxml-file.c.

References mxmxml_value_s::attrs, mxmxml_node_s::child, mxmxml_value_u::element, mxmxml_value_u::integer, MXML_CUSTOM, mxmxml_custom_save_cb, MXML_ELEMENT, MXML_INTEGER, MXML_OPAQUE, MXML_REAL, MXML_TEXT, MXML_WRAP, mxmxml_write_name(), mxmxml_write_string(), mxmxml_write_ws(), MXML_WS_AFTER_CLOSE, MXML_WS_AFTER_OPEN, MXML_WS_BEFORE_CLOSE, MXML_WS_BEFORE_OPEN, mxmxml_attr_s::name, mxmxml_value_s::name, mxmxml_node_s::next, mxmxml_value_s::numAttrs, mxmxml_value_u::opaque, mxmxml_node_s::prev, mxmxml_value_u::real, mxmxml_text_s::string, mxmxml_value_u::text, mxmxml_node_s::type, mxmxml_attr_s::value, mxmxml_node_s::value, and mxmxml_text_s::whitespace.

Referenced by mxmxmlSaveFd(), mxmxmlSaveFile(), and mxmxmlSaveString().

7.68.3.15 static int mxmxml_write_string (const char * s, void * p, int(*(int, void *)) putc_cb) [static]

Definition at line 2769 of file mxmxml-file.c.

References mxmxmlEntityGetName().

Referenced by mxmxml_write_node().

7.68.3.16 static int mxmxml_write_ws (mxmxml_node_t * node, void * p, const char *(*)(mxmxml_node_t *, int) cb, int ws, int col, int(*(int, void *)) putc_cb) [static]

Definition at line 2809 of file mxmxml-file.c.

References MXML_TAB.

Referenced by mxmxml_write_node().

7.68.3.17 mxmxml_node_t* mxmxmlLoadFd (mxmxml_node_t * top, int fd, mxmxml_type_t(*)(mxmxml_node_t *node) cb)

Definition at line 160 of file mxmxml-file.c.

References buf, mxmxml_fdbuf_s::buffer, mxmxml_fdbuf_s::current, mxmxml_fdbuf_s::end, mxmxml_fdbuf_s::fd, mxmxml_fd_getc(), and mxmxml_load_data().

Referenced by main().

7.68.3.18 mxmxml_node_t* mxmxmlLoadFile (mxmxml_node_t * top, FILE * fp, mxmxml_type_t(*)(mxmxml_node_t *node) cb)

Definition at line 200 of file mxmxml-file.c.

References mxmxml_file_getc(), and mxmxml_load_data().

Referenced by main().

7.68.3.19 `mxml_node_t* mxmlLoadString (mxml_node_t * top, const char * s, mxml_type_t(*)(mxml_node_t *node) cb)`

Definition at line 229 of file mxml-file.c.

References mxml_load_data(), and mxml_string_getc().

Referenced by acc_connection_Thread(), agent_xml_compose(), fipa_envelope_Compose(), fipa_envelope_Parse(), main(), MC_LoadAgentFromFile(), message_InitializeFromConnection(), and message_InitializeFromString().

7.68.3.20 `char* mxmlSaveAllocString (mxml_node_t * node, const char *(*)(mxml_node_t *node, int ws) cb)`

Definition at line 259 of file mxml-file.c.

References mxmlSaveString(), and strdup.

Referenced by fipa_envelope_Compose(), MC_GetAgentXMLString(), and message_InitializeFromAgent().

7.68.3.21 `int mxmlSaveFd (mxml_node_t * node, int fd, const char *(*)(mxml_node_t *node, int ws) cb)`

Definition at line 316 of file mxml-file.c.

References buf, mxml_fdbuf_s::buffer, mxml_fdbuf_s::current, mxml_fdbuf_s::end, mxml_fdbuf_s::fd, mxml_fd_putc(), mxml_fd_write(), and mxml_write_node().

Referenced by main().

7.68.3.22 `int mxmlSaveFile (mxml_node_t * node, FILE * fp, const char *(*)(mxml_node_t *node, int ws) cb)`

Definition at line 363 of file mxml-file.c.

References mxml_file_putc(), and mxml_write_node().

Referenced by main().

7.68.3.23 `int mxmlSaveString (mxml_node_t * node, char * buffer, int bufsize, const char *(*)(mxml_node_t *node, int ws) cb)`

Definition at line 405 of file mxml-file.c.

References mxml_string_putc(), and mxml_write_node().

Referenced by main(), and mxmlSaveAllocString().

7.68.3.24 `void mxmlSetCustomHandlers (mxml_custom_load_cb_t load, mxml_custom_save_cb_t save)`

Definition at line 457 of file mxml-file.c.

References mxml_custom_load_cb, and mxml_custom_save_cb.

7.68.3.25 void mxmxmlSetErrorCallback (void(*)(const char *) *cb*)

Definition at line 472 of file mxmxml-file.c.

References mxmxml_error_cb.

7.68.4 Variable Documentation**7.68.4.1 mxmxml_custom_load_cb_t mxmxml_custom_load_cb = NULL [static]**

Definition at line 104 of file mxmxml-file.c.

Referenced by mxmxml_load_data(), and mxmxmlSetCustomHandlers().

7.68.4.2 mxmxml_custom_save_cb_t mxmxml_custom_save_cb = NULL [static]

Definition at line 105 of file mxmxml-file.c.

Referenced by mxmxml_write_node(), and mxmxmlSetCustomHandlers().

7.68.4.3 void(* mxmxml_error_cb)(const char *)

Definition at line 45 of file mxmxml-private.c.

Referenced by mxmxml_error(), and mxmxmlSetErrorCallback().

7.69 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-index.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- static int `index_compare (mxml_index_t *ind, mxml_node_t *first, mxml_node_t *second)`
- static int `index_find (mxml_index_t *ind, const char *element, const char *value, mxml_node_t *node)`
- static void `index_sort (mxml_index_t *ind, int left, int right)`
- void `mxmlIndexDelete (mxml_index_t *ind)`
- `mxml_node_t * mxmlIndexEnum (mxml_index_t *ind)`
- `mxml_node_t * mxmlIndexFind (mxml_index_t *ind, const char *element, const char *value)`
- `mxml_index_t * mxmlIndexNew (mxml_node_t *node, const char *element, const char *attr)`
- `mxml_node_t * mxmlIndexReset (mxml_index_t *ind)`

7.69.1 Function Documentation

7.69.1.1 static int index_compare (mxml_index_t * *ind*, mxml_node_t * *first*, mxml_node_t * *second*) [static]

Definition at line 498 of file mxml-index.c.

References `mxml_index_s::attr`, `mxml_value_u::element`, `mxmlElementGetAttr()`, `mxml_value_s::name`, and `mxml_node_s::value`.

Referenced by `index_sort()`.

7.69.1.2 static int index_find (mxml_index_t * *ind*, const char * *element*, const char * *value*, mxml_node_t * *node*) [static]

Definition at line 537 of file mxml-index.c.

References `mxml_index_s::attr`, `mxml_value_u::element`, `mxmlElementGetAttr()`, `mxml_value_s::name`, and `mxml_node_s::value`.

Referenced by `mxmlIndexFind()`.

7.69.1.3 static void index_sort (mxml_index_t * *ind*, int *left*, int *right*) [static]

Definition at line 580 of file mxml-index.c.

References `index_compare()`, and `mxml_index_s::nodes`.

Referenced by `mxmlIndexNew()`.

7.69.1.4 void mxmlIndexDelete (mxml_index_t * *ind*)

Definition at line 62 of file mxml-index.c.

References mxml_index_s::alloc_nodes, mxml_index_s::attr, and mxml_index_s::nodes.

Referenced by main(), and mxmlIndexNew().

7.69.1.5 mxml_node_t* mxmlIndexEnum (mxml_index_t * *ind*)

Definition at line 92 of file mxml-index.c.

References mxml_index_s::cur_node, mxml_index_s::nodes, and mxml_index_s::num_nodes.

Referenced by main(), and mxmlIndexFind().

7.69.1.6 mxml_node_t* mxmlIndexFind (mxml_index_t * *ind*, const char * *element*, const char * *value*)

Definition at line 122 of file mxml-index.c.

References mxml_index_s::attr, mxml_index_s::cur_node, index_find(), mxmlIndexEnum(), mxml_index_s::nodes, and mxml_index_s::num_nodes.

Referenced by main().

7.69.1.7 mxml_index_t* mxmlIndexNew (mxml_node_t * *node*, const char * *element*, const char * *attr*)

Definition at line 305 of file mxml-index.c.

References mxml_index_s::alloc_nodes, mxml_index_s::attr, mxml_value_u::element, index_sort(), MXML_DESCEND, mxml_error(), mxmlElementGetAttr(), mxmlFindElement(), mxmlIndexDelete(), mxml_value_s::name, mxml_index_s::nodes, mxml_index_s::num_nodes, strdup, and mxml_node_s::value.

Referenced by main().

7.69.1.8 mxml_node_t* mxmlIndexReset (mxml_index_t * *ind*)

Definition at line 463 of file mxml-index.c.

References mxml_index_s::cur_node, mxml_index_s::nodes, and mxml_index_s::num_nodes.

Referenced by main().

7.70 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-node.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- static `mxml_node_t * mxml_new (mxml_node_t *parent, mxml_type_t type)`
- void `mxmlAdd (mxml_node_t *parent, int where, mxml_node_t *child, mxml_node_t *node)`
- void `mxmlDelete (mxml_node_t *node)`
- `mxml_node_t * mxmlNewCustom (mxml_node_t *parent, void *data, void(*destroy)(void *))`
- `mxml_node_t * mxmlNewElement (mxml_node_t *parent, const char *name)`
- `mxml_node_t * mxmlNewInteger (mxml_node_t *parent, int integer)`
- `mxml_node_t * mxmlNewOpaque (mxml_node_t *parent, const char *opaque)`
- `mxml_node_t * mxmlNewReal (mxml_node_t *parent, double real)`
- `mxml_node_t * mxmlNewText (mxml_node_t *parent, int whitespace, const char *string)`
- `mxml_node_t * mxmlNewTextf (mxml_node_t *parent, int whitespace, const char *format,...)`
- void `mxmlRemove (mxml_node_t *node)`

7.70.1 Function Documentation

7.70.1.1 static `mxml_node_t * mxml_new (mxml_node_t *parent, mxml_type_t type) [static]`

Definition at line 621 of file mxml-node.c.

References MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmlAdd(), and mxml_node_s::type.

Referenced by mxmlNewCustom(), mxmlNewElement(), mxmlNewInteger(), mxmlNewOpaque(), mxmlNewReal(), mxmlNewText(), and mxmlNewTextf().

7.70.1.2 void `mxmlAdd (mxml_node_t *parent, int where, mxml_node_t *child, mxml_node_t *node)`

Definition at line 66 of file mxml-node.c.

References mxml_node_s::child, mxml_node_s::last_child, MXML_ADD_AFTER, MXML_ADD_BEFORE, mxmlRemove(), mxml_node_s::next, mxml_node_s::parent, and mxml_node_s::prev.

Referenced by add_variable(), agent_xml_compose(), agent_xml_compose__agent_data(), agent_xml_compose__create_row_nodes(), agent_xml_compose__data(), agent_xml_compose__gaf_message(), agent_xml_compose__message(), agent_xml_compose__mobile_agent(), agent_xml_compose__task(), agent_xml_compose__tasks(), fipa_envelope_Compose(), fipa_envelope_Compose__envelope(), fipa_envelope_Compose__params(), mxml_new(), scan_file(), and sort_node().

7.70.1.3 void `mxmlDelete (mxml_node_t *node)`

Definition at line 200 of file mxml-node.c.

References `mxml_value_s::attrs`, `mxml_node_s::child`, `mxml_value_u::custom`, `mxml_custom_s::data`, `mxml_custom_s::destroy`, `mxml_value_u::element`, `MXML_CUSTOM`, `MXML_ELEMENT`, `MXML_INTEGER`, `MXML_OPAQUE`, `MXML_REAL`, `MXML_TEXT`, `mxmlDelete()`, `mxmlRemove()`, `mxml_attr_s::name`, `mxml_value_s::name`, `mxml_value_s::num_attrs`, `mxml_value_u::opaque`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, `mxml_attr_s::value`, and `mxml_node_s::value`.

Referenced by `add_variable()`, `agent_datastate_Destroy()`, `fipa_envelope_Compose()`, `fipa_envelope_Parse()`, `main()`, `message_Destroy()`, `mxml_load_data()`, `mxmlDelete()`, `scan_file()`, and `sort_node()`.

7.70.1.4 `mxml_node_t* mxmlNewCustom (mxml_node_t * parent, void * data, void(*)(void *) destroy)`

Definition at line 291 of file `mxml-node.c`.

References `mxml_value_u::custom`, `mxml_custom_s::data`, `mxml_custom_s::destroy`, `MXML_CUSTOM`, `mxml_new()`, and `mxml_node_s::value`.

Referenced by `mxml_load_data()`.

7.70.1.5 `mxml_node_t* mxmlNewElement (mxml_node_t * parent, const char * name)`

Definition at line 327 of file `mxml-node.c`.

References `mxml_value_u::element`, `MXML_ELEMENT`, `mxml_new()`, `mxml_value_s::name`, `strdup`, and `mxml_node_s::value`.

Referenced by `add_variable()`, `agent_xml_compose_agent_code()`, `agent_xml_compose_agent_data()`, `agent_xml_compose_create_row_nodes()`, `agent_xml_compose_data()`, `agent_xml_compose_file()`, `agent_xml_compose_gaf_message()`, `agent_xml_compose_home()`, `agent_xml_compose_message()`, `agent_xml_compose_mobile_agent()`, `agent_xml_compose_name()`, `agent_xml_compose_owner()`, `agent_xml_compose_task()`, `agent_xml_compose_tasks()`, `agent_xml_compose_wg_code()`, `fipa_envelope_Compose_acl_representation()`, `fipa_envelope_Compose_date()`, `fipa_envelope_Compose_envelope()`, `fipa_envelope_Compose_from()`, `fipa_envelope_Compose_intended_receiver()`, `fipa_envelope_Compose_params()`, `fipa_envelope_Compose_payload_encoding()`, `fipa_envelope_Compose_to()`, `main()`, `mxml_load_data()`, `scan_file()`, and `xml_new_cdata()`.

7.70.1.6 `mxml_node_t* mxmlNewInteger (mxml_node_t * parent, int integer)`

Definition at line 365 of file `mxml-node.c`.

References `mxml_value_u::integer`, `MXML_INTEGER`, `mxml_new()`, and `mxml_node_s::value`.

Referenced by `main()`, and `mxml_load_data()`.

7.70.1.7 `mxml_node_t* mxmlNewOpaque (mxml_node_t * parent, const char * opaque)`

Definition at line 396 of file `mxml-node.c`.

References `mxml_new()`, `MXML_OPAQUE`, `mxml_value_u::opaque`, `strdup`, and `mxml_node_s::value`.

Referenced by `main()`, and `mxml_load_data()`.

7.70.1.8 `mxml_node_t* mxmlNewReal (mxml_node_t * parent, double real)`

Definition at line 434 of file `mxml-node.c`.

References mxml_new(), MXML_REAL, mxml_value_u::real, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

7.70.1.9 **mxml_node_t* mxmlNewText (mxml_node_t *parent, int whitespace, const char *string)**

Definition at line 466 of file mxml-node.c.

References mxml_new(), MXML_TEXT, strdup, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by agent_xml_compose__create_row_nodes(), agent_xml_compose_file(), agent_xml_compose_home(), agent_xml_compose_name(), agent_xml_compose_owner(), agent_xml_compose_wg_code(), fipa_envelope_Compose_acl_representation(), fipa_envelope_Compose_date(), fipa_envelope_Compose_from(), fipa_envelope_Compose_intended_receiver(), fipa_envelope_Compose_payload_encoding(), fipa_envelope_Compose_to(), main(), mxml_load_data(), and scan_file().

7.70.1.10 **mxml_node_t* mxmlNewTextf (mxml_node_t *parent, int whitespace, const char *format, ...)**

Definition at line 510 of file mxml-node.c.

References mxml_new(), mxml_strdupf(), MXML_TEXT, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

7.70.1.11 **void mxmlRemove (mxml_node_t *node)**

Definition at line 557 of file mxml-node.c.

References mxml_node_s::child, mxml_node_s::last_child, mxml_node_s::next, mxml_node_s::parent, and mxml_node_s::prev.

Referenced by mxmlAdd(), and mxmlDelete().

7.71 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-private.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- void [mxml_error](#) (const char *format,...)
- [mxml_type_t mxml_integer_cb](#) (mxml_node_t *node)
- [mxml_type_t mxml_opaque_cb](#) (mxml_node_t *node)
- [mxml_type_t mxml_real_cb](#) (mxml_node_t *node)

Variables

- void(* [mxml_error_cb](#))(const char *) = NULL

7.71.1 Function Documentation

7.71.1.1 void [mxml_error](#) (const char **format*, ...)

Definition at line 53 of file mxml-private.c.

References [mxml_error_cb](#), and [mxml_strdupf\(\)](#).

Referenced by [mxml_add_char\(\)](#), [mxml_fd_getc\(\)](#), [mxml_file_getc\(\)](#), [mxml_get_entity\(\)](#), [mxml_load_data\(\)](#), [mxml_parse_element\(\)](#), [mxml_string_getc\(\)](#), [mxmlElementSetAttr\(\)](#), [mxmlEntityAddCallback\(\)](#), and [mxmlIndexNew\(\)](#).

7.71.1.2 [mxml_type_t mxml_integer_cb](#) (mxml_node_t **node*)

Definition at line 99 of file mxml-private.c.

References [MXML_INTEGER](#).

7.71.1.3 [mxml_type_t mxml_opaque_cb](#) (mxml_node_t **node*)

Definition at line 112 of file mxml-private.c.

References [MXML_OPAQUE](#).

7.71.1.4 [mxml_type_t mxml_real_cb](#) (mxml_node_t **node*)

Definition at line 125 of file mxml-private.c.

References [MXML_REAL](#).

7.71.2 Variable Documentation

7.71.2.1 void(* mxml_error_cb)(const char *) = NULL

Definition at line 45 of file mxml-private.c.

Referenced by mxml_error(), and mxmlSetErrorCallback().

7.72 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-search.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- `mxml_node_t * mxmlFindElement (mxml_node_t *node, mxml_node_t *top, const char *name, const char *attr, const char *value, int descend)`
- `mxml_node_t * mxmlWalkNext (mxml_node_t *node, mxml_node_t *top, int descend)`
- `mxml_node_t * mxmlWalkPrev (mxml_node_t *node, mxml_node_t *top, int descend)`

7.72.1 Function Documentation

7.72.1.1 `mxml_node_t* mxmlFindElement (mxml_node_t * node, mxml_node_t * top, const char * name, const char * attr, const char * value, int descend)`

Definition at line 55 of file mxml-search.c.

References `mxml_value_u::element`, `MXML_DESCEND`, `MXML_ELEMENT`, `mxmlElementGetAttr()`, `mxmlWalkNext()`, `mxml_value_s::name`, `mxml_node_s::next`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `agent_xml_parse_fill_row_data()`, `agent_xml_parse_task()`, `agent_xml_parse_tasks()`, `fipa_envelope_HandleAclRepresentation()`, `fipa_envelope_HandleComments()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandleEnvelope()`, `fipa_envelope_HandleFrom()`, `fipa_envelope_HandleIntendedReceiver()`, `fipa_envelope_HandleParams()`, `fipa_envelope_HandlePayloadEncoding()`, `fipa_envelope_HandlePayloadLength()`, `fipa_envelope_HandleReceived()`, `fipa_envelope_HandleTo()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseAgentIdentifier()`, `fipa_envelope_ParseResolvers()`, `main()`, `MC_LoadAgentFromFile()`, `message_xml_parse()`, `mxmlIndexNew()`, `scan_file()`, `sort_node()`, `write_documentation()`, `write_element()`, `xml_find_sibling()`, and `xml_get_child()`.

7.72.1.2 `mxml_node_t* mxmlWalkNext (mxml_node_t * node, mxml_node_t * top, int descend)`

Definition at line 137 of file mxml-search.c.

References `mxml_node_s::child`, `mxml_node_s::next`, and `mxml_node_s::parent`.

Referenced by `mxmlFindElement()`, and `write_element()`.

7.72.1.3 `mxml_node_t* mxmlWalkPrev (mxml_node_t * node, mxml_node_t * top, int descend)`

Definition at line 173 of file mxml-search.c.

References `mxml_node_s::last_child`, `mxml_node_s::parent`, and `mxml_node_s::prev`.

7.73 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-set.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- int **mxmlSetCustom** (*mxml_node_t* **node*, void **data*, void(**destroy*)(void *))
- int **mxmlSetElement** (*mxml_node_t* **node*, const char **name*)
- int **mxmlSetInteger** (*mxml_node_t* **node*, int *integer*)
- int **mxmlSetOpaque** (*mxml_node_t* **node*, const char **opaque*)
- int **mxmlSetReal** (*mxml_node_t* **node*, double *real*)
- int **mxmlSetText** (*mxml_node_t* **node*, int whitespace, const char **string*)
- int **mxmlSetTextf** (*mxml_node_t* **node*, int whitespace, const char **format*,...)

7.73.1 Function Documentation

7.73.1.1 int **mxmlSetCustom** (*mxml_node_t* **node*, void **data*, void(**destroy*)(void *)) *destroy*

Definition at line 50 of file mxml-set.c.

References *mxml_value_u::custom*, *mxml_custom_s::data*, *mxml_custom_s::destroy*, *MXML_CUSTOM*, *mxml_node_s::type*, and *mxml_node_s::value*.

7.73.1.2 int **mxmlSetElement** (*mxml_node_t* **node*, const char **name*)

Definition at line 83 of file mxml-set.c.

References *mxml_value_u::element*, *MXML_ELEMENT*, *mxml_value_s::name*, *strdup*, *mxml_node_s::type*, and *mxml_node_s::value*.

7.73.1.3 int **mxmlSetInteger** (*mxml_node_t* **node*, int *integer*)

Definition at line 113 of file mxml-set.c.

References *mxml_value_u::integer*, *MXML_INTEGER*, *mxml_node_s::type*, and *mxml_node_s::value*.

7.73.1.4 int **mxmlSetOpaque** (*mxml_node_t* **node*, const char **opaque*)

Definition at line 140 of file mxml-set.c.

References *MXML_OPAQUE*, *mxml_value_u::opaque*, *strdup*, *mxml_node_s::type*, and *mxml_node_s::value*.

7.73.1.5 int **mxmlSetReal** (*mxml_node_t* **node*, double *real*)

Definition at line 170 of file mxml-set.c.

References *MXML_REAL*, *mxml_value_u::real*, *mxml_node_s::type*, and *mxml_node_s::value*.

7.73.1.6 int mxmSetText (mxm_node_t * *node*, int *whitespace*, const char * *string*)

Definition at line 197 of file mxmxml-set.c.

References MXML_TEXT, strdup, mxmxml_text_s::string, mxmxml_value_u::text, mxmxml_node_s::type, mxmxml_node_s::value, and mxmxml_text_s::whitespace.

7.73.1.7 int mxmSetTextf (mxm_node_t * *node*, int *whitespace*, const char * *format*, ...)

Definition at line 229 of file mxmxml-set.c.

References mxm_strdupf(), MXML_TEXT, mxmxml_text_s::string, mxmxml_value_u::text, mxmxml_node_s::type, mxmxml_node_s::value, and mxmxml_text_s::whitespace.

7.74 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-string.c File Reference

```
#include "config.h"
```

Functions

- `char * mxml_strdup (const char *s)`
- `char * mxml_strdupf (const char *format, va_list ap)`
- `int mxml_vsnprintf (char *buffer, size_t bufsize, const char *format, va_list ap)`

7.74.1 Function Documentation

7.74.1.1 `char* mxml_strdup (const char *s)`

Definition at line 45 of file mxml-string.c.

7.74.1.2 `char* mxml_strdupf (const char *format, va_list ap)`

Definition at line 66 of file mxml-string.c.

References `mxml_vsnprintf()`, and `strdup`.

Referenced by `mxml_error()`, `mxmlNewTextf()`, and `mxmlSetTextf()`.

7.74.1.3 `int mxml_vsnprintf (char * buffer, size_t bufsize, const char * format, va_list ap)`

Definition at line 111 of file mxml-string.c.

Referenced by `mxml_strdupf()`.

7.75 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <ctype.h>
#include <errno.h>
```

Data Structures

- struct [mxml_attr_s](#)
- struct [mxml_value_s](#)
- struct [mxml_text_s](#)
- struct [mxml_custom_s](#)
- union [mxml_value_u](#)
- struct [mxml_node_s](#)
- struct [mxml_index_s](#)

Defines

- #define [MXML_WRAP](#) 72
- #define [MXML_TAB](#) 8
- #define [MXML_NO_CALLBACK](#) 0
- #define [MXML_INTEGER_CALLBACK](#) mxml_integer_cb
- #define [MXML_OPAQUE_CALLBACK](#) mxml_opaque_cb
- #define [MXML_REAL_CALLBACK](#) mxml_real_cb
- #define [MXML_TEXT_CALLBACK](#) 0
- #define [MXML_NO_PARENT](#) 0
- #define [MXML_DESCEND](#) 1
- #define [MXML_NO_DESCEND](#) 0
- #define [MXML_DESCEND_FIRST](#) -1
- #define [MXML_WS_BEFORE_OPEN](#) 0
- #define [MXML_WS_AFTER_OPEN](#) 1
- #define [MXML_WS_BEFORE_CLOSE](#) 2
- #define [MXML_WS_AFTER_CLOSE](#) 3
- #define [MXML_ADD_BEFORE](#) 0
- #define [MXML_ADD_AFTER](#) 1
- #define [MXML_ADD_TO_PARENT](#) NULL

Typedefs

- typedef enum [mxml_type_e](#) [mxml_type_t](#)
- typedef struct [mxml_attr_s](#) [mxml_attr_t](#)
- typedef struct [mxml_value_s](#) [mxml_element_t](#)
- typedef struct [mxml_text_s](#) [mxml_text_t](#)
- typedef struct [mxml_custom_s](#) [mxml_custom_t](#)

- `typedef union mxml_value_u mxml_value_t`
- `typedef struct mxml_node_s mxml_node_t`
- `typedef struct mxml_index_s mxml_index_t`
- `typedef int(* mxml_custom_load_cb_t)(mxml_node_t *, const char *)`
- `typedef char *(* mxml_custom_save_cb_t)(mxml_node_t *)`

Enumerations

```
• enum mxml_type_e {
    MXML_ELEMENT, MXML_INTEGER, MXML_OPAQUE, MXML_REAL,
    MXML_TEXT, MXML_CUSTOM }
```

Functions

- `void mxmlAdd (mxml_node_t *parent, int where, mxml_node_t *child, mxml_node_t *node)`
- `void mxmlDelete (mxml_node_t *node)`
- `const char * mxmlElementGetAttr (mxml_node_t *node, const char *name)`
- `void mxmlElementSetAttr (mxml_node_t *node, const char *name, const char *value)`
- `int mxmlEntityAddCallback (int(*cb)(const char *name))`
- `const char * mxmlEntityGetName (int val)`
- `int mxmlEntityGetValue (const char *name)`
- `void mxmlEntityRemoveCallback (int(*cb)(const char *name))`
- `mxml_node_t * mxmlFindElement (mxml_node_t *node, mxml_node_t *top, const char *name, const char *attr, const char *value, int descend)`
- `void mxmlIndexDelete (mxml_index_t *ind)`
- `mxml_node_t * mxmlIndexEnum (mxml_index_t *ind)`
- `mxml_node_t * mxmlIndexFind (mxml_index_t *ind, const char *element, const char *value)`
- `mxml_index_t * mxmlIndexNew (mxml_node_t *node, const char *element, const char *attr)`
- `mxml_node_t * mxmlIndexReset (mxml_index_t *ind)`
- `mxml_node_t * mxmlLoadFd (mxml_node_t *top, int fd, mxml_type_t(*cb)(mxml_node_t *))`
- `mxml_node_t * mxmlLoadFile (mxml_node_t *top, FILE *fp, mxml_type_t(*cb)(mxml_node_t *))`
- `mxml_node_t * mxmlLoadString (mxml_node_t *top, const char *s, mxml_type_t(*cb)(mxml_node_t *))`
- `mxml_node_t * mxmlNewCustom (mxml_node_t *parent, void *data, void(*destroy)(void *))`
- `mxml_node_t * mxmlNewElement (mxml_node_t *parent, const char *name)`
- `mxml_node_t * mxmlNewInteger (mxml_node_t *parent, int integer)`
- `mxml_node_t * mxmlNewOpaque (mxml_node_t *parent, const char *opaque)`
- `mxml_node_t * mxmlNewReal (mxml_node_t *parent, double real)`
- `mxml_node_t * mxmlNewText (mxml_node_t *parent, int whitespace, const char *string)`
- `mxml_node_t * mxmlNewTextf (mxml_node_t *parent, int whitespace, const char *format,...)`
- `void mxmlRemove (mxml_node_t *node)`
- `char * mxmlSaveAllocString (mxml_node_t *node, const char *(*cb)(mxml_node_t *, int))`
- `int mxmlSaveFd (mxml_node_t *node, int fd, const char *(*cb)(mxml_node_t *, int))`
- `int mxmlSaveFile (mxml_node_t *node, FILE *fp, const char *(*cb)(mxml_node_t *, int))`
- `int mxmlSaveString (mxml_node_t *node, char *buffer, int bufsize, const char *(*cb)(mxml_node_t *, int))`
- `int mxmlSetCustom (mxml_node_t *node, void *data, void(*destroy)(void *))`
- `void mxmlSetCustomHandlers (mxml_custom_load_cb_t load, mxml_custom_save_cb_t save)`
- `int mxmlSetElement (mxml_node_t *node, const char *name)`

- void [mxmlSetErrorCallback](#) (void(*cb)(const char *))
- int [mxmlSetInteger](#) ([mxml_node_t](#) *node, int integer)
- int [mxmlSetOpaque](#) ([mxml_node_t](#) *node, const char *opaque)
- int [mxmlSetReal](#) ([mxml_node_t](#) *node, double real)
- int [mxmlSetText](#) ([mxml_node_t](#) *node, int whitespace, const char *string)
- int [mxmlSetTextf](#) ([mxml_node_t](#) *node, int whitespace, const char *format,...)
- [mxml_node_t](#) * [mxmlWalkNext](#) ([mxml_node_t](#) *node, [mxml_node_t](#) *top, int descend)
- [mxml_node_t](#) * [mxmlWalkPrev](#) ([mxml_node_t](#) *node, [mxml_node_t](#) *top, int descend)
- void [mxml_error](#) (const char *format,...)
- [mxml_type_t](#) [mxml_integer_cb](#) ([mxml_node_t](#) *node)
- [mxml_type_t](#) [mxml_opaque_cb](#) ([mxml_node_t](#) *node)
- [mxml_type_t](#) [mxml_real_cb](#) ([mxml_node_t](#) *node)

7.75.1 Define Documentation

7.75.1.1 #define MXML_ADD_AFTER 1

Definition at line 68 of file mxml.h.

Referenced by `add_variable()`, `agent_xml_compose()`, `agent_xml_compose__agent_data()`, `agent_xml_compose__create_row_nodes()`, `agent_xml_compose__data()`, `agent_xml_compose__gaf_message()`, `agent_xml_compose__message()`, `agent_xml_compose__mobile_agent()`, `agent_xml_compose__task()`, `agent_xml_compose__tasks()`, `fipa_envelope_Compose()`, `fipa_envelope_Compose__envelope()`, `fipa_envelope_Compose__params()`, `mxml_new()`, `mxmlAdd()`, `scan_file()`, and `sort_node()`.

7.75.1.2 #define MXML_ADD_BEFORE 0

Definition at line 67 of file mxml.h.

Referenced by `mxmlAdd()`, `scan_file()`, and `sort_node()`.

7.75.1.3 #define MXML_ADD_TO_PARENT NULL

Definition at line 69 of file mxml.h.

Referenced by `add_variable()`, `agent_xml_compose()`, `agent_xml_compose__create_row_nodes()`, `fipa_envelope_Compose()`, `fipa_envelope_Compose__envelope()`, `fipa_envelope_Compose__params()`, `mxml_new()`, `scan_file()`, and `sort_node()`.

7.75.1.4 #define MXML_DESCEND 1

Definition at line 58 of file mxml.h.

Referenced by `agent_xml_parse__tasks()`, `main()`, `MC_LoadAgentFromFile()`, `message_xml_parse()`, `mxmlFindElement()`, `mxmlIndexNew()`, and `write_element()`.

7.75.1.5 #define MXML_DESCEND_FIRST -1

Definition at line 60 of file mxml.h.

Referenced by agent_xml_parse__fill_row_data(), agent_xml_parse__task(), agent_xml_parse__tasks(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandleEnvelope(), fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleParams(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_HandleReceived(), fipa_envelope_HandleTo(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), fipa_envelope_ParseResolvers(), scan_file(), sort_node(), and write_documentation().

7.75.1.6 #define MXML_INTEGER_CALLBACK mxml_integer_cb

Definition at line 48 of file mxml.h.

Referenced by main().

7.75.1.7 #define MXML_NO_CALLBACK 0

Definition at line 47 of file mxml.h.

Referenced by acc_connection_Thread(), agent_xml_compose(), fipa_envelope_Compose(), fipa_envelope_Parse(), main(), message_InitializeFromAgent(), message_InitializeFromConnection(), and message_InitializeFromString().

7.75.1.8 #define MXML_NO_DESCEND 0

Definition at line 59 of file mxml.h.

Referenced by agent_xml_parse__task(), agent_xml_parse__tasks(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseResolvers(), main(), message_xml_parse(), write_documentation(), write_element(), xml_find_sibling(), and xml_get_deep_child().

7.75.1.9 #define MXML_NO_PARENT 0

Definition at line 56 of file mxml.h.

Referenced by agent_xml_compose__agent_code(), agent_xml_compose__create_row_nodes(), agent_xml_compose__file(), main(), and scan_file().

7.75.1.10 #define MXML_OPAQUE_CALLBACK mxml_opaque_cb

Definition at line 50 of file mxml.h.

Referenced by main().

7.75.1.11 #define MXML_REAL_CALLBACK mxml_real_cb

Definition at line 52 of file mxml.h.

Referenced by main().

7.75.1.12 #define MXML_TAB 8

Definition at line 45 of file mxml.h.

Referenced by mxml_write_ws().

7.75.1.13 #define MXML_TEXT_CALLBACK 0

Definition at line 54 of file mxml.h.

7.75.1.14 #define MXML_WRAP 72

Definition at line 44 of file mxml.h.

Referenced by mxml_write_node().

7.75.1.15 #define MXML_WS_AFTER_CLOSE 3

Definition at line 65 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

7.75.1.16 #define MXML_WS_AFTER_OPEN 1

Definition at line 63 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

7.75.1.17 #define MXML_WS_BEFORE_CLOSE 2

Definition at line 64 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

7.75.1.18 #define MXML_WS_BEFORE_OPEN 0

Definition at line 62 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

7.75.2 Typedef Documentation

7.75.2.1 typedef struct mxml_attr_s mxml_attr_t**7.75.2.2 typedef int(* mxml_custom_load_cb_t)(mxml_node_t *, const char *)**

Definition at line 142 of file mxml.h.

7.75.2.3 typedef char*(* mxml_custom_save_cb_t)(mxml_node_t *)

Definition at line 145 of file mxml.h.

7.75.2.4 **typedef struct mxml_custom_s mxml_custom_t**

7.75.2.5 **typedef struct mxml_value_s mxml_element_t**

7.75.2.6 **typedef struct mxml_index_s mxml_index_t**

7.75.2.7 **typedef struct mxml_node_s mxml_node_t**

7.75.2.8 **typedef struct mxml_text_s mxml_text_t**

7.75.2.9 **typedef enum mxml_type_e mxml_type_t**

7.75.2.10 **typedef union mxml_value_u mxml_value_t**

7.75.3 Enumeration Type Documentation

7.75.3.1 **enum mxml_type_e**

Enumerator:

MXML_ELEMENT

MXML_INTEGER

MXML_OPAQUE

MXML_REAL

MXML_TEXT

MXML_CUSTOM

Definition at line 76 of file mxml.h.

7.75.4 Function Documentation

7.75.4.1 **void mxml_error (const char **format*, ...)**

Definition at line 53 of file mxml-private.c.

References mxml_error_cb, and mxml_strdupf().

Referenced by mxml_add_char(), mxml_fd_getc(), mxml_file_getc(), mxml_get_entity(), mxml_load_data(), mxml_parse_element(), mxml_string_getc(), mxmlelementSetAttr(), mxmlEntityAddCallback(), and mxmlIndexNew().

7.75.4.2 **mxml_type_t mxml_integer_cb (mxml_node_t **node*)**

Definition at line 99 of file mxml-private.c.

References MXML_INTEGER.

7.75.4.3 **mxml_type_t mxml_opaque_cb (mxml_node_t **node*)**

Definition at line 112 of file mxml-private.c.

References MXML_OPAQUE.

7.75.4.4 `mxml_type_t mxml_real_cb (mxml_node_t * node)`

Definition at line 125 of file mxml-private.c.

References MXML_REAL.

7.75.4.5 `void mxmlAdd (mxml_node_t * parent, int where, mxml_node_t * child, mxml_node_t * node)`

Definition at line 66 of file mxml-node.c.

References `mxml_node_s::child`, `mxml_node_s::last_child`, `MXML_ADD_AFTER`, `MXML_ADD_BEFORE`, `mxmlRemove()`, `mxml_node_s::next`, `mxml_node_s::parent`, and `mxml_node_s::prev`.

Referenced by `add_variable()`, `agent_xml_compose()`, `agent_xml_compose_agent_data()`, `agent_xml_compose_create_row_nodes()`, `agent_xml_compose_data()`, `agent_xml_compose_gaf_message()`, `agent_xml_compose_message()`, `agent_xml_compose_mobile_agent()`, `agent_xml_compose_task()`, `agent_xml_compose_tasks()`, `fipa_envelope_Compose()`, `fipa_envelope_Compose_envelope()`, `fipa_envelope_Compose_params()`, `mxml_new()`, `scan_file()`, and `sort_node()`.

7.75.4.6 `void mxmlDelete (mxml_node_t * node)`

Definition at line 200 of file mxml-node.c.

References `mxml_value_s::attrs`, `mxml_node_s::child`, `mxml_value_u::custom`, `mxml_custom_s::data`, `mxml_custom_s::destroy`, `mxml_value_u::element`, `MXML_CUSTOM`, `MXML_ELEMENT`, `MXML_INTEGER`, `MXML_OPAQUE`, `MXML_REAL`, `MXML_TEXT`, `mxmlDelete()`, `mxmlRemove()`, `mxml_attr_s::name`, `mxml_value_s::name`, `mxml_value_s::numAttrs`, `mxml_value_u::opaque`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, `mxml_attr_s::value`, and `mxml_node_s::value`.

Referenced by `add_variable()`, `agent_datastate_Destroy()`, `fipa_envelope_Compose()`, `fipa_envelope_Parse()`, `main()`, `message_Destroy()`, `mxml_load_data()`, `mxmlDelete()`, `scan_file()`, and `sort_node()`.

7.75.4.7 `const char* mxmlElementGetAttr (mxml_node_t * node, const char * name)`

Definition at line 48 of file mxml-attr.c.

References `mxml_value_s::attrs`, `mxml_value_u::element`, `MXML_ELEMENT`, `mxml_attr_s::name`, `mxml_value_s::numAttrs`, `mxml_node_s::type`, `mxml_attr_s::value`, and `mxml_node_s::value`.

Referenced by `agent_xml_parse_agent_code()`, `agent_xml_parse_data()`, `agent_xml_parse_file()`, `agent_xml_parse_task()`, `agent_xml_parse_tasks()`, `fipa_envelope_HandleReceived()`, `index_compare()`, `index_find()`, `message_xml_parse_message()`, `mxml_parse_element()`, `mxmlFindElement()`, `mxmlIndexNew()`, `scan_file()`, `sort_node()`, `type_cb()`, and `write_documentation()`.

7.75.4.8 `void mxmlElementSetAttr (mxml_node_t * node, const char * name, const char * value)`

Definition at line 95 of file mxml-attr.c.

References `mxml_value_s::attrs`, `mxml_value_u::element`, `MXML_ELEMENT`, `mxml_error()`, `mxml_value_s::name`, `mxml_attr_s::name`, `mxml_value_s::numAttrs`, `strdup`, `mxml_node_s::type`, `mxml_attr_s::value`, and `mxml_node_s::value`.

Referenced by `add_variable()`, `agent_xml_compose_agent_code()`, `agent_xml_compose_create_row_nodes()`, `agent_xml_compose_data()`, `agent_xml_compose_file()`, `agent_xml_compose_message()`,

agent_xml_compose__task(), agent_xml_compose__tasks(), fipa_envelope_Compose__params(), main(), mxml_parse_element(), scan_file(), sort_node(), and update_comment().

7.75.4.9 int mxmlEntityAddCallback (int(*)(const char *name) cb)

Definition at line 69 of file mxml-entity.c.

References callbacks, mxml_error(), and num_callbacks.

7.75.4.10 const char* mxmlEntityGetName (int val)

Definition at line 95 of file mxml-entity.c.

Referenced by mxml_write_name(), and mxml_write_string().

7.75.4.11 int mxmlEntityGetValue (const char * name)

Definition at line 125 of file mxml-entity.c.

References callbacks, and num_callbacks.

Referenced by mxml_get_entity().

7.75.4.12 void mxmlEntityRemoveCallback (int(*)(const char *name) cb)

Definition at line 144 of file mxml-entity.c.

References callbacks, and num_callbacks.

7.75.4.13 mxml_node_t* mxmlFindElement (mxml_node_t * node, mxml_node_t * top, const char * name, const char * attr, const char * value, int descend)

Definition at line 55 of file mxml-search.c.

References mxml_value_u::element, MXML_DESCEND, MXML_ELEMENT, mxmlElementGetAttr(), mxmlWalkNext(), mxml_value_s::name, mxml_node_s::next, mxml_node_s::type, and mxml_node_s::value.

Referenced by agent_xml_parse__fill_row_data(), agent_xml_parse__task(), agent_xml_parse__tasks(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandleEnvelope(), fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleParams(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_HandleReceived(), fipa_envelope_HandleTo(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), fipa_envelope_ParseResolvers(), main(), MC_LoadAgentFromFile(), message_xml_parse(), mxmlIndexNew(), scan_file(), sort_node(), write_documentation(), write_element(), xml_find_sibling(), and xml_get_child().

7.75.4.14 void mxmlIndexDelete (mxml_index_t * ind)

Definition at line 62 of file mxml-index.c.

References mxml_index_s::alloc_nodes, mxml_index_s::attr, and mxml_index_s::nodes.

Referenced by main(), and mxmlIndexNew().

7.75.4.15 `mxml_node_t* mxmlIndexEnum (mxml_index_t * ind)`

Definition at line 92 of file mxmxml-index.c.

References `mxml_index_s::cur_node`, `mxml_index_s::nodes`, and `mxml_index_s::num_nodes`.

Referenced by `main()`, and `mxmlIndexFind()`.

7.75.4.16 `mxml_node_t* mxmlIndexFind (mxml_index_t * ind, const char * element, const char * value)`

Definition at line 122 of file mxmxml-index.c.

References `mxml_index_s::attr`, `mxml_index_s::cur_node`, `index_find()`, `mxmlIndexEnum()`, `mxml_index_s::nodes`, and `mxml_index_s::num_nodes`.

Referenced by `main()`.

7.75.4.17 `mxml_index_t* mxmlIndexNew (mxml_node_t * node, const char * element, const char * attr)`

Definition at line 305 of file mxmxml-index.c.

References `mxml_index_s::alloc_nodes`, `mxml_index_s::attr`, `mxml_value_u::element`, `index_sort()`, `MXML_DESCEND`, `mxml_error()`, `mxmlElementGetAttr()`, `mxmlFindElement()`, `mxmlIndexDelete()`, `mxml_value_s::name`, `mxml_index_s::nodes`, `mxml_index_s::num_nodes`, `strdup`, and `mxml_node_s::value`.

Referenced by `main()`.

7.75.4.18 `mxml_node_t* mxmlIndexReset (mxml_index_t * ind)`

Definition at line 463 of file mxmxml-index.c.

References `mxml_index_s::cur_node`, `mxml_index_s::nodes`, and `mxml_index_s::num_nodes`.

Referenced by `main()`.

7.75.4.19 `mxml_node_t* mxmlLoadFd (mxml_node_t * top, int fd, mxml_type_t(*)(mxml_node_t *) cb)`**7.75.4.20 `mxml_node_t* mxmlLoadFile (mxml_node_t * top, FILE * fp, mxml_type_t(*)(mxml_node_t *) cb)`****7.75.4.21 `mxml_node_t* mxmlLoadString (mxml_node_t * top, const char * s, mxml_type_t(*)(mxml_node_t *) cb)`****7.75.4.22 `mxml_node_t* mxmlNewCustom (mxml_node_t * parent, void * data, void(*)(void *) destroy)`**

Definition at line 291 of file mxmxml-node.c.

References `mxml_value_u::custom`, `mxml_custom_s::data`, `mxml_custom_s::destroy`, `MXML_CUSTOM`, `mxml_new()`, and `mxml_node_s::value`.

Referenced by `mxml_load_data()`.

7.75.4.23 mxml_node_t* mxmlNewElement (mxml_node_t * *parent*, const char * *name*)

Definition at line 327 of file mxml-node.c.

References mxml_value_u::element, MXML_ELEMENT, mxml_new(), mxml_value_s::name, strdup, and mxml_node_s::value.

Referenced by add_variable(), agent_xml_compose__agent_code(), agent_xml_compose__agent_data(), agent_xml_compose__create_row_nodes(), agent_xml_compose__data(), agent_xml_compose__file(), agent_xml_compose__gaf_message(), agent_xml_compose__home(), agent_xml_compose__message(), agent_xml_compose__mobile_agent(), agent_xml_compose__name(), agent_xml_compose__owner(), agent_xml_compose__task(), agent_xml_compose__tasks(), agent_xml_compose__wg_code(), fipa_envelope_Compose__acl_representation(), fipa_envelope_Compose__date(), fipa_envelope_Compose__envelope(), fipa_envelope_Compose__from(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__params(), fipa_envelope_Compose__payload_encoding(), fipa_envelope_Compose__to(), main(), mxml_load_data(), scan_file(), and xml_new_cdata().

7.75.4.24 mxml_node_t* mxmlNewInteger (mxml_node_t * *parent*, int *integer*)

Definition at line 365 of file mxml-node.c.

References mxml_value_u::integer, MXML_INTEGER, mxml_new(), and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

7.75.4.25 mxml_node_t* mxmlNewOpaque (mxml_node_t * *parent*, const char * *opaque*)

Definition at line 396 of file mxml-node.c.

References mxml_new(), MXML_OPAQUE, mxml_value_u::opaque, strdup, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

7.75.4.26 mxml_node_t* mxmlNewReal (mxml_node_t * *parent*, double *real*)

Definition at line 434 of file mxml-node.c.

References mxml_new(), MXML_REAL, mxml_value_u::real, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

7.75.4.27 mxml_node_t* mxmlNewText (mxml_node_t * *parent*, int *whitespace*, const char * *string*)

Definition at line 466 of file mxml-node.c.

References mxml_new(), MXML_TEXT, strdup, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by agent_xml_compose__create_row_nodes(), agent_xml_compose__file(), agent_xml_compose__home(), agent_xml_compose__name(), agent_xml_compose__owner(), agent_xml_compose__wg_code(), fipa_envelope_Compose__acl_representation(), fipa_envelope_Compose__date(), fipa_envelope_Compose__from(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__payload_encoding(), fipa_envelope_Compose__to(), main(), mxml_load_data(), and scan_file().

7.75.4.28 `mxml_node_t* mxmlNewTextf (mxml_node_t *parent, int whitespace, const char *format, ...)`

Definition at line 510 of file mxml-node.c.

References `mxml_new()`, `mxml_strdup()`, `MXML_TEXT`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::value`, and `mxml_text_s::whitespace`.

7.75.4.29 `void mxmlRemove (mxml_node_t *node)`

Definition at line 557 of file mxml-node.c.

References `mxml_node_s::child`, `mxml_node_s::last_child`, `mxml_node_s::next`, `mxml_node_s::parent`, and `mxml_node_s::prev`.

Referenced by `mxmlAdd()`, and `mxmlDelete()`.

7.75.4.30 `char* mxmlSaveAllocString (mxml_node_t *node, const char *(*)(mxml_node_t *, int) cb)`

7.75.4.31 `int mxmlSaveFd (mxml_node_t *node, int fd, const char *(*)(mxml_node_t *, int) cb)`

7.75.4.32 `int mxmlSaveFile (mxml_node_t *node, FILE *fp, const char *(*)(mxml_node_t *, int) cb)`

7.75.4.33 `int mxmlSaveString (mxml_node_t *node, char *buffer, int bufsize, const char *(*)(mxml_node_t *, int) cb)`

7.75.4.34 `int mxmlSetCustom (mxml_node_t *node, void *data, void(*)(void *) destroy)`

Definition at line 50 of file mxml-set.c.

References `mxml_value_u::custom`, `mxml_custom_s::data`, `mxml_custom_s::destroy`, `MXML_CUSTOM`, `mxml_node_s::type`, and `mxml_node_s::value`.

7.75.4.35 `void mxmlSetCustomHandlers (mxml_custom_load_cb_t load, mxml_custom_save_cb_t save)`

Definition at line 457 of file mxml-file.c.

References `mxml_custom_load_cb`, and `mxml_custom_save_cb`.

7.75.4.36 `int mxmlSetElement (mxml_node_t *node, const char *name)`

Definition at line 83 of file mxml-set.c.

References `mxml_value_u::element`, `MXML_ELEMENT`, `mxml_value_s::name`, `strdup`, `mxml_node_s::type`, and `mxml_node_s::value`.

7.75.4.37 `void mxmlSetErrorCallback (void(*)(const char *) cb)`

Definition at line 472 of file mxml-file.c.

References `mxml_error_cb`.

7.75.4.38 int mxmlSetInteger (mxml_node_t * *node*, int *integer*)

Definition at line 113 of file mxml-set.c.

References mxml_value_u::integer, MXML_INTEGER, mxml_node_s::type, and mxml_node_s::value.

7.75.4.39 int mxmlSetOpaque (mxml_node_t * *node*, const char * *opaque*)

Definition at line 140 of file mxml-set.c.

References MXML_OPAQUE, mxml_value_u::opaque, strdup, mxml_node_s::type, and mxml_node_s::value.

7.75.4.40 int mxmlSetReal (mxml_node_t * *node*, double *real*)

Definition at line 170 of file mxml-set.c.

References MXML_REAL, mxml_value_u::real, mxml_node_s::type, and mxml_node_s::value.

7.75.4.41 int mxmlSetText (mxml_node_t * *node*, int *whitespace*, const char * *string*)

Definition at line 197 of file mxml-set.c.

References MXML_TEXT, strdup, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and mxml_text_s::whitespace.

7.75.4.42 int mxmlSetTextf (mxml_node_t * *node*, int *whitespace*, const char * *format*, ...)

Definition at line 229 of file mxml-set.c.

References mxml_strdupf(), MXML_TEXT, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and mxml_text_s::whitespace.

7.75.4.43 mxml_node_t* mxmlWalkNext (mxml_node_t * *node*, mxml_node_t * *top*, int *descend*)

Definition at line 137 of file mxml-search.c.

References mxml_node_s::child, mxml_node_s::next, and mxml_node_s::parent.

Referenced by mxmlFindElement(), and write_element().

7.75.4.44 mxml_node_t* mxmlWalkPrev (mxml_node_t * *node*, mxml_node_t * *top*, int *descend*)

Definition at line 173 of file mxml-search.c.

References mxml_node_s::last_child, mxml_node_s::parent, and mxml_node_s::prev.

7.76 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml/doc.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Defines

- #define STATE_NONE 0
- #define STATE_PREPROCESSOR 1
- #define STATE_C_COMMENT 2
- #define STATE_CXX_COMMENT 3
- #define STATE_STRING 4
- #define STATE_CHARACTER 5
- #define STATE_IDENTIFIER 6

Functions

- static mxml_node_t * add_variable (mxml_node_t *parent, const char *name, mxml_node_t *type)
- static void safe_strcpy (char *dst, const char *src)
- static int scan_file (const char *filename, FILE *fp, mxml_node_t *doc)
- static void sort_node (mxml_node_t *tree, mxml_node_t *func)
- static void update_comment (mxml_node_t *parent, mxml_node_t *comment)
- static void write_documentation (mxml_node_t *doc)
- static void write_element (mxml_node_t *doc, mxml_node_t *element)
- static void write_string (const char *s)
- static const char * ws_cb (mxml_node_t *node, int where)
- int main (int argc, char *argv[])

7.76.1 Define Documentation

7.76.1.1 #define STATE_C_COMMENT 2

Definition at line 129 of file mxmldoc.c.

Referenced by scan_file().

7.76.1.2 #define STATE_CHARACTER 5

Definition at line 132 of file mxmldoc.c.

Referenced by scan_file().

7.76.1.3 #define STATE_CXX_COMMENT 3

Definition at line 130 of file mxmldoc.c.

Referenced by scan_file().

7.76.1.4 #define STATE_IDENTIFIER 6

Definition at line 133 of file mxml.doc.c.

Referenced by scan_file().

7.76.1.5 #define STATE_NONE 0

Definition at line 127 of file mxml.doc.c.

Referenced by scan_file().

7.76.1.6 #define STATE_PREPROCESSOR 1

Definition at line 128 of file mxml.doc.c.

Referenced by scan_file().

7.76.1.7 #define STATE_STRING 4

Definition at line 131 of file mxml.doc.c.

Referenced by scan_file().

7.76.2 Function Documentation

7.76.2.1 static mxml_node_t * add_variable (mxml_node_t * parent, const char * name, mxml_node_t * type) [static]

Definition at line 313 of file mxml.doc.c.

References mxml_node_s::child, mxml_node_s::last_child, MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmlAdd(), mxmlDelete(), mxmlElementSetAttr(), mxmlNewElement(), mxml_node_s::next, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by scan_file().

7.76.2.2 int main (int argc, char * argv[])

Definition at line 159 of file mxml.doc.c.

References MXML_DESCEND, MXML_NO_CALLBACK, mxmlDelete(), mxmlElementSetAttr(), mxmlFindElement(), mxmlLoadFile(), mxmlNewElement(), mxmlSaveFile(), scan_file(), write_documentation(), and ws_cb().

7.76.2.3 static void safe_strcpy (char * dst, const char * src) [static]

Definition at line 427 of file mxml.doc.c.

Referenced by update_comment().

7.76.2.4 static int scan_file (const char *filename, FILE *fp, mxml_node_t *doc) [static]

Definition at line 442 of file mxmldoc.c.

References add_variable(), mxml_node_s::child, mxml_value_u::element, mxml_node_s::last_child, MXML_ADD_AFTER, MXML_ADD_BEFORE, MXML_ADD_TO_PARENT, MXML_DESCEND_FIRST, MXML_NO_PARENT, mxmlAdd(), mxmlDelete(), mxmlElementGetAttr(), mxmlElementSetAttr(), mxmlFindElement(), mxmlNewElement(), mxmlNewText(), mxml_value_s::name, mxml_node_s::next, sort_node(), STATE_C_COMMENT, STATE_CHARACTER, STATE_CXX_COMMENT, STATE_IDENTIFIER, STATE_NONE, STATE_PREPROCESSOR, STATE_STRING, mxml_text_s::string, mxml_value_u::text, update_comment(), mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by main().

7.76.2.5 static void sort_node (mxml_node_t *tree, mxml_node_t *func) [static]

Definition at line 1617 of file mxmldoc.c.

References mxml_node_s::child, mxml_value_u::element, MXML_ADD_AFTER, MXML_ADD_BEFORE, MXML_ADD_TO_PARENT, MXML_DESCEND_FIRST, mxmlAdd(), mxmlDelete(), mxmlElementGetAttr(), mxmlElementSetAttr(), mxmlFindElement(), mxml_value_s::name, mxml_node_s::next, mxml_node_s::parent, and mxml_node_s::value.

Referenced by scan_file().

7.76.2.6 static void update_comment (mxml_node_t *parent, mxml_node_t *comment) [static]

Definition at line 1705 of file mxmldoc.c.

References mxml_value_u::element, mxmlElementSetAttr(), mxml_value_s::name, safe_strcpy(), mxml_text_s::string, mxml_value_u::text, and mxml_node_s::value.

Referenced by scan_file().

7.76.2.7 static void write_documentation (mxml_node_t *doc) [static]

Definition at line 1805 of file mxmldoc.c.

References mxml_node_s::child, MXML_DESCEND_FIRST, MXML_NO_DESCEND, MXML_VERSION, mxmlElementGetAttr(), mxmlFindElement(), and write_element().

Referenced by main().

7.76.2.8 static void write_element (mxml_node_t *doc, mxml_node_t *element) [static]

Definition at line 2615 of file mxmldoc.c.

References mxml_node_s::child, MXML_DESCEND, MXML_NO_DESCEND, MXML_TEXT, mxmlFindElement(), mxmlWalkNext(), mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, mxml_text_s::whitespace, and write_string().

Referenced by write_documentation().

7.76.2.9 static void write_string (const char * s) [static]

Definition at line 2660 of file mxml/doc.c.

Referenced by write_element().

7.76.2.10 static const char * ws_cb (mxml_node_t * node, int where) [static]

Definition at line 2718 of file mxml/doc.c.

References mxml_value_u::element, MXML_WS_AFTER_CLOSE, MXML_WS_AFTER_OPEN, MXML_WS_BEFORE_CLOSE, MXML_WS_BEFORE_OPEN, mxml_value_s::name, mxml_node_s::parent, and mxml_node_s::value.

Referenced by main().

7.77 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/class.cxx File Reference

Data Structures

- class [foo_c](#)

Variables

- [foo_c f](#)
- [foo_c foo](#)
- [bar = b](#)

7.77.1 Variable Documentation

7.77.1.1 bar = b

Definition at line 77 of file class.cxx.

7.77.1.2 foo_c f

Referenced by [foo_float_function\(\)](#), [main\(\)](#), [MC_Initialize\(\)](#), [md5_check\(\)](#), [md5_file\(\)](#), [read_encrypted_file\(\)](#), [sha1_check\(\)](#), [sha1_file\(\)](#), [sha2_check\(\)](#), [sha2_file\(\)](#), [sha4_file\(\)](#), [x509parse_crtfile\(\)](#), and [x509parse_keyfile\(\)](#).

7.77.1.3 foo_c foo

7.78 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/enum.cxx File Reference

Typedefs

- `typedef enum foo_enum_e foo_enum_t`

Enumerations

- `enum foo_enum_e { FOO_ONE, FOO_TWO, FOO_RED, FOO_BLUE }`

7.78.1 Typedef Documentation

7.78.1.1 `typedef enum foo_enum_e foo_enum_t`

7.78.2 Enumeration Type Documentation

7.78.2.1 `enum foo_enum_e`

Enumerator:

FOO_ONE

FOO_TWO

FOO_RED

FOO_BLUE

Definition at line 1 of file enum.cxx.

7.79 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/function.cxx

File Reference

Functions

- void [foo_void_function \(int one, float *two, const char *three\)](#)
- float [foo_float_function \(int one, const char *two\)](#)
- int [foo_default_string \(int one, const char *two="2"\)](#)
- int [foo_default_int \(int one, int two=2\)](#)

7.79.1 Function Documentation

7.79.1.1 int foo_default_int (int *one*, int *two* = 2)

Definition at line 65 of file function.cxx.

7.79.1.2 int foo_default_string (int *one*, const char * *two* = "2")

Definition at line 45 of file function.cxx.

7.79.1.3 float foo_float_function (int *one*, const char * *two*)

Definition at line 26 of file function.cxx.

References f.

7.79.1.4 void foo_void_function (int *one*, float * *two*, const char * *three*)

Definition at line 6 of file function.cxx.

7.80 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/struct.cxx File Reference

Data Structures

- struct [foo_s](#)

Typedefs

- typedef struct [foo_s](#) [foo_t](#)

7.80.1 Typedef Documentation

7.80.1.1 [typedef struct foo_s foo_t](#)

7.81 /home/dko/Projects/mobilec/src/mxml-2.2.2/testmxml.c File Reference

```
#include "mxml.h"
#include <unistd.h>
#include "config.h"
#include <fcntl.h>
```

Functions

- [mxml_type_t type_cb \(mxml_node_t *node\)](#)
- [const char * whitespace_cb \(mxml_node_t *node, int where\)](#)
- [int main \(int argc, char *argv\[\]\)](#)

7.81.1 Function Documentation

7.81.1.1 int main (int *argc*, char * *argv*[])

Definition at line 60 of file testmxml.c.

References `mxml_node_s::child`, `mxml_value_u::element`, `f`, `mxml_value_u::integer`, `mxml_node_s::last_child`, `MXML_DESCEND`, `MXML_ELEMENT`, `MXML_INTEGER`, `MXML_INTEGER_CALLBACK`, `MXML_NO_CALLBACK`, `MXML_NO_DESCEND`, `MXML_NO_PARENT`, `MXML_OPAQUE`, `MXML_OPAQUE_CALLBACK`, `MXML_REAL`, `MXML_REAL_CALLBACK`, `MXML_TEXT`, `mxmlDelete()`, `mxmlFindElement()`, `mxmlIndexDelete()`, `mxmlIndexEnum()`, `mxmlIndexFind()`, `mxmlIndexNew()`, `mxmlIndexReset()`, `mxmlLoadFd()`, `mxmlLoadFile()`, `mxmlLoadString()`, `mxmlNewElement()`, `mxmlNewInteger()`, `mxmlNewOpaque()`, `mxmlNewReal()`, `mxmlNewText()`, `mxmlSaveFd()`, `mxmlSaveFile()`, `mxmlSaveString()`, `mxml_value_s::name`, `mxml_node_s::next`, `mxml_index_s::num_nodes`, `mxml_value_u::opaque`, `mxml_value_u::real`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, `type_cb()`, `mxml_node_s::value`, `mxml_text_s::whitespace`, and `whitespace_cb()`.

7.81.1.2 mxml_type_t type_cb (mxml_node_t * *node*)

Definition at line 543 of file testmxml.c.

References `mxml_value_u::element`, `MXML_INTEGER`, `MXML_OPAQUE`, `MXML_REAL`, `MXML_TEXT`, `mxmlElementGetAttr()`, `mxml_value_s::name`, and `mxml_node_s::value`.

Referenced by `main()`.

7.81.1.3 const char* whitespace_cb (mxml_node_t * *node*, int *where*)

Definition at line 572 of file testmxml.c.

References `mxml_node_s::child`, `mxml_value_u::element`, `MXML_WS_AFTER_CLOSE`, `MXML_WS_AFTER_OPEN`, `MXML_WS_BEFORE_CLOSE`, `MXML_WS_BEFORE_OPEN`, `mxml_value_s::name`, `mxml_node_s::parent`, and `mxml_node_s::value`.

7.82 /home/dko/Projects/mobilec/src/mxml-2.2.2/winconfig.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdarg.h>
#include <ctype.h>
```

Defines

- #define **MXML_VERSION** "Mini-XML v2.2.2"
- #define **HAVE_VSNPRINTF** 1
- #define **HAVE_STRDUP** 1
- #define **strdup** mxml_strdup
- #define **vsnprintf** mxml_vsnprintf

Functions

- char * **mxml_strdup** (const char *)
- char * **mxml_strdup** (const char *, va_list)
- int **mxml_vsnprintf** (char *, size_t, const char *, va_list)

7.82.1 Define Documentation

7.82.1.1 #define HAVE_STRDUP 1

Definition at line 49 of file winconfig.h.

7.82.1.2 #define HAVE_VSNPRINTF 1

Definition at line 42 of file winconfig.h.

7.82.1.3 #define MXML_VERSION "Mini-XML v2.2.2"

Definition at line 35 of file winconfig.h.

7.82.1.4 #define strdup mxml_strdup

Definition at line 58 of file winconfig.h.

Referenced by acc_connection_Thread(), agent_AddPersistentVariable(), agent_file_data_Copy(), agent_file_data_InitializeFromFilename(), agent_file_data_NewWithData(), agent_task_Copy(), agent_xml_parse_Task(), connection_Copy(), fipa_acl_envelope_Received_Copy(), fipa_acl_Param_Copy(), fipa_agent_identifier_Copy(), fipa_message_string_Copy(), fipa_number_Copy(), fipa_string_Copy(), fipa_url_Copy(), fipa_url_Parse(), fipa_word_Copy(), interpreter_variable_data_Copy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(),

MC_AclAddReceiver(), MC_AclAddReplyTo(), MC_AclGetSender(), MC_AclSend(), MC_AclSetContent(), MC_AclSetConversationID(), MC_AclSetSender(), MC_AddStationaryAgent(), MC_AgentAddTask(), MC_AgentAttachFile(), MC_AgentListFiles(), MC_AgentVariableSave(), MC_ComposeAgentWithWorkgroup(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_Initialize(), MC_SaveData_chdl(), message_InitializeFromAgent(), mtp_http_InitializeFromConnection(), mtp_http_Parse(), mxml_strdupf(), mxmlElementSetAttr(), mxmlIndexNew(), mxmlNewElement(), mxmlNewOpaque(), mxmlNewText(), mxmlSaveAllocString(), mxmlSetElement(), mxmlSetOpaque(), and mxmlSetText().

7.82.1.5 #define **vsnprintf** **mxml_vsnprintf**

Definition at line 65 of file winconfig.h.

Referenced by debug_fmt().

7.82.2 Function Documentation

7.82.2.1 **char* mxml_strdup (const char *)**

Definition at line 45 of file mxml-string.c.

7.82.2.2 **char* mxml_strdupf (const char *, va_list)**

Definition at line 66 of file mxml-string.c.

References mxml_vsnprintf(), and strdup.

7.82.2.3 **int mxml_vsnprintf (char *, size_t, const char *, va_list)**

Definition at line 111 of file mxml-string.c.

Referenced by mxml_strdupf().

7.83 /home/dko/Projects/mobilec/src/winconfig.h File Reference

Defines

- #define PACKAGE_STRING "MobileC V2.0.0"
- #define PACKAGE_VERSION "2.0.0"
- #define strtok_r(buf, delim, save_ptr) strtok(buf, delim)
- #define strdup(str) _strdup(str)

7.83.1 Define Documentation

7.83.1.1 #define PACKAGE_STRING "MobileC V2.0.0"

Definition at line 4 of file winconfig.h.

Referenced by mtp_http_InitializeFromConnection().

7.83.1.2 #define PACKAGE_VERSION "2.0.0"

Definition at line 5 of file winconfig.h.

Referenced by mtp_http_ComposeMessage(), mtp_http_CreateMessage(), and udplisten_Thread().

7.83.1.3 #define strdup(str) _strdup(str)

Definition at line 8 of file winconfig.h.

7.83.1.4 #define strtok_r(buf, delim, save_ptr) strtok(buf, delim)

Definition at line 6 of file winconfig.h.

Referenced by agent_xml_parse_fill_row_data(), message_InitializeFromAgent(), message_send_Thread(), and message_xml_parse_message().

7.84 /home/dko/Projects/mobilec/src/rwlock.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include "include/rwlock.h"
```

Functions

- int [rwlock_wrlock \(rwlock_t *rwlock\)](#)
- int [rwlock_wrunlock \(rwlock_t *rwlock\)](#)
- int [rwlock_rdlock \(rwlock_t *rwlock\)](#)
- int [rwlock_runlock \(rwlock_t *rwlock\)](#)
- int [rwlock_rdwait \(rwlock_t *rwlock\)](#)
- [rwlock_t * rwlock_New \(void\)](#)
- int [rwlock_Destroy \(rwlock_t *rwlock\)](#)

7.84.1 Function Documentation

7.84.1.1 int [rwlock_Destroy \(rwlock_t * rwlock\)](#)

Definition at line 61 of file rwlock.c.

References COND_DESTROY, rwlock_s::lock, MUTEX_DESTROY, rwlock_s::reader_cond, and rwlock_s::writer_cond.

Referenced by ListTerminate().

7.84.1.2 [rwlock_t* rwlock_New \(void\)](#)

Definition at line 48 of file rwlock.c.

References COND_INIT, COND_NEW, rwlock_s::lock, MUTEX_INIT, MUTEX_NEW, rwlock_s::reader_cond, rwlock_s::readers, and rwlock_s::writer_cond.

Referenced by ListInitialize().

7.84.1.3 int [rwlock_rdlock \(rwlock_t * rwlock\)](#)

Definition at line 21 of file rwlock.c.

References rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and rwlock_s::readers.

Referenced by ListRDLock().

7.84.1.4 int [rwlock_runlock \(rwlock_t * rwlock\)](#)

Definition at line 29 of file rwlock.c.

References COND_SIGNAL, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::readers, and rwlock_s::writer_cond.

Referenced by ListRDUnlock().

7.84.1.5 int rwlock_rdwait (rwlock_t * *rwlock*)

Definition at line 38 of file rwlock.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::reader_cond, and rwlock_s::readers.

Referenced by ListWait().

7.84.1.6 int rwlock_wrlock (rwlock_t * *rwlock*)

Definition at line 5 of file rwlock.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, rwlock_s::readers, and rwlock_s::writer_cond.

Referenced by ListWRLock().

7.84.1.7 int rwlock_wrunlock (rwlock_t * *rwlock*)

Definition at line 14 of file rwlock.c.

References COND_SIGNAL, rwlock_s::lock, MUTEX_UNLOCK, and rwlock_s::reader_cond.

Referenced by ListWRUnlock().

7.85 /home/dko/Projects/mobilec/src/security/asm.c File Reference

```
#include "../include/mc_platform.h"
#include "../include/message.h"
#include "asm.h"
#include "asm_message_composer.h"
#include <mxml.h>
#include "config.h"
#include "bignum.h"
#include "asm_node.h"
```

7.86 /home/dko/Projects/mobilec/src/security/asm.h File Reference

```
#include "config.h"
#include "../mc_list/list.h"
#include "asm_node.h"
```

7.87 /home/dko/Projects/mobilec/src/security/asm_message_- composer.c File Reference

```
#include "asm_message_composer.h"
#include "config.h"
#include "../include/mc_platform.h"
```

7.88 /home/dko/Projects/mobilec/src/security/asm_message_composer.h File Reference

```
#include <mxml.h>
#include "asm.h"
#include "config.h"
```

7.89 /home/dko/Projects/mobilec/src/security/asm_message_parser.c File Reference

```
#include "asm_message_parser.h"
#include "../include/mc_error.h"
#include "../include/xml_parser.h"
#include "asm_node.h"
#include "config.h"
#include "../include/xml_helper.h"
```

7.90 /home/dko/Projects/mobilec/src/security/asm_message_parser.h File Reference

```
#include "../include/mc_error.h"
#include "../include/xml_parser.h"
#include "asm_node.h"
#include "config.h"
```

7.91 /home/dko/Projects/mobilec/src/security/asm_node.c File Reference

```
#include <netdb.h>
#include "config.h"
#include "asm.h"
#include "asm_message_parser.h"
#include "asm_node.h"
#include "xyssl-0.9/include/xyssl/havege.h"
#include <stdio.h>
```

7.92 /home/dko/Projects/mobilec/src/security/asm_node.h File Reference

```
#include <mxml.h>
#include <netinet/in.h>
#include "../include/macros.h"
#include "../include/message.h"
#include "xyssl-0.9/include/xyssl/dhm.h"
#include "bignum.h"
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "config.h"
```

7.93 /home/dko/Projects/mobilec/src/security/interface.c File Reference

```
#include "interface.h"
#include <sys/socket.h>
```

Functions

- static void [separate_key_parts](#) (char *key, char *N, char *E, char *D, char *P, char *Q, char *DP, char *DQ, char *QP)
- int [rsa_encryption](#) (char *publickey, char *plaintext, char *ciphertext)
- int [rsa_decryption](#) (char *ciphertext, char *plaintext, char *privatekey)
- static int [append_nonce_to_MA](#) (int *my_nonce, char *MA_file)
- static int [remove_nonce_from_MA](#) (char *MA_file)
- static int [extract_nonce_from_MA](#) (int sockfd, int *my_nonce, char *MA_file)
- int [read_known_host_file](#) (char *pubkey, char *hname, char *filename)
- int [read_encrypted_file](#) (char *enfile, char *string, unsigned char *passphase)
- int [initiate_migration_process](#) (int new_fd, int *my_nonce, char *pubkey, char *privkey, unsigned char *aes_key)
- int [reply_migration_process](#) (int sockfd, int *my_nonce, char *pubkey, char *privkey, unsigned char *aes_key)
- void [generate_AES_key](#) (char *key)
- int [aes_en_de](#) (int mode, char *infile, char *outfile, unsigned char *AES_key, int *nonce, int new_fd)
- int [send_AES_en_MA](#) (int sockfd, int *my_nonce, char *outfile, char *pubkey)
- int [receive_AES_en_MA](#) (int new_fd, int *nonce, char *infile, char *privkey)
- int [generate_RSA_keys_plaintext](#) (char *pubkeyfile, char *privkeyfile)
- int [generate_RSA_keys_ciphertext](#) (char *pubkeyfile, char *privkeyfile, unsigned char *passphrase)

7.93.1 Function Documentation

7.93.1.1 int aes_en_de (int *mode*, char * *infile*, char * *outfile*, unsigned char * *AES_key*, int * *nonce*, int *new_fd*)

Definition at line 1122 of file interface.c.

References `aes_crypt_ecb()`, `AES_DECRYPT`, `AES_ENCRYPT`, `aes_setkey_dec()`, `aes_setkey_enc()`, `append_nonce_to_MA()`, `extract_nonce_from_MA()`, `MODE_DECRYPT`, `MODE_ENCRYPT`, `sha2_finish()`, `sha2_hmac_finish()`, `sha2_hmac_starts()`, `sha2_hmac_update()`, `sha2_starts()`, and `sha2_update()`.

Referenced by `auth_rece_send_msg()`, `generate_RSA_keys_ciphertext()`, `read_encrypted_file()`, and `rece_de_msg()`.

7.93.1.2 static int append_nonce_to_MA (int * *my_nonce*, char * *MA_file*) [static]

Definition at line 187 of file interface.c.

Referenced by `aes_en_de()`.

**7.93.1.3 static int extract_nonce_from_MA (int *sockfd*, int * *my_nonce*, char * *MA_file*)
[static]**

Definition at line 264 of file interface.c.

References remove_nonce_from_MA(), and send.

Referenced by aes_en_de().

7.93.1.4 void generate_AES_key (char * *key*)

Definition at line 1099 of file interface.c.

References havege_init(), and havege_rand().

Referenced by initiate_migration_process(), and reply_migration_process().

7.93.1.5 int generate_RSA_keys_ciphertext (char * *pubkeyfile*, char * *privkeyfile*, unsigned char * *passphrase*)

Definition at line 1752 of file interface.c.

References aes_en_de(), rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

Referenced by main().

7.93.1.6 int generate_RSA_keys_plaintext (char * *pubkeyfile*, char * *privkeyfile*)

Definition at line 1693 of file interface.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

Referenced by main().

7.93.1.7 int initiate_migration_process (int *new_fd*, int * *my_nonce*, char * *pubkey*, char * *privkey*, unsigned char * *aes_key*)

Definition at line 432 of file interface.c.

References generate_AES_key(), havege_init(), havege_rand(), md5(), rsa_decryption(), rsa_encryption(), and send.

Referenced by auth_rece_send_msg().

7.93.1.8 int read_encrypted_file (char * *enfile*, char * *string*, unsigned char * *passphase*)

Definition at line 398 of file interface.c.

References aes_en_de(), and f.

Referenced by MC_Initialize().

7.93.1.9 int read_known_host_file (char *pubkey, char *hname, char *filename)

Definition at line 329 of file interface.c.

Referenced by auth_conn_rece_key(), and auth_rece_send_msg().

7.93.1.10 int receive_AES_en_MA (int new_fd, int *nonce, char *infile, char *privkey)

Definition at line 1555 of file interface.c.

References rsa_decryption().

Referenced by rece_de_msg().

7.93.1.11 static int remove_nonce_from_MA (char *MA_file) [static]

Definition at line 220 of file interface.c.

Referenced by extract_nonce_from_MA().

7.93.1.12 int reply_migration_process (int sockfd, int *my_nonce, char *pubkey, char *privkey, unsigned char *aes_key)

Definition at line 777 of file interface.c.

References generate_AES_key(), md5(), rsa_decryption(), rsa_encryption(), and send.

Referenced by auth_conn_rece_key().

7.93.1.13 int rsa_decryption (char *ciphertext, char *plaintext, char *privatekey)

Definition at line 133 of file interface.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, rsa_context::len, mpi_msb(), mpi_read_mystring(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_check_privkey(), RSA_DE, rsa_init(), rsa_pkcs1_decrypt(), RSA_PKCS_V15, and separate_key_parts().

Referenced by initiate_migration_process(), receive_AES_en_MA(), and reply_migration_process().

7.93.1.14 int rsa_encryption (char *publickey, char *plaintext, char *ciphertext)

Definition at line 91 of file interface.c.

References rsa_context::E, rsa_context::len, mpi_msb(), mpi_read_mystring(), rsa_context::N, rsa_check_pubkey(), RSA_EN, rsa_init(), rsa_pkcs1_encrypt(), RSA_PKCS_V15, and separate_key_parts().

Referenced by initiate_migration_process(), reply_migration_process(), and send_AES_en_MA().

7.93.1.15 int send_AES_en_MA (int sockfd, int *my_nonce, char *outfile, char *pubkey)

Definition at line 1419 of file interface.c.

References rsa_encryption(), and send.

Referenced by auth_rece_send_msg().

7.93.1.16 static void separate_key_parts (char *key, char *N, char *E, char *D, char *P, char *Q, char *DP, char *DQ, char *QP) [static]

Definition at line 28 of file interface.c.

Referenced by rsa_decryption(), and rsa_encryption().

7.94 /home/dko/Projects/mobilec/src/security/interface.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <sys/stat.h>
#include "xyssl-0.9/include/xyssl/havege.h"
#include "xyssl-0.9/include/xyssl/bignum.h"
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "xyssl-0.9/include/xyssl/sha2.h"
#include "xyssl-0.9/include/xyssl/aes.h"
```

Defines

- #define PATH xyssl-0.9/include/xyssl
- #define MODE_ENCRYPT 0
- #define MODE_DECRYPT 1
- #define MAXDATASIZE 4096
- #define KEY_SIZE 1024
- #define EXPONENT 65537
- #define RSA_EN 0
- #define RSA_DE 1

Functions

- int **read_known_host_file** (char *pubkey, char *hname, char *filename)
- int **read_encrypted_file** (char *enfile, char *string, unsigned char *passphase)
- int **rsa_encryption** (char *publickey, char *plaintext, char *ciphertext)
- int **rsa_decryption** (char *ciphertext, char *plaintext, char *privatekeyfile)
- int **initiate_migration_process** (int sockfd, int *nonce, char *publickey, char *privatekey, unsigned char *aes_key)
- int **reply_migration_process** (int new_fd, int *nonce, char *publickey, char *privatekey, unsigned char *aes_key)
- void **generate_AES_key** (char *key)
- int **generate_encrypt_send_AES_key** (int sockfd, int *nonce, unsigned char *key, char *publickey, char *privkey)
- int **receive_decrypt_AES_key** (int new_fd, int *nonce, unsigned char *key, char *privkey, char *publickey)
- int **aes_en_de** (int mode, char *infile, char *outfile, unsigned char *AES_key, int *nonce, int sockfd)
- int **send_AES_en_MA** (int sockfd, int *nonce, char *outfile, char *peer_pubkey)
- int **receive_AES_en_MA** (int new_fd, int *nonce, char *infile, char *privatekey)
- int **receiving_verifying_MA_RSA** (int sockfd, char *privkeyfile)
- int **receiving_decrypting_MA_RSA** (int new_fd, char *privkeyfile)
- int **generate_RSA_keys_plaintext** (char *pubkeyfile, char *privkeyfile)
- int **generate_RSA_keys_ciphertext** (char *pubkeyfile, char *privkeyfile, unsigned char *passphrase)

7.94.1 Define Documentation

7.94.1.1 #define EXPONENT 65537

Definition at line 25 of file interface.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

7.94.1.2 #define KEY_SIZE 1024

Definition at line 24 of file interface.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

7.94.1.3 #define MAXDATASIZE 4096

Definition at line 22 of file interface.h.

7.94.1.4 #define MODE_DECRYPT 1

Definition at line 21 of file interface.h.

Referenced by aes_en_de(), and main().

7.94.1.5 #define MODE_ENCRYPT 0

Definition at line 20 of file interface.h.

Referenced by aes_en_de(), and main().

7.94.1.6 #define PATH xyssl-0.9/include/xyssl

Definition at line 9 of file interface.h.

7.94.1.7 #define RSA_DE 1

Definition at line 28 of file interface.h.

Referenced by rsa_decryption().

7.94.1.8 #define RSA_EN 0

Definition at line 27 of file interface.h.

Referenced by rsa_encryption().

7.94.2 Function Documentation

7.94.2.1 int aes_en_de (int mode, char * infile, char * outfile, unsigned char * AES_key, int * nonce, int sockfd)

Definition at line 1122 of file interface.c.

References aes_crypt_ecb(), AES_DECRYPT, AES_ENCRYPT, aes_setkey_dec(), aes_setkey_enc(), append_nonce_to_MA(), extract_nonce_from_MA(), MODE_DECRYPT, MODE_ENCRYPT, sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_update(), sha2_starts(), and sha2_update().

Referenced by auth_rece_send_msg(), generate_RSA_keys_ciphertext(), read_encrypted_file(), and rece_de_msg().

7.94.2.2 void generate_AES_key (char * key)

Definition at line 1099 of file interface.c.

References havege_init(), and havege_rand().

Referenced by initiate_migration_process(), and reply_migration_process().

7.94.2.3 int generate_encrypt_send_AES_key (int sockfd, int * nonce, unsigned char * key, char * publickey, char * privkey)

7.94.2.4 int generate_RSA_keys_ciphertext (char * pubkeyfile, char * privkeyfile, unsigned char * passphrase)

Definition at line 1752 of file interface.c.

References aes_en_de(), rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

Referenced by main().

7.94.2.5 int generate_RSA_keys_plaintext (char * pubkeyfile, char * privkeyfile)

Definition at line 1693 of file interface.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

Referenced by main().

7.94.2.6 int initiate_migration_process (int sockfd, int * nonce, char * publickey, char * privatekey, unsigned char * aes_key)

Definition at line 432 of file interface.c.

References generate_AES_key(), havege_init(), havege_rand(), md5(), rsa_decrypt(), rsa_encrypt(), and send.

Referenced by auth_rece_send_msg().

7.94.2.7 int read_encrypted_file (char * *enfile*, char * *string*, unsigned char * *passphase*)

Definition at line 398 of file interface.c.

References aes_en_de(), and f.

Referenced by MC_Initialize().

7.94.2.8 int read_known_host_file (char * *pubkey*, char * *hname*, char * *filename*)

Definition at line 329 of file interface.c.

Referenced by auth_conn_rece_key(), and auth_rece_send_msg().

7.94.2.9 int receive_AES_en_MA (int *new_fd*, int * *nonce*, char * *infile*, char * *privatekey*)

Definition at line 1555 of file interface.c.

References rsa_decryption().

Referenced by rece_de_msg().

7.94.2.10 int receive_decrypt_AES_key (int *new_fd*, int * *nonce*, unsigned char * *key*, char * *privkey*, char * *publickey*)**7.94.2.11 int receiving_decrypting_MA_RSA (int *new_fd*, char * *privkeyfile*)****7.94.2.12 int receiving_verifying_MA_RSA (int *sockfd*, char * *privkeyfile*)****7.94.2.13 int reply_migration_process (int *new_fd*, int * *nonce*, char * *publickey*, char * *privatekey*, unsigned char * *aes_key*)**

Definition at line 777 of file interface.c.

References generate_AES_key(), md5(), rsa_decryption(), rsa_encryption(), and send.

Referenced by auth_conn_rece_key().

7.94.2.14 int rsa_decryption (char * *ciphertext*, char * *plaintext*, char * *privatekeyfile*)

Definition at line 133 of file interface.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, rsa_context::len, mpi_msб(), mpi_read_mystring(), rsa_context::N, rsa_context::P, P, rsa_context::Q, rsa_context::QP, rsa_check_privkey(), RSA_DE, rsa_init(), rsa_pkcs1_decrypt(), RSA_PKCS_V15, and separate_key_parts().

Referenced by initiate_migration_process(), receive_AES_en_MA(), and reply_migration_process().

7.94.2.15 int rsa_encryption (char * *publickey*, char * *plaintext*, char * *ciphertext*)

Definition at line 91 of file interface.c.

References rsa_context::E, rsa_context::len, mpi_msб(), mpi_read_mystring(), rsa_context::N, rsa_check_pubkey(), RSA_EN, rsa_init(), rsa_pkcs1_encrypt(), RSA_PKCS_V15, and separate_key_parts().

Referenced by initiate_migration_process(), reply_migration_process(), and send_AES_en_MA().

7.94.2.16 int send_AES_en_MA (int *sockfd*, int **nonce*, char **outfile*, char **peer_pubkey*)

Definition at line 1419 of file interface.c.

References rsa_encryption(), and send.

Referenced by auth_rece_send_msg().

7.95 /home/dko/Projects/mobilec/src/security/mc_dh.c File Reference

```
#include <stdio.h>
#include "../include/mc_error.h"
#include "xyssl-0.9/include/xyssl/dhm.h"
#include "xyssl-0.9/include/xyssl/havege.h"
#include "mc_dh.h"
#include "asm_node.h"
#include "config.h"
```

7.96 /home/dko/Projects/mobilec/src/security/mc_dh.h File Reference

```
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "asm_node.h"
#include "config.h"
```

7.97 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h File Reference

Data Structures

- struct `aes_context`
AES context structure.

Defines

- `#define AES_ENCRYPT 1`
- `#define AES_DECRYPT 0`

Functions

- void `aes_setkey_enc` (`aes_context` *ctx, `unsigned char` *key, `int` keysize)
AES key schedule (encryption).
- void `aes_setkey_dec` (`aes_context` *ctx, `unsigned char` *key, `int` keysize)
AES key schedule (decryption).
- void `aes_crypt_ecb` (`aes_context` *ctx, `int` mode, `unsigned char` input[16], `unsigned char` output[16])
AES-ECB block encryption/decryption.
- void `aes_crypt_cbc` (`aes_context` *ctx, `int` mode, `int` length, `unsigned char` iv[16], `unsigned char` *input, `unsigned char` *output)
AES-CBC buffer encryption/decryption.
- void `aes_crypt_cfb` (`aes_context` *ctx, `int` mode, `int` length, `int` *iv_off, `unsigned char` iv[16], `unsigned char` *input, `unsigned char` *output)
AES-CFB buffer encryption/decryption.
- int `aes_self_test` (`int` verbose)
Checkup routine.

7.97.1 Detailed Description

Definition in file `aes.h`.

7.97.2 Define Documentation

7.97.2.1 #define AES_DECRYPT 0

Definition at line 8 of file `aes.h`.

Referenced by `aes_crypt_cbc()`, `aes_crypt_cfb()`, `aes_crypt_ecb()`, `aes_en_de()`, `aes_self_test()`, `main()`, and `ssl_decrypt_buf()`.

7.97.2.2 #define AES_ENCRYPT 1

Definition at line 7 of file aes.h.

Referenced by aes_crypt_cfb(), aes_en_de(), main(), and ssl_encrypt_buf().

7.97.3 Function Documentation

7.97.3.1 void aes_crypt_cbc (aes_context * *ctx*, int *mode*, int *length*, unsigned char *iv*[16], unsigned char * *input*, unsigned char * *output*)

AES-CBC buffer encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
length length of the input data
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 732 of file aes.c.

References aes_crypt_ecb(), and AES_DECRYPT.

Referenced by aes_self_test(), main(), ssl_decrypt_buf(), and ssl_encrypt_buf().

7.97.3.2 void aes_crypt_cfb (aes_context * *ctx*, int *mode*, int *length*, int * *iv_off*, unsigned char iv[16], unsigned char * *input*, unsigned char * *output*)

AES-CFB buffer encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
length length of the input data
iv_off offset in IV (updated after use)
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 787 of file aes.c.

References aes_crypt_ecb(), AES_DECRYPT, and AES_ENCRYPT.

Referenced by aes_self_test().

7.97.3.3 void aes_crypt_ecb (aes_context * *ctx*, int *mode*, unsigned char *input*[16], unsigned char *output*[16])

AES-ECB block encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
input 16-byte input block
output 16-byte output block

Definition at line 639 of file aes.c.

References AES_DECRYPT, AES_FROUND, AES_RROUND, FSb, GET ULONG LE, aes_context::nr, PUT ULONG LE, aes_context::rk, and RSb.

Referenced by aes_crypt_cbc(), aes_crypt_cfb(), aes_en_de(), aes_self_test(), and main().

7.97.3.4 int aes_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 902 of file aes.c.

References aes_crypt_cbc(), aes_crypt_cfb(), aes_crypt_ecb(), AES_DECRYPT, aes_setkey_dec(), aes_setkey_enc(), aes_test_cbc_dec, aes_test_cbc_enc, aes_test_cfb_dec, aes_test_cfb_enc, aes_test_ecb_dec, aes_test_ecb_enc, buf, and prv.

Referenced by main().

7.97.3.5 void aes_setkey_dec (aes_context * *ctx*, unsigned char * *key*, int *keysize*)

AES key schedule (decryption).

Parameters

ctx AES context to be initialized
key decryption key
keysize must be 128, 192 or 256

Definition at line 542 of file aes.c.

References aes_setkey_enc(), aes_context::buf, FSb, aes_context::nr, aes_context::rk, RT0, RT1, RT2, and RT3.

Referenced by aes_en_de(), aes_self_test(), main(), and ssl_derive_keys().

7.97.3.6 void aes_setkey_enc (aes_context * *ctx*, unsigned char * *key*, int *keysize*)

AES key schedule (encryption).

Parameters

ctx AES context to be initialized

key encryption key

keysize must be 128, 192 or 256

Definition at line 439 of file aes.c.

References aes_gen_tables(), aes_init_done, aes_context::buf, FSb, GET ULONG LE, aes_context::nr, RCON, and aes_context::rk.

Referenced by aes_en_de(), aes_self_test(), aes_setkey_dec(), main(), and ssl_derive_keys().

7.98 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/arc4.h File Reference

Data Structures

- struct `arc4_context`

ARC4 context structure.

Functions

- void `arc4_setup` (`arc4_context` *ctx, `unsigned char` *key, `int` keylen)
ARC4 key schedule.
- void `arc4_crypt` (`arc4_context` *ctx, `unsigned char` *buf, `int` buflen)
ARC4 cipher function.
- int `arc4_self_test` (`int` verbose)

7.98.1 Detailed Description

Definition in file `arc4.h`.

7.98.2 Function Documentation

7.98.2.1 void `arc4_crypt` (`arc4_context` * *ctx*, `unsigned char` * *buf*, `int` *buflen*)

ARC4 cipher function.

Parameters

ctx ARC4 context
buf buffer to be processed
buflen amount of data in buf

Definition at line 63 of file `arc4.c`.

References `arc4_context::m`, `arc4_context::x`, and `arc4_context::y`.

Referenced by `arc4_self_test()`, `main()`, `ssl_decrypt_buf()`, and `ssl_encrypt_buf()`.

7.98.2.2 int `arc4_self_test` (`int` *verbose*)

Definition at line 122 of file `arc4.c`.

References `arc4_crypt()`, `arc4_setup()`, `arc4_test_ct`, `arc4_test_key`, `arc4_test_pt`, and `buf`.

Referenced by `main()`.

7.98.2.3 void arc4_setup (arc4_context * *ctx*, unsigned char * *key*, int *keylen*)

ARC4 key schedule.

Parameters

ctx ARC4 context to be initialized

key the secret key

keylen length of the key

Definition at line 35 of file arc4.c.

References arc4_context::m, arc4_context::x, and arc4_context::y.

Referenced by arc4_self_test(), main(), and ssl_derive_keys().

7.99 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/base64.h File Reference

Defines

- #define XYSSL_ERR_BASE64_BUFFER_TOO_SMALL -0x0010
- #define XYSSL_ERR_BASE64_INVALID_CHARACTER -0x0012

Functions

- int **base64_encode** (unsigned char *dst, int *dlen, unsigned char *src, int selen)
Encode a buffer into base64 format.
- int **base64_decode** (unsigned char *dst, int *dlen, unsigned char *src, int selen)
Decode a base64-formatted buffer.
- int **base64_self_test** (int verbose)
Checkup routine.

7.99.1 Detailed Description

Definition in file [base64.h](#).

7.99.2 Define Documentation

7.99.2.1 #define XYSSL_ERR_BASE64_BUFFER_TOO_SMALL -0x0010

Definition at line 7 of file [base64.h](#).

Referenced by [base64_decode\(\)](#), and [base64_encode\(\)](#).

7.99.2.2 #define XYSSL_ERR_BASE64_INVALID_CHARACTER -0x0012

Definition at line 8 of file [base64.h](#).

Referenced by [base64_decode\(\)](#), [x509parse_crt\(\)](#), and [x509parse_key\(\)](#).

7.99.3 Function Documentation

7.99.3.1 int base64_decode (unsigned char * *dst*, int * *dlen*, unsigned char * *src*, int *slen*)

Decode a base64-formatted buffer.

Parameters

dst destination buffer

dlen size of the buffer

src source buffer

slen amount of data to be decoded

Returns

0 if successful, XYSSL_ERR_BASE64_BUFFER_TOO_SMALL, or XYSSL_ERR_BASE64_INVALID_DATA if the input data is not correct. *dlen is always updated to reflect the amount of data that has (or would have) been written.

Note

Call this function with *dlen = 0 to obtain the required buffer size in *dlen

Definition at line 121 of file base64.c.

References base64_dec_map, XYSSL_ERR_BASE64_BUFFER_TOO_SMALL, and XYSSL_ERR_BASE64_INVALID_CHARACTER.

Referenced by base64_self_test(), x509parse_crt(), and x509parse_key().

7.99.3.2 int base64_encode (unsigned char * *dst*, int * *dlen*, unsigned char * *src*, int *slen*)

Encode a buffer into [base64](#) format.

Parameters

dst destination buffer

dlen size of the buffer

src source buffer

slen amount of data to be encoded

Returns

0 if successful, or XYSSL_ERR_BASE64_BUFFER_TOO_SMALL. *dlen is always updated to reflect the amount of data that has (or would have) been written.

Note

Call this function with *dlen = 0 to obtain the required buffer size in *dlen

Definition at line 58 of file base64.c.

References base64_enc_map, and XYSSL_ERR_BASE64_BUFFER_TOO_SMALL.

Referenced by base64_self_test().

7.99.3.3 int base64_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 206 of file base64.c.

References base64_decode(), base64_encode(), base64_test_dec, and base64_test_enc.

Referenced by main().

7.100 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bignum.h File Reference

```
#include <stdio.h>
```

Data Structures

- struct **mpi**

MPI structure.

Defines

- #define **XYSSL_ERR_MPI_FILE_IO_ERROR** -0x0002
- #define **XYSSL_ERR_MPI_BAD_INPUT_DATA** -0x0004
- #define **XYSSL_ERR_MPI_INVALID_CHARACTER** -0x0006
- #define **XYSSL_ERR_MPI_BUFFER_TOO_SMALL** -0x0008
- #define **XYSSL_ERR_MPI_NEGATIVE_VALUE** -0x000A
- #define **XYSSL_ERR_MPI_DIVISION_BY_ZERO** -0x000C
- #define **XYSSL_ERR_MPI_NOT_ACCEPTABLE** -0x000E
- #define **MPI_CHK(f)** if((ret = f) != 0) goto cleanup

Typedefs

- typedef unsigned long **t_int**
- typedef unsigned long long **t_dbl**

Functions

- void **mpi_init** (**mpi** *X,...)
Initialize one or more mpi.
- void **mpi_free** (**mpi** *X,...)
Unallocate one or more mpi.
- int **mpi_grow** (**mpi** *X, int nblimbs)
Enlarge to the specified number of limbs.
- int **mpi_copy** (**mpi** *X, **mpi** *Y)
Copy the contents of Y into X.
- void **mpi_swap** (**mpi** *X, **mpi** *Y)
Swap the contents of X and Y.
- int **mpi_lset** (**mpi** *X, int z)
Set value from integer.
- int **mpi_lsb** (**mpi** *X)

Return the number of least significant bits.

- int `mpi_msb (mpi *X)`

Return the number of most significant bits.

- int `mpi_size (mpi *X)`

Return the total size in bytes.

- int `mpi_read_string (mpi *X, int radix, char *s)`

Import from an ASCII string.

- int `mpi_write_string (mpi *X, int radix, char *s, int *slen)`

Export into an ASCII string.

- int `mpi_read_file (mpi *X, int radix, FILE *fin)`

Read X from an opened file.

- int `mpi_read_mystring (mpi *X, int radix, char *s)`

- int `mpi_write_file (char *p, mpi *X, int radix, FILE *fout)`

Write X into an opened file, or stdout.

- int `mpi_read_binary (mpi *X, unsigned char *buf, int buflen)`

Import X from unsigned binary data, big endian.

- int `mpi_write_binary (mpi *X, unsigned char *buf, int buflen)`

Export X into unsigned binary data, big endian.

- int `mpi_shift_l (mpi *X, int count)`

Left-shift: $X <<= count$.

- int `mpi_shift_r (mpi *X, int count)`

Right-shift: $X >>= count$.

- int `mpi_cmp_abs (mpi *X, mpi *Y)`

Compare unsigned values.

- int `mpi_cmp_mpi (mpi *X, mpi *Y)`

Compare signed values.

- int `mpi_cmp_int (mpi *X, int z)`

Compare signed values.

- int `mpi_add_abs (mpi *X, mpi *A, mpi *B)`

Unsigned addition: $X = |A| + |B|$.

- int `mpi_sub_abs (mpi *X, mpi *A, mpi *B)`

Unsigned subtraction: $X = |A| - |B|$.

- int `mpi_add_mpi (mpi *X, mpi *A, mpi *B)`

Signed addition: $X = A + B$.

- int **mpi_sub_mpi** (mpi *X, mpi *A, mpi *B)
Signed subtraction: $X = A - B.$
- int **mpi_add_int** (mpi *X, mpi *A, int b)
Signed addition: $X = A + b.$
- int **mpi_sub_int** (mpi *X, mpi *A, int b)
Signed subtraction: $X = A - b.$
- int **mpi_mul_mpi** (mpi *X, mpi *A, mpi *B)
Baseline multiplication: $X = A * B.$
- int **mpi_mul_int** (mpi *X, mpi *A, t_int b)
Baseline multiplication: $X = A * b.$
- int **mpi_div_mpi** (mpi *Q, mpi *R, mpi *A, mpi *B)
Division by mpi: $A = Q * B + R.$
- int **mpi_div_int** (mpi *Q, mpi *R, mpi *A, int b)
Division by int: $A = Q * b + R.$
- int **mpi_mod_mpi** (mpi *R, mpi *A, mpi *B)
Modulo: $R = A \bmod B.$
- int **mpi_mod_int** (t_int *r, mpi *A, int b)
Modulo: $r = A \bmod b.$
- int **mpi_exp_mod** (mpi *X, mpi *A, mpi *E, mpi *N, mpi *_RR)
Sliding-window exponentiation: $X = A^E \bmod N.$
- int **mpi_gcd** (mpi *G, mpi *A, mpi *B)
Greatest common divisor: $G = \gcd(A, B).$
- int **mpi_inv_mod** (mpi *X, mpi *A, mpi *N)
Modular inverse: $X = A^{-1} \bmod N.$
- int **mpi_is_prime** (mpi *X, int(*f_rng)(void *), void *p_rng)
Miller-Rabin primality test.
- int **mpi_gen_prime** (mpi *X, int nbits, int dh_flag, int(*f_rng)(void *), void *p_rng)
Prime number generation.
- int **mpi_self_test** (int verbose)
Checkup routine.

7.100.1 Detailed Description

Definition in file [bignum.h](#).

7.100.2 Define Documentation

7.100.2.1 #define MPI_CHK(f) if((ret = f) != 0) goto cleanup

Definition at line 17 of file bignum.h.

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_make_public(), mpi_add_abs(), mpi_add_mpi(), mpi_copy(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_is_prime(), mpi_lset(), mpi_mod_mpi(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), mpi_self_test(), mpi_shift_l(), mpi_sub_abs(), mpi_sub_mpi(), mpi_write_file(), mpi_write_hlp(), mpi_write_string(), rsa_check_privkey(), rsa_gen_key(), rsa_private(), and rsa_public().

7.100.2.2 #define XYSSL_ERR_MPI_BAD_INPUT_DATA -0x0004

Definition at line 10 of file bignum.h.

Referenced by mpi_exp_mod(), mpi_gen_prime(), mpi_inv_mod(), mpi_read_string(), mpi_write_hlp(), and mpi_write_string().

7.100.2.3 #define XYSSL_ERR_MPI_BUFFER_TOO_SMALL -0x0008

Definition at line 12 of file bignum.h.

Referenced by mpi_write_binary(), and mpi_write_string().

7.100.2.4 #define XYSSL_ERR_MPI_DIVISION_BY_ZERO -0x000C

Definition at line 14 of file bignum.h.

Referenced by mpi_div_mpi(), and mpi_mod_int().

7.100.2.5 #define XYSSL_ERR_MPI_FILE_IO_ERROR -0x0002

Definition at line 9 of file bignum.h.

Referenced by mpi_read_file(), and mpi_write_file().

7.100.2.6 #define XYSSL_ERR_MPI_INVALID_CHARACTER -0x0006

Definition at line 11 of file bignum.h.

Referenced by mpi_get_digit().

7.100.2.7 #define XYSSL_ERR_MPI_NEGATIVE_VALUE -0x000A

Definition at line 13 of file bignum.h.

Referenced by mpi_sub_abs().

7.100.2.8 #define XYSSL_ERR_MPI_NOT_ACCEPTABLE -0x000E

Definition at line 15 of file bignum.h.

Referenced by mpi_gen_prime(), mpi_inv_mod(), and mpi_is_prime().

7.100.3 Typedef Documentation

7.100.3.1 `typedef unsigned long long t_dbl`

Definition at line 39 of file bignum.h.

7.100.3.2 `typedef unsigned long t_int`

Definition at line 30 of file bignum.h.

7.100.4 Function Documentation

7.100.4.1 `int mpi_add_abs (mpi * X, mpi * A, mpi * B)`

Unsigned addition: $X = |A| + |B|$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 694 of file bignum.c.

References MPI_CHK, mpi_copy(), mpi_grow(), mpi::n, and mpi::p.

Referenced by mpi_add_mpi(), and mpi_sub_mpi().

7.100.4.2 `int mpi_add_int (mpi * X, mpi * A, int b)`

Signed addition: $X = A + b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 860 of file bignum.c.

References mpi_add_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_gen_prime(), and mpi_read_string().

7.100.4.3 `int mpi_add_mpi (mpi * X, mpi * A, mpi * B)`

Signed addition: $X = A + B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 798 of file bignum.c.

References mpi_add_abs(), MPI_CHK, mpi_cmp_abs(), mpi_sub_abs(), and mpi::s.

Referenced by mpi_add_int(), mpi_div_mpi(), mpi_inv_mod(), mpi_mod_mpi(), and rsa_private().

7.100.4.4 int mpi_cmp_abs (mpi * X, mpi * Y)

Compare unsigned values.

Returns

1 if |X| is greater than |Y|, -1 if |X| is lesser than |Y| or 0 if |X| is equal to |Y|

Definition at line 615 of file bignum.c.

References mpi::n, and mpi::p.

Referenced by mpi_add_mpi(), mpi_div_mpi(), mpi_montmul(), mpi_sub_abs(), and mpi_sub_mpi().

7.100.4.5 int mpi_cmp_int (mpi * X, int z)

Compare signed values.

Returns

1 if X is greater than z, -1 if X is lesser than z or 0 if X is equal to z

Definition at line 678 of file bignum.c.

References mpi_cmp_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_inv_mod(), mpi_is_prime(), mpi_mod_mpi(), mpi_write_hlp(), rsa_check_privkey(), and rsa_gen_key().

7.100.4.6 int mpi_cmp_mpi (mpi * X, mpi * Y)

Compare signed values.

Returns

1 if X is greater than Y, -1 if X is lesser than Y or 0 if X is equal to Y

Definition at line 645 of file bignum.c.

References mpi::n, mpi::p, and mpi::s.

Referenced by dhm_make_params(), dhm_make_public(), mpi_cmp_int(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_inv_mod(), mpi_is_prime(), mpi_mod_mpi(), mpi_self_test(), rsa_check_privkey(), rsa_gen_key(), rsa_private(), and rsa_public().

7.100.4.7 int mpi_copy (mpi * X, mpi * Y)

Copy the contents of Y into X.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 128 of file bignum.c.

References ciL, MPI_CHK, mpi_grow(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_add_abs(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_inv_mod(), mpi_is_prime(), mpi_mul_mpi(), mpi_sub_abs(), and mpi_write_string().

7.100.4.8 int mpi_div_int (mpi * Q, mpi * R, mpi * A, int b)

Division by int: $A = Q * b + R$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $b == 0$

Note

Either Q or R can be NULL.

Definition at line 1173 of file bignum.c.

References mpi_div_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), and mpi_write_hlp().

7.100.4.9 int mpi_div_mpi (mpi * Q, mpi * R, mpi * A, mpi * B)

Division by mpi: $A = Q * B + R$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $B == 0$

Note

Either Q or R can be NULL.

Definition at line 1008 of file bignum.c.

References biH, biL, mpi_add_mpi(), MPI_CHK, mpi_cmp_abs(), mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_msb(), mpi_mul_int(), mpi_shift_l(), mpi_shift_r(), mpi_sub_mpi(), mpi::n, mpi::p, mpi::s, and XYSSL_ERR_MPI_DIVISION_BY_ZERO.

Referenced by mpi_div_int(), mpi_mod_mpi(), and mpi_self_test().

7.100.4.10 int mpi_exp_mod (mpi * X, mpi * A, mpi * E, mpi * N, mpi * _RR)

Sliding-window exponentiation: $X = A^E \bmod N$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if N is negative or even

Note

_RR is used to avoid re-computing $R*R \bmod N$ across multiple calls, which speeds up things a bit. It can be set to NULL if the extra performance is unneeded.

Definition at line 1328 of file bignum.c.

References biL, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mod_mpi(), mpi_montg_init(), mpi_montmul(), mpi_montred(), mpi_msb(), mpi_shift_l(), mpi::n, mpi::p, and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_make_public(), main(), mpi_is_prime(), mpi_self_test(), rsa_private(), and rsa_public().

7.100.4.11 void mpi_free (mpi * *X*, ...)

Unallocate one or more mpi.

Definition at line 73 of file bignum.c.

References ciL, mpi::n, mpi::p, and mpi::s.

Referenced by dhm_free(), main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_is_prime(), mpi_mul_mpi(), mpi_read_string(), mpi_self_test(), mpi_sub_abs(), mpi_write_string(), rsa_check_privkey(), rsa_free(), rsa_gen_key(), rsa_private(), and rsa_public().

7.100.4.12 int mpi_gcd (mpi * *G*, mpi * *A*, mpi * *B*)

Greatest common divisor: $G = \text{gcd}(A, B)$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 1507 of file bignum.c.

References MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_init(), mpi_lset(), mpi_mul_mpi(), mpi_shift_r(), mpi_sub_abs(), mpi::p, and mpi::s.

Referenced by mpi_inv_mod(), rsa_check_privkey(), and rsa_gen_key().

7.100.4.13 int mpi_gen_prime (mpi * *X*, int *nbits*, int *dh_flag*, int(*)(void *) *f_rng*, void * *p_rng*)

Prime number generation.

Parameters

X destination mpi

nbits required size of X in bits

dh_flag if 1, then $(X-1)/2$ will be prime too

f_rng RNG function

p_rng RNG parameter

Returns

0 if successful (probably prime), 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if nbits is < 3

Definition at line 1778 of file bignum.c.

References BITS_TO_LIMBS, ciL, mpi_add_int(), MPI_CHK, mpi_free(), mpi_grow(), mpi_init(), mpi_is_prime(), mpi_lset(), mpi_msb(), mpi_shift_l(), mpi_shift_r(), mpi_sub_int(), mpi::p, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_NOT_ACCEPTABLE.

Referenced by main(), and rsa_gen_key().

7.100.4.14 int mpi_grow (mpi * *X*, int *nblimbs*)

Enlarge to the specified number of limbs.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 100 of file bignum.c.

References ciL, mpi::n, and mpi::p.

Referenced by dhm_make_params(), dhm_make_public(), mpi_add_abs(), mpi_copy(), mpi_div_mpi(), mpi_exp_mod(), mpi_gen_prime(), mpi_is_prime(), mpi_lset(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), and mpi_shift_l().

7.100.4.15 void mpi_init (mpi * X, ...)

Initialize one or more mpi.

Definition at line 52 of file bignum.c.

References mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_is_prime(), mpi_mul_mpi(), mpi_read_string(), mpi_self_test(), mpi_sub_abs(), mpi_write_string(), rsa_check_privkey(), rsa_gen_key(), rsa_private(), and rsa_public().

7.100.4.16 int mpi_inv_mod (mpi * X, mpi * A, mpi * N)

Modular inverse: $X = A^{-1} \text{ mod } N$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if N is negative or nil XYSSL_ERR_MPI_NOT_ACCEPTABLE if A has no inverse mod N

Definition at line 1549 of file bignum.c.

References mpi_add_mpi(), MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_gcd(), mpi_init(), mpi_lset(), mpi_mod_mpi(), mpi_shift_r(), mpi_sub_mpi(), mpi::p, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_NOT_ACCEPTABLE.

Referenced by main(), mpi_self_test(), and rsa_gen_key().

7.100.4.17 int mpi_is_prime (mpi * X, int(*)(void *)f_rng, void * p_rng)

Miller-Rabin primality test.

Returns

0 if successful (probably prime), 1 if memory allocation failed, XYSSL_ERR_MPI_NOT_ACCEPTABLE if X is not prime

Definition at line 1667 of file bignum.c.

References ciL, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_exp_mod(), mpi_free(), mpi_grow(), mpi_init(), mpi_lsb(), mpi_mod_int(), mpi_mod_mpi(), mpi_msb(), mpi_mul_mpi(), mpi_shift_r(), mpi_sub_int(), mpi::n, mpi::p, R, mpi::s, small_prime, and XYSSL_ERR_MPI_NOT_ACCEPTABLE.

Referenced by main(), and mpi_gen_prime().

7.100.4.18 int mpi_lsb (mpi * X)

Return the number of least significant bits.

Definition at line 185 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by mpi_is_prime().

7.100.4.19 int mpi_lset (mpi * X, int z)

Set value from integer.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 167 of file bignum.c.

References ciL, MPI_CHK, mpi_grow(), mpi::n, mpi::p, and mpi::s.

Referenced by dhm_make_params(), dhm_make_public(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), and rsa_gen_key().

7.100.4.20 int mpi_mod_int (t_int * r, mpi * A, int b)

Modulo: $r = A \bmod b$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $b == 0$

Definition at line 1209 of file bignum.c.

References biH, mpi::n, mpi::p, and XYSSL_ERR_MPI_DIVISION_BY_ZERO.

Referenced by mpi_is_prime(), and mpi_write_hlp().

7.100.4.21 int mpi_mod_mpi (mpi * R, mpi * A, mpi * B)

Modulo: $R = A \bmod B$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $B == 0$

Definition at line 1189 of file bignum.c.

References mpi_add_mpi(), MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_div_mpi(), and mpi_sub_mpi().

Referenced by mpi_exp_mod(), mpi_inv_mod(), mpi_is_prime(), rsa_check_privkey(), rsa_gen_key(), and rsa_private().

7.100.4.22 int mpi_msb (mpi * *X*)

Return the number of most significant bits.

Definition at line 200 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by d2i_RSA_PUBKEY(), main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gen_prime(), mpi_is_prime(), mpi_shift_l(), mpi_size(), mpi_write_string(), rsa_check_pubkey(), rsa_decryption(), rsa_encryption(), and rsa_gen_key().

7.100.4.23 int mpi_mul_int (mpi * *X*, mpi * *A*, t_int *b*)

Baseline multiplication: $X = A * b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 992 of file bignum.c.

References mpi_mul_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_div_mpi(), and mpi_read_string().

7.100.4.24 int mpi_mul_mpi (mpi * *X*, mpi * *A*, mpi * *B*)

Baseline multiplication: $X = A * B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 956 of file bignum.c.

References MPI_CHK, mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mul_hlp(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_gcd(), mpi_is_prime(), mpi_mul_int(), mpi_self_test(), rsa_check_privkey(), rsa_gen_key(), and rsa_private().

7.100.4.25 int mpi_read_binary (mpi * *X*, unsigned char * *buf*, int *buflen*)

Import *X* from unsigned binary data, big endian.

Parameters

X destination mpi

buf input buffer

buflen input buffer size

Returns

0 if successful, 1 if memory allocation failed

Definition at line 484 of file bignum.c.

References CHARS_TO_LIMBS, ciL, MPI_CHK, mpi_grow(), mpi_lset(), and mpi::p.

Referenced by asn1_get_mpi(), d2i_RSA_PUBKEY(), dhm_read_bignum(), dhm_read_public(), rsa_private(), and rsa_public().

7.100.4.26 int mpi_read_file (mpi **X*, int *radix*, FILE **fin*)

Read *X* from an opened file.

Parameters

X destination mpi
radix input numeric base
fin input file handle

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Definition at line 391 of file bignum.c.

References mpi_get_digit(), mpi_read_string(), and XYSSL_ERR_MPI_FILE_IO_ERROR.

Referenced by main().

7.100.4.27 int mpi_read_mystring (mpi **X*, int *radix*, char **s*)

Definition at line 418 of file bignum.c.

References mpi_get_digit(), and mpi_read_string().

Referenced by rsa_decryption(), and rsa_encryption().

7.100.4.28 int mpi_read_string (mpi **X*, int *radix*, char **s*)

Import from an ASCII string.

Parameters

X destination mpi
radix input numeric base
s null-terminated string buffer

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Definition at line 243 of file bignum.c.

References BITS_TO_LIMBS, ciL, mpi_add_int(), MPI_CHK, mpi_free(), mpi_get_digit(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mul_int(), mpi::p, mpi::s, and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by main(), mpi_read_file(), mpi_read_mystring(), mpi_self_test(), rsa_self_test(), and ssl_set_dh_param().

7.100.4.29 int mpi_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 1854 of file bignum.c.

References MPI_CHK, mpi_cmp_mpi(), mpi_div_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_inv_mod(), mpi_mul_mpi(), and mpi_read_string().

Referenced by main().

7.100.4.30 int mpi_shift_l (mpi * *X*, int *count*)

Left-shift: $X <<= \text{count}$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 526 of file bignum.c.

References biL, BITS_TO_LIMBS, MPI_CHK, mpi_grow(), mpi_msб(), mpi::n, and mpi::p.

Referenced by mpi_div_mpi(), mpi_exp_mod(), and mpi_gen_prime().

7.100.4.31 int mpi_shift_r (mpi * *X*, int *count*)

Right-shift: $X >>= \text{count}$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 575 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by dhm_make_params(), dhm_make_public(), mpi_div_mpi(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), and mpi_is_prime().

7.100.4.32 int mpi_size (mpi * *X*)

Return the total size in bytes.

Definition at line 218 of file bignum.c.

References mpi_msб().

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_read_params(), mpi_write_binary(), x509parse_crt(), and x509parse_key().

7.100.4.33 int mpi_sub_abs (mpi * X, mpi * A, mpi * B)

Unsigned subtraction: $X = |A| - |B|$.

Returns

0 if successful, XYSSL_ERR_MPI_NEGATIVE_VALUE if B is greater than A

Definition at line 761 of file bignum.c.

References MPI_CHK, mpi_cmp_abs(), mpi_copy(), mpi_free(), mpi_init(), mpi_sub_hlp(), mpi::n, mpi::p, and XYSSL_ERR_MPI_NEGATIVE_VALUE.

Referenced by mpi_add_mpi(), mpi_gcd(), and mpi_sub_mpi().

7.100.4.34 int mpi_sub_int (mpi * X, mpi * A, int b)

Signed subtraction: $X = A - b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 876 of file bignum.c.

References mpi_sub_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_gen_prime(), mpi_is_prime(), rsa_check_privkey(), and rsa_gen_key().

7.100.4.35 int mpi_sub_mpi (mpi * X, mpi * A, mpi * B)

Signed subtraction: $X = A - B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 829 of file bignum.c.

References mpi_add_abs(), MPI_CHK, mpi_cmp_abs(), mpi_sub_abs(), and mpi::s.

Referenced by mpi_div_mpi(), mpi_inv_mod(), mpi_mod_mpi(), mpi_sub_int(), and rsa_private().

7.100.4.36 void mpi_swap (mpi * X, mpi * Y)

Swap the contents of X and Y.

Definition at line 155 of file bignum.c.

Referenced by rsa_gen_key().

7.100.4.37 int mpi_write_binary (mpi * X, unsigned char * buf, int buflen)

Export X into unsigned binary data, big endian.

Parameters

X source mpi
buf output buffer
buflen output buffer size

Returns

0 if successful, XYSSL_ERR_MPI_BUFFER_TOO_SMALL if buf isn't large enough

Note

Call this function with *buflen = 0 to obtain the minimum required buffer size in *buflen.

Definition at line 506 of file bignum.c.

References ciL, mpi_size(), mpi::p, and XYSSL_ERR_MPI_BUFFER_TOO_SMALL.

Referenced by dhm_calc_secret(), dhm_make_public(), rsa_private(), and rsa_public().

7.100.4.38 int mpi_write_file (char *p, mpi *X, int radix, FILE *fout)

Write X into an opened file, or stdout.

Parameters

p prefix, can be NULL
X source mpi
radix output numeric base
fout output file handle

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Note

Set fout == NULL to print X on the console.

Definition at line 447 of file bignum.c.

References MPI_CHK, mpi_write_string(), and XYSSL_ERR_MPI_FILE_IO_ERROR.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

7.100.4.39 int mpi_write_string (mpi *X, int radix, char *s, int *slen)

Export into an ASCII string.

Parameters

X source mpi
radix output numeric base
s string buffer
slen string buffer size

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Note

Call this function with *slen = 0 to obtain the minimum required buffer size in *slen.

Definition at line 328 of file bignum.c.

References ciL, MPI_CHK, mpi_copy(), mpi_free(), mpi_init(), mpi_msb(), mpi_write_hlp(), mpi::n, mpi::p, mpi::s, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_BUFFER_TOO_SMALL.

Referenced by mpi_write_file().

7.101 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bn_mul.h File Reference

```
#include "xyssl/config.h"
```

Defines

- #define MULADDC_INIT
- #define MULADDC_CORE
- #define MULADDC_STOP }

7.101.1 Detailed Description

Definition in file [bn_mul.h](#).

7.101.2 Define Documentation

7.101.2.1 #define MULADDC_CORE

Value:

```
s0 = ( *s << biH ) >> biH;           \
s1 = ( *s >> biH ); s++;             \
rx = s0 * b1; r0 = s0 * b0;           \
ry = s1 * b0; r1 = s1 * b1;           \
r1 += ( rx >> biH );                 \
r1 += ( ry >> biH );                 \
rx <= biH; ry <= biH;                \
r0 += rx; r1 += (r0 < rx);           \
r0 += ry; r1 += (r0 < ry);           \
r0 += c; r1 += (r0 < c);            \
r0 += *d; r1 += (r0 < *d);           \
c = r1; *(d++) = r0;
```

Definition at line 662 of file bn_mul.h.

Referenced by mpi_mul_hlp().

7.101.2.2 #define MULADDC_INIT

Value:

```
{
t_int s0, s1, b0, b1;                   \
t_int r0, r1, rx, ry;                   \
b0 = ( b << biH ) >> biH;           \
b1 = ( b >> biH );
```

Definition at line 655 of file bn_mul.h.

Referenced by mpi_mul_hlp().

7.101.2.3 #define MULADD_C_STOP }

Definition at line 676 of file bn_mul.h.

Referenced by mpi_mul_hlp().

7.102 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/certs.h File Reference

Variables

- char `test_ca_crt` []
- char `test_ca_key` []
- char `test_ca_pwd` []
- char `test_srv_crt` []
- char `test_srv_key` []
- char `test_cli_crt` []
- char `test_cli_key` []
- char `xyssl_ca_crt` []

7.102.1 Detailed Description

Definition in file `certs.h`.

7.102.2 Variable Documentation

7.102.2.1 char test_ca_crt[]

Definition at line 25 of file `certs.c`.

Referenced by `main()`, `ssl_test()`, and `x509_self_test()`.

7.102.2.2 char test_ca_key[]

Definition at line 49 of file `certs.c`.

Referenced by `x509_self_test()`.

7.102.2.3 char test_ca_pwd[]

Definition at line 81 of file `certs.c`.

Referenced by `x509_self_test()`.

7.102.2.4 char test_cli_crt[]

Definition at line 134 of file `certs.c`.

Referenced by `main()`, and `x509_self_test()`.

7.102.2.5 char test_cli_key[]

Definition at line 156 of file `certs.c`.

Referenced by `main()`.

7.102.2.6 char test_srv_crt[]

Definition at line 83 of file certs.c.

Referenced by main(), and ssl_test().

7.102.2.7 char test_srv_key[]

Definition at line 105 of file certs.c.

Referenced by main(), and ssl_test().

7.102.2.8 char xyssl_ca_crt[]

Definition at line 185 of file certs.c.

Referenced by main().

7.103 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/debug.h File Reference

```
#include "xyssl/config.h"
#include "xyssl/ssl.h"
```

Defines

- #define **SSL_DEBUG_MSG**(level, args) debug_print_msg(ssl, level, __FILE__, __LINE__-, debug_fmt args);
- #define **SSL_DEBUG_RET**(level, text, ret) debug_print_ret(ssl, level, __FILE__, __LINE__, text, ret);
- #define **SSL_DEBUG_BUF**(level, text, buf, len) debug_print_buf(ssl, level, __FILE__, __LINE__, text, buf, len);
- #define **SSL_DEBUG_MPI**(level, text, X) debug_print_mpi(ssl, level, __FILE__, __LINE__, text, X);
- #define **SSL_DEBUG_CRT**(level, text, crt) debug_print_crt(ssl, level, __FILE__, __LINE__, text, crt);

Functions

- char * **debug_fmt** (const char *format,...)
- void **debug_print_msg** (ssl_context *ssl, int level, char *file, int line, char *text)
- void **debug_print_ret** (ssl_context *ssl, int level, char *file, int line, char *text, int ret)
- void **debug_print_buf** (ssl_context *ssl, int level, char *file, int line, char *text, unsigned char *buf, int len)
- void **debug_print_mpi** (ssl_context *ssl, int level, char *file, int line, char *text, mpi *X)
- void **debug_print_crt** (ssl_context *ssl, int level, char *file, int line, char *text, x509_cert *crt)

7.103.1 Detailed Description

Definition in file [debug.h](#).

7.103.2 Define Documentation

7.103.2.1 #define **SSL_DEBUG_BUF**(level, text, buf, len) debug_print_buf(ssl, level, __FILE__, __LINE__, text, buf, len);

Definition at line 18 of file [debug.h](#).

Referenced by `ssl_calc_finished()`, `ssl_calc_verify()`, `ssl_decrypt_buf()`, `ssl_derive_keys()`, `ssl_encrypt_buf()`, `ssl_parse_client_hello()`, `ssl_parse_server_hello()`, `ssl_parse_server_key_exchange()`, `ssl_read_record()`, `ssl_write_certificate_request()`, `ssl_write_client_hello()`, `ssl_write_record()`, `ssl_write_server_hello()`, and `ssl_write_server_key_exchange()`.

7.103.2.2 #define SSL_DEBUG_CRT(level, text, crt) debug_print_crt(ssl, level, __FILE__, __LINE__, text, crt);

Definition at line 24 of file debug.h.

Referenced by ssl_parse_certificate(), and ssl_write_certificate().

7.103.2.3 #define SSL_DEBUG_MPI(level, text, X) debug_print_mpi(ssl, level, __FILE__, __LINE__, text, X);

Definition at line 21 of file debug.h.

Referenced by ssl_parse_client_key_exchange(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

7.103.2.4 #define SSL_DEBUG_MSG(level, args) debug_print_msg(ssl, level, __FILE__, __LINE__, debug_fmt args);

Definition at line 12 of file debug.h.

Referenced by ssl_calc_finished(), ssl_calc_verify(), ssl_close_notify(), ssl_decrypt_buf(), ssl_derive_keys(), ssl_encrypt_buf(), ssl_fetch_input(), ssl_flush_output(), ssl_free(), ssl_handshake(), ssl_handshake_client(), ssl_handshake_server(), ssl_init(), ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_certificate_verify(), ssl_parse_change_cipher_spec(), ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), ssl_read(), ssl_read_record(), ssl_write(), ssl_write_certificate(), ssl_write_certificate_request(), ssl_write_certificate_verify(), ssl_write_change_cipher_spec(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), ssl_write_record(), ssl_write_server_hello(), ssl_write_server_hello_done(), and ssl_write_server_key_exchange().

7.103.2.5 #define SSL_DEBUG_RET(level, text, ret) debug_print_ret(ssl, level, __FILE__, __LINE__, text, ret);

Definition at line 15 of file debug.h.

Referenced by ssl_close_notify(), ssl_fetch_input(), ssl_flush_output(), ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_certificate_verify(), ssl_parse_change_cipher_spec(), ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), ssl_read(), ssl_read_record(), ssl_set_dh_param(), ssl_write(), ssl_write_certificate(), ssl_write_certificate_verify(), ssl_write_change_cipher_spec(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), ssl_write_record(), ssl_write_server_hello(), and ssl_write_server_key_exchange().

7.103.3 Function Documentation

7.103.3.1 char* debug_fmt (const char *format, ...)

Definition at line 38 of file debug.c.

References vsnprintf.

7.103.3.2 void debug_print_buf (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*, unsigned char * *buf*, int *len*)

Definition at line 82 of file debug.c.

References _ssl_context::f_dbg, and _ssl_context::p_dbg.

7.103.3.3 void debug_print_crt (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*, x509_cert * *crt*)

Definition at line 169 of file debug.c.

References debug_print_mpi(), rsa_context::E, _ssl_context::f_dbg, rsa_context::N, _x509_cert::next, _ssl_context::p_dbg, _x509_cert::rsa, and x509parse_cert_info().

7.103.3.4 void debug_print_mpi (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*, mpi * *X*)

Definition at line 124 of file debug.c.

References _ssl_context::f_dbg, mpi::n, mpi::p, and _ssl_context::p_dbg.

Referenced by debug_print_crt().

7.103.3.5 void debug_print_msg (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*)

Definition at line 52 of file debug.c.

References _ssl_context::f_dbg, and _ssl_context::p_dbg.

7.103.3.6 void debug_print_ret (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*, int *ret*)

Definition at line 66 of file debug.c.

References _ssl_context::f_dbg, and _ssl_context::p_dbg.

7.104 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h File Reference

Data Structures

- struct `des_context`
DES context structure.
- struct `des3_context`
Triple-DES context structure.

Defines

- #define `DES_ENCRYPT` 1
- #define `DES_DECRYPT` 0

Functions

- void `des_setkey_enc` (`des_context` *ctx, unsigned char key[8])
DES key schedule (56-bit, encryption).
- void `des_setkey_dec` (`des_context` *ctx, unsigned char key[8])
DES key schedule (56-bit, decryption).
- void `des3_set2key_enc` (`des3_context` *ctx, unsigned char key[16])
Triple-DES key schedule (112-bit, encryption).
- void `des3_set2key_dec` (`des3_context` *ctx, unsigned char key[16])
Triple-DES key schedule (112-bit, decryption).
- void `des3_set3key_enc` (`des3_context` *ctx, unsigned char key[24])
Triple-DES key schedule (168-bit, encryption).
- void `des3_set3key_dec` (`des3_context` *ctx, unsigned char key[24])
Triple-DES key schedule (168-bit, decryption).
- void `des_crypt_ecb` (`des_context` *ctx, unsigned char input[8], unsigned char output[8])
DES-ECB block encryption/decryption.
- void `des_crypt_cbc` (`des_context` *ctx, int mode, int length, unsigned char iv[8], unsigned char *input, unsigned char *output)
DES-CBC buffer encryption/decryption.
- void `des3_crypt_ecb` (`des3_context` *ctx, unsigned char input[8], unsigned char output[8])
3DES-ECB block encryption/decryption
- void `des3_crypt_cbc` (`des3_context` *ctx, int mode, int length, unsigned char iv[8], unsigned char *input, unsigned char *output)

3DES-CBC buffer encryption/decryption

- int `des_self_test` (int verbose)

7.104.1 Detailed Description

Definition in file [des.h](#).

7.104.2 Define Documentation

7.104.2.1 #define DES_DECRYPT 0

Definition at line 8 of file des.h.

Referenced by `des_self_test()`, `ssl_decrypt_buf()`, and `x509_des3_decrypt()`.

7.104.2.2 #define DES_ENCRYPT 1

Definition at line 7 of file des.h.

Referenced by `des3_crypt_cbc()`, `des_crypt_cbc()`, `main()`, and `ssl_encrypt_buf()`.

7.104.3 Function Documentation

7.104.3.1 void `des3_crypt_cbc` (`des3_context * ctx`, `int mode`, `int length`, `unsigned char iv[8]`, `unsigned char * input`, `unsigned char * output`)

3DES-CBC buffer encryption/decryption

Parameters

`ctx` 3DES context
`mode` DES_ENCRYPT or DES_DECRYPT
`length` length of the input data
`iv` initialization vector (updated after use)
`input` buffer holding the input data
`output` buffer holding the output data

Definition at line 593 of file des.c.

References `des3_crypt_ecb()`, and `DES_ENCRYPT`.

Referenced by `des_self_test()`, `main()`, `ssl_decrypt_buf()`, `ssl_encrypt_buf()`, and `x509_des3_decrypt()`.

7.104.3.2 void `des3_crypt_ecb` (`des3_context * ctx`, `unsigned char input[8]`, `unsigned char output[8]`)

3DES-ECB block encryption/decryption

Parameters

`ctx` 3DES context

input 64-bit input block

output 64-bit output block

Definition at line 552 of file des.c.

References DES_FP, DES_IP, DES_ROUND, GET ULONG_BE, PUT ULONG_BE, and des3_context::sk.

Referenced by des3_crypt_cbc(), and des_self_test().

7.104.3.3 void des3_set2key_dec (des3_context * *ctx*, unsigned char *key*[16])

Triple-DES key schedule (112-bit, decryption).

Parameters

ctx 3DES context to be initialized

key 16-byte secret key

Definition at line 420 of file des.c.

References des3_set2key(), and des3_context::sk.

Referenced by des_self_test().

7.104.3.4 void des3_set2key_enc (des3_context * *ctx*, unsigned char *key*[16])

Triple-DES key schedule (112-bit, encryption).

Parameters

ctx 3DES context to be initialized

key 16-byte secret key

Definition at line 409 of file des.c.

References des3_set2key(), and des3_context::sk.

Referenced by des_self_test().

7.104.3.5 void des3_set3key_dec (des3_context * *ctx*, unsigned char *key*[24])

Triple-DES key schedule (168-bit, decryption).

Parameters

ctx 3DES context to be initialized

key 24-byte secret key

Definition at line 465 of file des.c.

References des3_set3key(), and des3_context::sk.

Referenced by des_self_test(), ssl_derive_keys(), and x509_des3_decrypt().

7.104.3.6 void des3_set3key_enc (des3_context * *ctx*, unsigned char *key*[24])

Triple-DES key schedule (168-bit, encryption).

Parameters

ctx 3DES context to be initialized

key 24-byte secret key

Definition at line 454 of file des.c.

References des3_set3key(), and des3_context::sk.

Referenced by des_self_test(), main(), and ssl_derive_keys().

**7.104.3.7 void des_crypt_cbc (des_context * *ctx*, int *mode*, int *length*, unsigned char *iv*[8],
unsigned char * *input*, unsigned char * *output*)**

DES-CBC buffer encryption/decryption.

Parameters

ctx DES context

mode DES_ENCRYPT or DES_DECRYPT

length length of the input data

iv initialization vector (updated after use)

input buffer holding the input data

output buffer holding the output data

Definition at line 505 of file des.c.

References des_crypt_ecb(), and DES_ENCRYPT.

Referenced by des_self_test(), and main().

7.104.3.8 void des_crypt_ecb (des_context * *ctx*, unsigned char *input*[8], unsigned char *output*[8])

DES-ECB block encryption/decryption.

Parameters

ctx DES context

input 64-bit input block

output 64-bit output block

Definition at line 476 of file des.c.

References DES_FP, DES_IP, DES_ROUND, GET ULONG_BE, PUT ULONG_BE, and des_context::sk.

Referenced by des_crypt_cbc(), and des_self_test().

7.104.3.9 int des_self_test (int verbose)

Definition at line 694 of file des.c.

References buf, des3_crypt_cbc(), des3_crypt_ecb(), des3_set2key_dec(), des3_set2key_enc(), des3_set3key_dec(), des3_set3key_enc(), des3_test_buf, des3_test_cbc_dec, des3_test_cbc_enc, des3_test_ecb_dec, des3_test_ecb_enc, des3_test_iv, des3_test_keys, des_crypt_cbc(), des_crypt_ecb(), DES_DECRYPT, des_setkey_dec(), des_setkey_enc(), and prv.

Referenced by main().

7.104.3.10 void des_setkey_dec (des_context * ctx, unsigned char key[8])

DES key schedule (56-bit, decryption).

Parameters

ctx DES context to be initialized

key 8-byte secret key

Definition at line 368 of file des.c.

References des_setkey(), des_context::sk, and SWAP.

Referenced by des_self_test().

7.104.3.11 void des_setkey_enc (des_context * ctx, unsigned char key[8])

DES key schedule (56-bit, encryption).

Parameters

ctx DES context to be initialized

key 8-byte secret key

Definition at line 360 of file des.c.

References des_setkey(), and des_context::sk.

Referenced by des_self_test(), and main().

7.105 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/dhm.h File Reference

```
#include "bignum.h"
```

Data Structures

- struct [dhm_context](#)

Defines

- #define [XYSSL_ERR_DHM_BAD_INPUT_DATA](#) -0x0480
- #define [XYSSL_ERR_DHM_READ_PARAMS_FAILED](#) -0x0490
- #define [XYSSL_ERR_DHM_MAKE_PARAMS_FAILED](#) -0x04A0
- #define [XYSSL_ERR_DHM_READ_PUBLIC_FAILED](#) -0x04B0
- #define [XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED](#) -0x04C0
- #define [XYSSL_ERR_DHM_CALC_SECRET_FAILED](#) -0x04D0

Functions

- int [dhm_read_params](#) ([dhm_context](#) *ctx, unsigned char **p, unsigned char *end)
Parse the ServerKeyExchange parameters.
- int [dhm_make_params](#) ([dhm_context](#) *ctx, int s_size, unsigned char *output, int *olen, int(*f_-rng)(void *), void *p_rng)
Setup and write the ServerKeyExchange parameters.
- int [dhm_read_public](#) ([dhm_context](#) *ctx, unsigned char *input, int ilen)
Import the peer's public value G^Y .
- int [dhm_make_public](#) ([dhm_context](#) *ctx, int s_size, unsigned char *output, int olen, int(*f_-rng)(void *), void *p_rng)
Create own private value X and export G^X .
- int [dhm_calc_secret](#) ([dhm_context](#) *ctx, unsigned char *output, int *olen)
Derive and export the shared secret $(G^Y)^X \bmod P$.
- void [dhm_free](#) ([dhm_context](#) *ctx)
- int [dhm_self_test](#) (int verbose)
Checkup routine.

7.105.1 Detailed Description

Definition in file [dhm.h](#).

7.105.2 Define Documentation

7.105.2.1 `#define XYSSL_ERR_DHM_BAD_INPUT_DATA -0x0480`

Definition at line 9 of file dhm.h.

Referenced by `dhm_calc_secret()`, `dhm_make_public()`, `dhm_read_bignum()`, `dhm_read_params()`, and `dhm_read_public()`.

7.105.2.2 `#define XYSSL_ERR_DHM_CALC_SECRET_FAILED -0x04D0`

Definition at line 14 of file dhm.h.

Referenced by `dhm_calc_secret()`.

7.105.2.3 `#define XYSSL_ERR_DHM_MAKE_PARAMS_FAILED -0x04A0`

Definition at line 11 of file dhm.h.

Referenced by `dhm_make_params()`.

7.105.2.4 `#define XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED -0x04C0`

Definition at line 13 of file dhm.h.

Referenced by `dhm_make_public()`.

7.105.2.5 `#define XYSSL_ERR_DHM_READ_PARAMS_FAILED -0x0490`

Definition at line 10 of file dhm.h.

Referenced by `dhm_read_bignum()`.

7.105.2.6 `#define XYSSL_ERR_DHM_READ_PUBLIC_FAILED -0x04B0`

Definition at line 12 of file dhm.h.

Referenced by `dhm_read_public()`.

7.105.3 Function Documentation

7.105.3.1 `int dhm_calc_secret (dhm_context * ctx, unsigned char * output, int * olen)`

Derive and export the shared secret $(G^Y)^X \bmod P$.

Parameters

`ctx` DHM context

`output` destination buffer

`olen` number of chars written

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 208 of file dhm.c.

References dhm_context::GY, dhm_context::K, MPI_CHK, mpi_exp_mod(), mpi_size(), mpi_write_binary(), dhm_context::P, dhm_context::RP, dhm_context::X, XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_CALC_SECRET_FAILED.

Referenced by main(), ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

7.105.3.2 void dhm_free (dgm_context * ctx)

Definition at line 234 of file dhm.c.

References dhm_context::G, dhm_context::GX, dhm_context::GY, dhm_context::K, mpi_free(), dhm_context::P, dhm_context::RP, and dhm_context::X.

Referenced by main(), and ssl_free().

7.105.3.3 int dhm_make_params (dgm_context * ctx, int s_size, unsigned char * output, int * olen, int(*)(void *)f_rng, void * p_rng)

Setup and write the ServerKeyExchange parameters.

Parameters

ctx DHM context
s_size private value size in bits
output destination buffer
olen number of chars written
f_rng RNG function
p_rng RNG parameter

Note

This function assumes that ctx->P and ctx->G have already been properly set (for example using mpi_read_string or mpi_read_binary).

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 93 of file dhm.c.

References DHM_MPI_EXPORT, dhm_context::G, dhm_context::GX, dhm_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_grow(), mpi_lset(), mpi_shift_r(), mpi_size(), dhm_context::P, mpi::p, dhm_context::RP, dhm_context::X, and XYSSL_ERR_DHM_MAKE_PARAMS_FAILED.

Referenced by main(), and ssl_write_server_key_exchange().

7.105.3.4 int dhm_make_public (dgm_context * ctx, int s_size, unsigned char * output, int olen, int(*)(void *)f_rng, void * p_rng)

Create own private value X and export G^X.

Parameters

ctx DHM context
x_size private value size in bits
output destination buffer
olen must be equal to ctx->P.len
f_rng RNG function
p_rng RNG parameter

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 167 of file dhm.c.

References dhm_context::G, dhm_context::GX, dhm_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_grow(), mpi_lset(), mpi_shift_r(), mpi_write_binary(), dhm_context::P, mpi::p, dhm_context::RP, dhm_context::X, XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED.

Referenced by main(), and ssl_write_client_key_exchange().

7.105.3.5 int dhm_read_params (dhm_context * *ctx*, unsigned char ** *p*, unsigned char * *end*)

Parse the ServerKeyExchange parameters.

Parameters

ctx DHM context
p &(start of input buffer)
end end of buffer

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 63 of file dhm.c.

References dhm_read_bignum(), dhm_context::G, dhm_context::GY, dhm_context::len, mpi_size(), dhm_context::P, and XYSSL_ERR_DHM_BAD_INPUT_DATA.

Referenced by main(), and ssl_parse_server_key_exchange().

7.105.3.6 int dhm_read_public (dhm_context * *ctx*, unsigned char * *input*, int *ilen*)

Import the peer's public value G^Y .

Parameters

ctx DHM context
input input buffer
ilen size of buffer

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 150 of file dhm.c.

References dhm_context::GY, dhm_context::len, mpi_read_binary(), XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_READ_PUBLIC_FAILED.

Referenced by main(), and ssl_parse_client_key_exchange().

7.105.3.7 int dhm_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 246 of file dhm.c.

7.106 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/havege.h File Reference

Data Structures

- struct [havege_state](#)
HAVEGE state structure.

Defines

- #define [COLLECT_SIZE](#) 1024

Functions

- void [havege_init](#) ([havege_state](#) *hs)
HAVEGE initialization.
- int [havege_rand](#) (void *p_rng)
HAVEGE rand function.

7.106.1 Detailed Description

Definition in file [havege.h](#).

7.106.2 Define Documentation

7.106.2.1 #define COLLECT_SIZE 1024

Definition at line 7 of file havege.h.

Referenced by [havege_fill\(\)](#), and [havege_rand\(\)](#).

7.106.3 Function Documentation

7.106.3.1 void havege_init ([havege_state](#) * *hs*)

HAVEGE initialization.

Parameters

hs HAVEGE state to be initialized

Definition at line 188 of file havege.c.

References [havege_fill\(\)](#).

Referenced by [generate_AES_key\(\)](#), [generate_RSA_keys_ciphertext\(\)](#), [generate_RSA_keys_plaintext\(\)](#), [initiate_migration_process\(\)](#), [main\(\)](#), and [ssl_test\(\)](#).

7.106.3.2 int havege_rand (void **p_rng*)

HAVEGE rand function.

Parameters

rng_st points to an HAVEGE state

Returns

A random int

Definition at line 198 of file havege.c.

References COLLECT_SIZE, havege_fill(), havege_state::offset, and havege_state::pool.

Referenced by generate_AES_key(), generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), initiate_migration_process(), main(), and ssl_test().

7.107 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md2.h File Reference

Data Structures

- struct `md2_context`

MD2 context structure.

Functions

- void `md2_starts` (`md2_context` *ctx)
MD2 context setup.
- void `md2_update` (`md2_context` *ctx, unsigned char *input, int ilen)
MD2 process buffer.
- void `md2_finish` (`md2_context` *ctx, unsigned char output[16])
MD2 final digest.
- void `md2` (unsigned char *input, int ilen, unsigned char output[16])
Output = MD2(input buffer).
- int `md2_file` (char *path, unsigned char output[16])
Output = MD2(file contents).
- void `md2_hmac_starts` (`md2_context` *ctx, unsigned char *key, int keylen)
MD2 HMAC context setup.
- void `md2_hmac_update` (`md2_context` *ctx, unsigned char *input, int ilen)
MD2 HMAC process buffer.
- void `md2_hmac_finish` (`md2_context` *ctx, unsigned char output[16])
MD2 HMAC final digest.
- void `md2_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[16])
Output = HMAC-MD2(hmac key, input buffer).
- int `md2_self_test` (int verbose)
Checkup routine.

7.107.1 Detailed Description

Definition in file `md2.h`.

7.107.2 Function Documentation

7.107.2.1 void md2 (unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = MD2(input buffer).

Parameters

input buffer holding the data
ilen length of the input data
output MD2 checksum result

Referenced by x509_hash().

7.107.2.2 int md2_file (char * *path*, unsigned char *output*[16])

Output = MD2(file contents).

Parameters

path input file name
output MD2 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

7.107.2.3 void md2_finish (md2_context * *ctx*, unsigned char *output*[16])

MD2 final digest.

Parameters

ctx MD2 context
output MD2 checksum result

7.107.2.4 void md2_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = HMAC-MD2(hmac key, input buffer).

Parameters

key HMAC secret key
keylen length of the HMAC key
input buffer holding the data
ilen length of the input data
output HMAC-MD2 result

7.107.2.5 void md2_hmac_finish (md2_context * *ctx*, unsigned char *output*[16])

MD2 HMAC final digest.

Parameters

ctx HMAC context

output MD2 HMAC checksum result

7.107.2.6 void md2_hmac_starts (md2_context * *ctx*, unsigned char * *key*, int *keylen*)

MD2 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

7.107.2.7 void md2_hmac_update (md2_context * *ctx*, unsigned char * *input*, int *ilen*)

MD2 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

7.107.2.8 int md2_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Referenced by main().

7.107.2.9 void md2_starts (md2_context * *ctx*)

MD2 context setup.

Parameters

ctx context to be initialized

7.107.2.10 void md2_update (md2_context * *ctx*, unsigned char * *input*, int *ilen*)

MD2 process buffer.

Parameters

ctx MD2 context

input buffer holding the data

ilen length of the input data

7.108 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md4.h File Reference

Data Structures

- struct `md4_context`

MD4 context structure.

Functions

- void `md4_starts` (`md4_context` *ctx)
MD4 context setup.
- void `md4_update` (`md4_context` *ctx, unsigned char *input, int ilen)
MD4 process buffer.
- void `md4_finish` (`md4_context` *ctx, unsigned char output[16])
MD4 final digest.
- void `md4` (unsigned char *input, int ilen, unsigned char output[16])
Output = MD4(input buffer).
- int `md4_file` (char *path, unsigned char output[16])
Output = MD4(file contents).
- void `md4_hmac_starts` (`md4_context` *ctx, unsigned char *key, int keylen)
MD4 HMAC context setup.
- void `md4_hmac_update` (`md4_context` *ctx, unsigned char *input, int ilen)
MD4 HMAC process buffer.
- void `md4_hmac_finish` (`md4_context` *ctx, unsigned char output[16])
MD4 HMAC final digest.
- void `md4_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[16])
Output = HMAC-MD4(hmac key, input buffer).
- int `md4_self_test` (int verbose)
Checkup routine.

7.108.1 Detailed Description

Definition in file `md4.h`.

7.108.2 Function Documentation

7.108.2.1 void md4 (unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = MD4(input buffer).

Parameters

input buffer holding the data
ilen length of the input data
output MD4 checksum result

Referenced by main(), and x509_hash().

7.108.2.2 int md4_file (char * *path*, unsigned char *output*[16])

Output = MD4(file contents).

Parameters

path input file name
output MD4 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

7.108.2.3 void md4_finish (md4_context * *ctx*, unsigned char *output*[16])

MD4 final digest.

Parameters

ctx MD4 context
output MD4 checksum result

7.108.2.4 void md4_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = HMAC-MD4(hmac key, input buffer).

Parameters

key HMAC secret key
keylen length of the HMAC key
input buffer holding the data
ilen length of the input data
output HMAC-MD4 result

7.108.2.5 void md4_hmac_finish (md4_context * *ctx*, unsigned char *output*[16])

MD4 HMAC final digest.

Parameters

ctx HMAC context

output MD4 HMAC checksum result

7.108.2.6 void md4_hmac_starts (md4_context * *ctx*, unsigned char * *key*, int *keylen*)

MD4 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

7.108.2.7 void md4_hmac_update (md4_context * *ctx*, unsigned char * *input*, int *ilen*)

MD4 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

7.108.2.8 int md4_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Referenced by main().

7.108.2.9 void md4_starts (md4_context * *ctx*)

MD4 context setup.

Parameters

ctx context to be initialized

7.108.2.10 void md4_update (md4_context * *ctx*, unsigned char * *input*, int *ilen*)

MD4 process buffer.

Parameters

ctx MD4 context

input buffer holding the data

ilen length of the input data

7.109 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md5.h File Reference

Data Structures

- struct `md5_context`

MD5 context structure.

Functions

- void `md5_starts` (`md5_context` *ctx)
MD5 context setup.
- void `md5_update` (`md5_context` *ctx, unsigned char *input, int ilen)
MD5 process buffer.
- void `md5_finish` (`md5_context` *ctx, unsigned char output[16])
MD5 final digest.
- void `md5` (unsigned char *input, int ilen, unsigned char output[16])
Output = MD5(input buffer).
- int `md5_file` (char *path, unsigned char output[16])
Output = MD5(file contents).
- void `md5_hmac_starts` (`md5_context` *ctx, unsigned char *key, int keylen)
MD5 HMAC context setup.
- void `md5_hmac_update` (`md5_context` *ctx, unsigned char *input, int ilen)
MD5 HMAC process buffer.
- void `md5_hmac_finish` (`md5_context` *ctx, unsigned char output[16])
MD5 HMAC final digest.
- void `md5_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[16])
Output = HMAC-MD5(hmac key, input buffer).
- int `md5_self_test` (int verbose)
Checkup routine.

7.109.1 Detailed Description

Definition in file `md5.h`.

7.109.2 Function Documentation

7.109.2.1 void md5 (unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = MD5(input buffer).

Parameters

input buffer holding the data
ilen length of the input data
output MD5 checksum result

Definition at line 278 of file md5.c.

References md5_finish(), md5_starts(), and md5_update().

Referenced by initiate_migration_process(), main(), md5_hmac_starts(), md5_self_test(), reply_migration_process(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_finished(), ssl_parse_server_key_exchange(), ssl_write_finished(), ssl_write_server_key_exchange(), and x509_hash().

7.109.2.2 int md5_file (char * *path*, unsigned char *output*[16])

Output = MD5(file contents).

Parameters

path input file name
output MD5 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 292 of file md5.c.

References buf, f, md5_finish(), md5_starts(), and md5_update().

Referenced by md5_wrapper().

7.109.2.3 void md5_finish (md5_context * *ctx*, unsigned char *output*[16])

MD5 final digest.

Parameters

ctx MD5 context
output MD5 checksum result

Definition at line 250 of file md5.c.

References md5_padding, md5_update(), PUT ULONG LE, md5_context::state, and md5_context::total.

Referenced by md5(), md5_file(), md5_hmac_finish(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_server_key_exchange(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

7.109.2.4 void md5_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = HMAC-MD5(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-MD5 result

Definition at line 378 of file md5.c.

References md5_hmac_finish(), md5_hmac_starts(), and md5_hmac_update().

Referenced by ssl_decrypt_buf(), ssl_encrypt_buf(), and tls1_prf().

7.109.2.5 void md5_hmac_finish (md5_context * *ctx*, unsigned char *output*[16])

MD5 HMAC final digest.

Parameters

ctx HMAC context

output MD5 HMAC checksum result

Definition at line 362 of file md5.c.

References md5_finish(), md5_starts(), md5_update(), and md5_context::opad.

Referenced by md5_hmac(), and md5_self_test().

7.109.2.6 void md5_hmac_starts (md5_context * *ctx*, unsigned char * *key*, int *keylen*)

MD5 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

Definition at line 324 of file md5.c.

References md5_context::ipad, md5(), md5_starts(), md5_update(), and md5_context::opad.

Referenced by md5_hmac(), and md5_self_test().

7.109.2.7 void md5_hmac_update (md5_context * *ctx*, unsigned char * *input*, int *ilen*)

MD5 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 354 of file md5.c.

References md5_update().

Referenced by md5_hmac(), and md5_self_test().

7.109.2.8 int md5_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 495 of file md5.c.

References buf, md5(), md5_hmac_finish(), md5_hmac_starts(), md5_hmac_test_buf, md5_hmac_test_buflen, md5_hmac_test_key, md5_hmac_test_keylen, md5_hmac_test_sum, md5_hmac_update(), md5_test_buf, md5_test_buflen, and md5_test_sum.

Referenced by main().

7.109.2.9 void md5_starts (md5_context * *ctx*)

MD5 context setup.

Parameters

ctx context to be initialized

Definition at line 61 of file md5.c.

References md5_context::state, and md5_context::total.

Referenced by md5(), md5_file(), md5_hmac_finish(), md5_hmac_starts(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_init(), ssl_mac_md5(), ssl_parse_server_key_exchange(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

7.109.2.10 void md5_update (md5_context * *ctx*, unsigned char * *input*, int *ilen*)

MD5 process buffer.

Parameters

ctx MD5 context

input buffer holding the data

ilen length of the input data

Definition at line 198 of file md5.c.

References `md5_context::buffer`, `md5_process()`, and `md5_context::total`.

Referenced by `md5()`, `md5_file()`, `md5_finish()`, `md5_hmac_finish()`, `md5_hmac_starts()`, `md5_hmac_update()`, `ssl_calc_finished()`, `ssl_calc_verify()`, `ssl_derive_keys()`, `ssl_mac_md5()`, `ssl_parse_client_hello()`, `ssl_parse_server_key_exchange()`, `ssl_read_record()`, `ssl_write_record()`, `ssl_write_server_key_exchange()`, and `x509_des3_decrypt()`.

7.110 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/net.h File Reference

Defines

- #define XYSSL_ERR_NET_UNKNOWN_HOST -0x0F00
- #define XYSSL_ERR_NET_SOCKET_FAILED -0x0F10
- #define XYSSL_ERR_NET_CONNECT_FAILED -0x0F20
- #define XYSSL_ERR_NET_BIND_FAILED -0x0F30
- #define XYSSL_ERR_NET_LISTEN_FAILED -0x0F40
- #define XYSSL_ERR_NET_ACCEPT_FAILED -0x0F50
- #define XYSSL_ERR_NET_RECV_FAILED -0x0F60
- #define XYSSL_ERR_NET_SEND_FAILED -0x0F70
- #define XYSSL_ERR_NET_CONN_RESET -0x0F80
- #define XYSSL_ERR_NET_TRY AGAIN -0x0F90

Functions

- int **net_connect** (int *fd, char *host, int port)
Initiate a TCP connection with host:port.
- int **net_bind** (int *fd, char *bind_ip, int port)
Create a listening socket on bind_ip:port. If bind_ip == NULL, all interfaces are binded.
- int **net_accept** (int bind_fd, int *client_fd, void *client_ip)
Accept a connection from a remote client.
- int **net_set_block** (int fd)
Set the socket blocking.
- int **net_set_nonblock** (int fd)
Set the socket non-blocking.
- void **net_usleep** (unsigned long usec)
Portable usleep helper.
- int **net_recv** (void *ctx, unsigned char *buf, int len)
Read at most 'len' characters. len is updated to reflect the actual number of characters read.
- int **net_send** (void *ctx, unsigned char *buf, int len)
Write at most 'len' characters. len is updated to reflect the number of characters _not_ written.
- void **net_close** (int fd)
Gracefully shutdown the connection.

7.110.1 Detailed Description

Definition in file [net.h](#).

7.110.2 Define Documentation

7.110.2.1 #define XYSSL_ERR_NET_ACCEPT_FAILED -0x0F50

Definition at line 12 of file net.h.

Referenced by net_accept().

7.110.2.2 #define XYSSL_ERR_NET_BIND_FAILED -0x0F30

Definition at line 10 of file net.h.

Referenced by net_bind().

7.110.2.3 #define XYSSL_ERR_NET_CONN_RESET -0x0F80

Definition at line 15 of file net.h.

Referenced by main(), net_recv(), net_send(), and ssl_test().

7.110.2.4 #define XYSSL_ERR_NET_CONNECT_FAILED -0x0F20

Definition at line 9 of file net.h.

Referenced by net_connect().

7.110.2.5 #define XYSSL_ERR_NET_LISTEN_FAILED -0x0F40

Definition at line 11 of file net.h.

Referenced by net_bind().

7.110.2.6 #define XYSSL_ERR_NET_RECV_FAILED -0x0F60

Definition at line 13 of file net.h.

Referenced by net_recv().

7.110.2.7 #define XYSSL_ERR_NET_SEND_FAILED -0x0F70

Definition at line 14 of file net.h.

Referenced by net_send().

7.110.2.8 #define XYSSL_ERR_NET_SOCKET_FAILED -0x0F10

Definition at line 8 of file net.h.

Referenced by net_bind(), and net_connect().

7.110.2.9 #define XYSSL_ERR_NET_TRY AGAIN -0x0F90

Definition at line 16 of file net.h.

Referenced by main(), net_accept(), net_recv(), net_send(), and ssl_test().

7.110.2.10 #define XYSSL_ERR_NET_UNKNOWN_HOST -0x0F00

Definition at line 7 of file net.h.

Referenced by net_connect().

7.110.3 Function Documentation

7.110.3.1 int net_accept (int bind_fd, int *client_fd, void *client_ip)

Accept a connection from a remote client.

Returns

0 if successful, XYSSL_ERR_NET_ACCEPT_FAILED, or XYSSL_ERR_NET_WOULD_BLOCK is bind_fd was set to non-blocking and accept() is blocking.

Definition at line 212 of file net.c.

References net_is_blocking(), XYSSL_ERR_NET_ACCEPT_FAILED, and XYSSL_ERR_NET_TRY AGAIN.

Referenced by main(), and ssl_test().

7.110.3.2 int net_bind (int *fd, char *bind_ip, int port)

Create a listening socket on bind_ip:port. If bind_ip == NULL, all interfaces are binded.

Returns

0 if successful, or one of: XYSSL_ERR_NET_SOCKET_FAILED, XYSSL_ERR_NET_BIND_FAILED, XYSSL_ERR_NET_LISTEN_FAILED

Definition at line 126 of file net.c.

References net_htons(), SOCKET_ERROR, XYSSL_ERR_NET_BIND_FAILED, XYSSL_ERR_NET_LISTEN_FAILED, and XYSSL_ERR_NET_SOCKET_FAILED.

Referenced by main(), and ssl_test().

7.110.3.3 void net_close (int fd)

Gracefully shutdown the connection.

Definition at line 338 of file net.c.

Referenced by main(), and ssl_test().

7.110.3.4 int net_connect (int *fd, char *host, int port)

Initiate a TCP connection with host:port.

Returns

0 if successful, or one of: XYSSL_ERR_NET_SOCKET_FAILED, XYSSL_ERR_NET_UNKNOWN_HOST, XYSSL_ERR_NET_CONNECT_FAILED

Definition at line 81 of file net.c.

References net_htons(), SOCKET_ERROR, XYSSL_ERR_NET_CONNECT_FAILED, XYSSL_ERR_NET_SOCKET_FAILED, and XYSSL_ERR_NET_UNKNOWN_HOST.

Referenced by main(), and ssl_test().

7.110.3.5 int net_recv (void *ctx, unsigned char *buf, int len)

Read at most 'len' characters. len is updated to reflect the actual number of characters read.

Returns

This function returns the number of bytes received, or a negative error code; XYSSL_ERR_NET_TRY AGAIN indicates read() is blocking.

Definition at line 277 of file net.c.

References net_is_blocking(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_RECV_FAILED, and XYSSL_ERR_NET_TRY AGAIN.

Referenced by main(), and ssl_test().

7.110.3.6 int net_send (void *ctx, unsigned char *buf, int len)

Write at most 'len' characters. len is updated to reflect the number of characters _not_ written.

Returns

This function returns the number of bytes sent, or a negative error code; XYSSL_ERR_NET_TRY AGAIN indicates write() is blocking.

Definition at line 309 of file net.c.

References net_is_blocking(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_SEND_FAILED, and XYSSL_ERR_NET_TRY AGAIN.

Referenced by main(), and ssl_test().

7.110.3.7 int net_set_block (int fd)

Set the socket blocking.

Returns

0 if successful, or a non-zero error code

Definition at line 243 of file net.c.

7.110.3.8 int net_set_nonblock (int *fd*)

Set the socket non-blocking.

Returns

0 if successful, or a non-zero error code

Definition at line 253 of file net.c.

Referenced by ssl_test().

7.110.3.9 void net_usleep (unsigned long *usec*)

Portable usleep helper.

Note

Real amount of time slept will not be less than select()'s timeout granularity (typically, 10ms).

Definition at line 266 of file net.c.

7.111 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/openssl.h File Reference

```
#include "xyssl/aes.h"
#include "xyssl/md5.h"
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
```

Defines

- #define AES_SIZE 16
- #define AES_BLOCK_SIZE 16
- #define AES_KEY aes_context
- #define MD5_CTX md5_context
- #define SHA_CTX sha1_context
- #define SHA1_Init(CTX) sha1_starts((CTX))
- #define SHA1_Update(CTX, BUF, LEN) sha1_update((CTX), (unsigned char *) (BUF), (LEN))
- #define SHA1_Final(OUT, CTX) sha1_finish((CTX), (OUT))
- #define MD5_Init(CTX) md5_starts((CTX))
- #define MD5_Update(CTX, BUF, LEN) md5_update((CTX), (unsigned char *) (BUF), (LEN))
- #define MD5_Final(OUT, CTX) md5_finish((CTX), (OUT))
- #define AES_set_encrypt_key(KEY,KEYSIZE,CTX) aes_setkey_enc((CTX), (KEY), (KEYSIZE))
- #define AES_set_decrypt_key(KEY,KEYSIZE,CTX) aes_setkey_dec((CTX), (KEY), (KEYSIZE))
- #define AES_cbc_encrypt(INPUT, OUTPUT, LEN, CTX, IV, MODE) aes_crypt_cbc((CTX), (MODE), (LEN), (IV), (INPUT), (OUTPUT))
- #define RSA rsa_context
- #define RSA_PKCS1_PADDING 1
- #define RSA_size(CTX) (CTX)->len
- #define RSA_free(CTX) rsa_free(CTX)
- #define ERR_get_error() "ERR_get_error() not supported"
- #define RSA_blinding_off(IGNORE)
- #define d2i_RSAPrivateKey(a, b, c) new rsa_context

Functions

- int __RSA_Passthrough (void *output, void *input, int size)
- rsa_context * d2i_RSA_PUBKEY (void *ignore, unsigned char **bufptr, int len)
- int RSA_public_decrypt (int size, unsigned char *input, unsigned char *output, RSA *key, int ignore)
- int RSA_private_decrypt (int size, unsigned char *input, unsigned char *output, RSA *key, int ignore)
- int RSA_public_encrypt (int size, unsigned char *input, unsigned char *output, RSA *key, int ignore)
- int RSA_private_encrypt (int size, unsigned char *input, unsigned char *output, RSA *key, int ignore)

7.111.1 Detailed Description

Definition in file [openssl.h](#).

7.111.2 Define Documentation

7.111.2.1 #define AES_BLOCK_SIZE 16

Definition at line 16 of file [openssl.h](#).

7.111.2.2 #define AES_cbc_encrypt(INPUT, OUTPUT, LEN, CTX, IV, MODE) aes_crypt_cbc((CTX), (MODE), (LEN), (IV), (INPUT), (OUTPUT))

Definition at line 39 of file [openssl.h](#).

7.111.2.3 #define AES_KEY aes_context

Definition at line 17 of file [openssl.h](#).

7.111.2.4 #define AES_set_decrypt_key(KEY, KEYSIZE, CTX) aes_setkey_dec((CTX), (KEY), (KEYSIZE))

Definition at line 37 of file [openssl.h](#).

7.111.2.5 #define AES_set_encrypt_key(KEY, KEYSIZE, CTX) aes_setkey_enc((CTX), (KEY), (KEYSIZE))

Definition at line 35 of file [openssl.h](#).

7.111.2.6 #define AES_SIZE 16

Definition at line 15 of file [openssl.h](#).

7.111.2.7 #define d2i_RSAPrivateKey(a, b, c) new rsa_context

Definition at line 102 of file [openssl.h](#).

7.111.2.8 #define ERR_get_error() "ERR_get_error() not supported"

Definition at line 99 of file [openssl.h](#).

7.111.2.9 #define MD5_CTX md5_context

Definition at line 18 of file [openssl.h](#).

7.111.2.10 #define MD5_Final(OUT, CTX) md5_finish((CTX), (OUT))

Definition at line 32 of file openssl.h.

7.111.2.11 #define MD5_Init(CTX) md5_starts((CTX))

Definition at line 28 of file openssl.h.

7.111.2.12 #define MD5_Update(CTX, BUF, LEN) md5_update((CTX), (unsigned char *) (BUF), (LEN))

Definition at line 30 of file openssl.h.

7.111.2.13 #define RSA rsa_context

Definition at line 95 of file openssl.h.

7.111.2.14 #define RSA_blinding_off(IGNORE)

Definition at line 100 of file openssl.h.

7.111.2.15 #define RSA_free(CTX) rsa_free(CTX)

Definition at line 98 of file openssl.h.

7.111.2.16 #define RSA_PKCS1_PADDING 1

Definition at line 96 of file openssl.h.

7.111.2.17 #define RSA_size(CTX) (CTX)->len

Definition at line 97 of file openssl.h.

Referenced by RSA_private_encrypt(), and RSA_public_encrypt().

7.111.2.18 #define SHA1_Final(OUT, CTX) sha1_finish((CTX), (OUT))

Definition at line 25 of file openssl.h.

7.111.2.19 #define SHA1_Init(CTX) sha1_starts((CTX))

Definition at line 21 of file openssl.h.

7.111.2.20 #define SHA1_Update(CTX, BUF, LEN) sha1_update((CTX), (unsigned char *) (BUF), (LEN))

Definition at line 23 of file openssl.h.

7.111.2.21 #define SHA_CTX sha1_context

Definition at line 19 of file openssl.h.

7.111.3 Function Documentation

7.111.3.1 int __RSA_Passthrough (void * *output*, void * *input*, int *size*) [inline]

Definition at line 45 of file openssl.h.

7.111.3.2 rsa_context* d2i_RSA_PUBKEY (void * *ignore*, unsigned char ** *bufptr*, int *len*) [inline]

Definition at line 51 of file openssl.h.

References rsa_context::E, rsa_context::len, mpi_msb(), mpi_read_binary(), and rsa_context::N.

7.111.3.3 int RSA_private_decrypt (int *size*, unsigned char * *input*, unsigned char * *output*, RSA * *key*, int *ignore*) [inline]

Definition at line 105 of file openssl.h.

References rsa_pkcs1_decrypt(), and RSA_PRIVATE.

7.111.3.4 int RSA_private_encrypt (int *size*, unsigned char * *input*, unsigned char * *output*, RSA * *key*, int *ignore*) [inline]

Definition at line 107 of file openssl.h.

References rsa_pkcs1_encrypt(), RSA_PRIVATE, and RSA_size.

7.111.3.5 int RSA_public_decrypt (int *size*, unsigned char * *input*, unsigned char * *output*, RSA * *key*, int *ignore*) [inline]

Definition at line 104 of file openssl.h.

References rsa_pkcs1_decrypt(), and RSA_PUBLIC.

7.111.3.6 int RSA_public_encrypt (int *size*, unsigned char * *input*, unsigned char * *output*, RSA * *key*, int *ignore*) [inline]

Definition at line 106 of file openssl.h.

References rsa_pkcs1_encrypt(), RSA_PUBLIC, and RSA_size.

7.112 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h File Reference

```
#include "xyssl/aes.h"
```

7.112.1 Detailed Description

Definition in file [padlock.h](#).

7.113 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/rsa.h File Reference

```
#include "bignum.h"
```

Data Structures

- struct **rsa_context**
RSA context structure.

Defines

- #define **XYSSL_ERR_RSA_BAD_INPUT_DATA** -0x0400
- #define **XYSSL_ERR_RSA_INVALID_PADDING** -0x0410
- #define **XYSSL_ERR_RSA_KEY_GEN_FAILED** -0x0420
- #define **XYSSL_ERR_RSA_KEY_CHECK_FAILED** -0x0430
- #define **XYSSL_ERR_RSA_PUBLIC_FAILED** -0x0440
- #define **XYSSL_ERR_RSA_PRIVATE_FAILED** -0x0450
- #define **XYSSL_ERR_RSA_VERIFY_FAILED** -0x0460
- #define **RSA_RAW** 0
- #define **RSA_MD2** 2
- #define **RSA_MD4** 3
- #define **RSA_MD5** 4
- #define **RSA_SHA1** 5
- #define **RSA_SHA256** 6
- #define **RSA_PUBLIC** 0
- #define **RSA_PRIVATE** 1
- #define **RSA_PKCS_V15** 0
- #define **RSA_PKCS_V21** 1
- #define **RSA_SIGN** 1
- #define **RSA_CRYPT** 2
- #define **ASN1_HASH_MDX**
- #define **ASN1_HASH_SHA1**

Functions

- void **rsa_init** (**rsa_context** *ctx, int padding, int hash_id, int(*f_rng)(void *), void *p_rng)
Initialize an RSA context.
- int **rsa_gen_key** (**rsa_context** *ctx, int nbits, int exponent)
Generate an RSA keypair.
- int **rsa_check_pubkey** (**rsa_context** *ctx)
Check a public RSA key.
- int **rsa_check_privkey** (**rsa_context** *ctx)
Check a private RSA key.

- int [rsa_public](#) ([rsa_context](#) *ctx, unsigned char *input, unsigned char *output)
Do an RSA public key operation.
- int [rsa_private](#) ([rsa_context](#) *ctx, unsigned char *input, unsigned char *output)
Do an RSA private key operation.
- int [rsa_pkcs1_encrypt](#) ([rsa_context](#) *ctx, int mode, int ilen, unsigned char *input, unsigned char *output)
Add the message padding, then do an RSA operation.
- int [rsa_pkcs1_decrypt](#) ([rsa_context](#) *ctx, int mode, int *olen, unsigned char *input, unsigned char *output)
Do an RSA operation, then remove the message padding.
- int [rsa_pkcs1_sign](#) ([rsa_context](#) *ctx, int mode, int hash_id, int hashlen, unsigned char *hash, unsigned char *sig)
Do a private RSA to sign a message digest.
- int [rsa_pkcs1_verify](#) ([rsa_context](#) *ctx, int mode, int hash_id, int hashlen, unsigned char *hash, unsigned char *sig)
Do a public RSA and check the message digest.
- void [rsa_free](#) ([rsa_context](#) *ctx)
Free the components of an RSA key.
- int [rsa_self_test](#) (int verbose)
Checkup routine.

7.113.1 Detailed Description

Definition in file [rsa.h](#).

7.113.2 Define Documentation

7.113.2.1 #define ASN1_HASH_MDX

Value:

```
"\x30\x20\x30\x0C\x06\x08\x2A\x86\x48" \
"\x86\xF7\x0D\x02\x00\x05\x00\x04\x10"
```

Definition at line 45 of file [rsa.h](#).

Referenced by [rsa_pkcs1_sign\(\)](#), and [rsa_pkcs1_verify\(\)](#).

7.113.2.2 #define ASN1_HASH_SHA1**Value:**

```
"\x30\x21\x30\x09\x06\x05\x2B\x0E\x03" \
"\x02\x1A\x05\x00\x04\x14"
```

Definition at line 49 of file rsa.h.

Referenced by rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.113.2.3 #define RSA_CRYPT 2

Definition at line 34 of file rsa.h.

Referenced by rsa_pkcs1_decrypt(), and rsa_pkcs1_encrypt().

7.113.2.4 #define RSA_MD2 2

Definition at line 21 of file rsa.h.

Referenced by rsa_pkcs1_sign(), rsa_pkcs1_verify(), x509_hash(), and x509parse_cert_info().

7.113.2.5 #define RSA_MD4 3

Definition at line 22 of file rsa.h.

Referenced by rsa_pkcs1_sign(), rsa_pkcs1_verify(), x509_hash(), and x509parse_cert_info().

7.113.2.6 #define RSA_MD5 4

Definition at line 23 of file rsa.h.

Referenced by rsa_pkcs1_sign(), rsa_pkcs1_verify(), x509_hash(), and x509parse_cert_info().

7.113.2.7 #define RSA_PKCS_V15 0

Definition at line 30 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_decrypt(), rsa_encryption(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.113.2.8 #define RSA_PKCS_V21 1

Definition at line 31 of file rsa.h.

7.113.2.9 #define RSA_PRIVATE 1

Definition at line 28 of file rsa.h.

Referenced by main(), RSA_private_decrypt(), RSA_private_encrypt(), rsa_self_test(), ssl_parse_client_key_exchange(), ssl_write_certificate_verify(), and ssl_write_server_key_exchange().

7.113.2.10 #define RSA_PUBLIC 0

Definition at line 27 of file rsa.h.

Referenced by main(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), RSA_public_decrypt(), RSA_public_encrypt(), rsa_self_test(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), and x509parse_verify().

7.113.2.11 #define RSA_RAW 0

Definition at line 20 of file rsa.h.

Referenced by rsa_pkcs1_sign(), rsa_pkcs1_verify(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), ssl_write_certificate_verify(), and ssl_write_server_key_exchange().

7.113.2.12 #define RSA_SHA1 5

Definition at line 24 of file rsa.h.

Referenced by main(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), rsa_self_test(), x509_hash(), and x509parse_cert_info().

7.113.2.13 #define RSA_SHA256 6

Definition at line 25 of file rsa.h.

7.113.2.14 #define RSA_SIGN 1

Definition at line 33 of file rsa.h.

Referenced by rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.113.2.15 #define XYSSL_ERR_RSA_BAD_INPUT_DATA -0x0400

Definition at line 9 of file rsa.h.

Referenced by rsa_gen_key(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), rsa_private(), and rsa_public().

7.113.2.16 #define XYSSL_ERR_RSA_INVALID_PADDING -0x0410

Definition at line 10 of file rsa.h.

Referenced by rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.113.2.17 #define XYSSL_ERR_RSA_KEY_CHECK_FAILED -0x0430

Definition at line 12 of file rsa.h.

Referenced by rsa_check_privkey(), and rsa_check_pubkey().

7.113.2.18 #define XYSSL_ERR_RSA_KEY_GEN_FAILED -0x0420

Definition at line 11 of file rsa.h.

Referenced by rsa_gen_key().

7.113.2.19 #define XYSSL_ERR_RSA_PRIVATE_FAILED -0x0450

Definition at line 14 of file rsa.h.

Referenced by rsa_private().

7.113.2.20 #define XYSSL_ERR_RSA_PUBLIC_FAILED -0x0440

Definition at line 13 of file rsa.h.

Referenced by rsa_public().

7.113.2.21 #define XYSSL_ERR_RSA_VERIFY_FAILED -0x0460

Definition at line 15 of file rsa.h.

Referenced by rsa_pkcs1_verify().

7.113.3 Function Documentation

7.113.3.1 int rsa_check_privkey (rsa_context * *ctx*)

Check a private RSA key.

Parameters

ctx RSA context to be checked

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 152 of file rsa.c.

References rsa_context::D, rsa_context::E, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_free(), mpi_gcd(), mpi_init(), mpi_mod_mpi(), mpi_mul_mpi(), mpi_sub_int(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_check_pubkey(), and XYSSL_ERR_RSA_KEY_CHECK_FAILED.

Referenced by rsa_decryption(), rsa_self_test(), and x509parse_key().

7.113.3.2 int rsa_check_pubkey (rsa_context * *ctx*)

Check a public RSA key.

Parameters

ctx RSA context to be checked

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 132 of file rsa.c.

References rsa_context::E, mpi_msb(), rsa_context::N, mpi::p, and XYSSL_ERR_RSA_KEY_CHECK_FAILED.

Referenced by rsa_check_privkey(), rsa_encryption(), rsa_self_test(), and x509parse_crt().

7.113.3.3 void rsa_free (rsa_context * *ctx*)

Free the components of an RSA key.

Definition at line 558 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, mpi_free(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_context::RN, rsa_context::RP, and rsa_context::RQ.

Referenced by main(), rsa_gen_key(), rsa_self_test(), ssl_test(), x509_free(), x509_self_test(), and x509parse_key().

7.113.3.4 int rsa_gen_key (rsa_context * *ctx*, int *nbits*, int *exponent*)

Generate an RSA keypair.

Parameters

ctx RSA context that will hold the key

nbits size of the public key in bits

exponent public exponent (e.g., 65537)

Note

[rsa_init\(\)](#) must be called beforehand to setup the RSA context (especially f_rng and p_rng).

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 60 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, rsa_context::f_rng, rsa_context::len, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_free(), mpi_gcd(), mpi_gen_prime(), mpi_init(), mpi_inv_mod(), mpi_lset(), mpi_mod_mpi(), mpi_msb(), mpi_mul_mpi(), mpi_sub_int(), mpi_swap(), rsa_context::N, rsa_context::P, rsa_context::p_rng, rsa_context::Q, rsa_context::QP, rsa_free(), XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_KEY_GEN_FAILED.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

7.113.3.5 void rsa_init (rsa_context * *ctx*, int *padding*, int *hash_id*, int(*)(void *) *f_rng*, void * *p_rng*)

Initialize an RSA context.

Parameters

ctx RSA context to be initialized
padding RSA_PKCS_V15 or RSA_PKCS_V21
hash_id RSA_PKCS_V21 hash identifier
f_rng RNG function
p_rng RNG parameter

Note

The hash_id parameter is actually ignored when using RSA_PKCS_V15 padding.
Currently (xyssl-0.8), RSA_PKCS_V21 padding is not supported.

Definition at line 40 of file rsa.c.

References rsa_context::f_rng, rsa_context::hash_id, rsa_context::p_rng, and rsa_context::padding.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_decrypt(), and rsa_encrypt().

7.113.3.6 int rsa_pkcs1_decrypt (rsa_context * *ctx*, int *mode*, int * *olen*, unsigned char * *input*, unsigned char * *output*)

Do an RSA operation, then remove the message padding.

Parameters

ctx RSA context
mode RSA_PUBLIC or RSA_PRIVATE
input buffer holding the encrypted data
output buffer that will hold the plaintext
olen will contain the plaintext length

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The output buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 326 of file rsa.c.

References buf, rsa_context::len, rsa_context::padding, RSA_CRYPT, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_INVALID_PADDING.

Referenced by rsa_decrypt(), RSA_private_decrypt(), RSA_public_decrypt(), rsa_self_test(), and ssl_parse_client_key_exchange().

7.113.3.7 int rsa_pkcs1_encrypt (rsa_context * *ctx*, int *mode*, int *ilen*, unsigned char * *input*, unsigned char * *output*)

Add the message padding, then do an RSA operation.

Parameters

ctx RSA context
mode RSA_PUBLIC or RSA_PRIVATE
ilen contains the the plaintext length
input buffer holding the data to be encrypted
output buffer that will hold the ciphertext

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The output buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 280 of file rsa.c.

References rsa_context::len, rsa_context::padding, RSA_CRYPT, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_INVALID_PADDING.

Referenced by rsa_encryption(), RSA_private_encrypt(), RSA_public_encrypt(), rsa_self_test(), and ssl_write_client_key_exchange().

7.113.3.8 int rsa_pkcs1_sign (rsa_context * *ctx*, int *mode*, int *hash_id*, int *hashlen*, unsigned char * *hash*, unsigned char * *sig*)

Do a private RSA to sign a message digest.

Parameters

ctx RSA context
mode RSA_PUBLIC or RSA_PRIVATE
hash_id RSA_RAW, RSA_MD{2,4,5} or RSA_SHA{1,256}
hashlen message digest length (for RSA_RAW only)
hash buffer holding the message digest
sig buffer that will hold the ciphertext

Returns

0 if the signing operation was successful, or an XYSSL_ERR_RSA_XXX error code

Note

The "sig" buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 379 of file rsa.c.

References ASN1_HASH_MDX, ASN1_HASH_SHA1, rsa_context::len, rsa_context::padding, RSA_MD2, RSA_MD4, RSA_MD5, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, RSA_RAW, RSA_SHA1, RSA_SIGN, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_INVALID_PADDING.

Referenced by main(), rsa_self_test(), ssl_write_certificate_verify(), and ssl_write_server_key_exchange().

7.113.3.9 int rsa_pkcs1_verify (rsa_context * *ctx*, int *mode*, int *hash_id*, int *hashlen*, unsigned char * *hash*, unsigned char * *sig*)

Do a public RSA and check the message digest.

Parameters

ctx points to an RSA public key
mode RSA_PUBLIC or RSA_PRIVATE
hash_id RSA_RAW, RSA_MD{2,4,5} or RSA_SHA{1,256}
hashlen message digest length (for RSA_RAW only)
hash buffer holding the message digest
sig buffer holding the ciphertext

Returns

0 if the verify operation was successful, or an XYSSL_ERR_RSA_XXX error code

Note

The "sig" buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 468 of file rsa.c.

References ASN1_HASH_MDX, ASN1_HASH_SHA1, buf, rsa_context::len, rsa_context::padding, RSA_MD2, RSA_MD4, RSA_MD5, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, RSA_RAW, RSA_SHA1, RSA_SIGN, XYSSL_ERR_RSA_BAD_INPUT_DATA, XYSSL_ERR_RSA_INVALID_PADDING, and XYSSL_ERR_RSA_VERIFY_FAILED.

Referenced by main(), rsa_self_test(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), and x509parse_verify().

7.113.3.10 int rsa_private (rsa_context * *ctx*, unsigned char * *input*, unsigned char * *output*)

Do an RSA private key operation.

Parameters

ctx RSA context
input input buffer
output output buffer

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The input and output buffers must be large enough (eg. 128 bytes if RSA-1024 is used).

Definition at line 221 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::len, mpi_add_mpi(), MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_mod_mpi(), mpi_mul_mpi(), mpi_read_binary(), mpi_sub_mpi(), mpi_write_binary(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_context::RN, rsa_context::RP, rsa_context::RQ, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_PRIVATE_FAILED.

Referenced by main(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.113.3.11 int rsa_public (rsa_context * *ctx*, unsigned char * *input*, unsigned char * *output*)

Do an RSA public key operation.

Parameters

ctx RSA context
input input buffer
output output buffer

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

This function does NOT take care of message padding. Also, be sure to set *input*[0] = 0.
The input and output buffers must be large enough (eg. 128 bytes if RSA-1024 is used).

Definition at line 187 of file rsa.c.

References rsa_context::E, rsa_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_read_binary(), mpi_write_binary(), rsa_context::N, rsa_context::RN, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_PUBLIC_FAILED.

Referenced by main(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.113.3.12 int rsa_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 627 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, KEY_LEN, rsa_context::len, mpi_read_string(), rsa_context::N, rsa_context::P, PT_LEN, rsa_context::Q, rsa_context::QP, rsa_check_privkey(), rsa_check_pubkey(), RSA_D, RSA_DP, RSA_DQ, RSA_E, rsa_free(), RSA_N, RSA_P, rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), RSA_PRIVATE, RSA_PT, RSA_PUBLIC, RSA_Q, RSA_QP, RSA_SHA1, and sha1().

Referenced by main().

7.114 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h File Reference

Data Structures

- struct `sha1_context`
SHA-1 context structure.

Functions

- void `sha1_starts` (`sha1_context` *ctx)
SHA-1 context setup.
- void `sha1_update` (`sha1_context` *ctx, unsigned char *input, int ilen)
SHA-1 process buffer.
- void `sha1_finish` (`sha1_context` *ctx, unsigned char output[20])
SHA-1 final digest.
- void `sha1` (unsigned char *input, int ilen, unsigned char output[20])
 $Output = SHA-1(input \ buffer).$
- int `sha1_file` (char *path, unsigned char output[20])
 $Output = SHA-1(file \ contents).$
- void `sha1_hmac_starts` (`sha1_context` *ctx, unsigned char *key, int keylen)
SHA-1 HMAC context setup.
- void `sha1_hmac_update` (`sha1_context` *ctx, unsigned char *input, int ilen)
SHA-1 HMAC process buffer.
- void `sha1_hmac_finish` (`sha1_context` *ctx, unsigned char output[20])
SHA-1 HMAC final digest.
- void `sha1_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[20])
 $Output = HMAC-SHA-1(hmac \ key, input \ buffer).$
- int `sha1_self_test` (int verbose)
Checkup routine.

7.114.1 Detailed Description

Definition in file `sha1.h`.

7.114.2 Function Documentation

7.114.2.1 void sha1 (unsigned char * *input*, int *ilen*, unsigned char *output*[20])

Output = SHA-1(input buffer).

Parameters

input buffer holding the data

ilen length of the input data

output SHA-1 checksum result

Definition at line 313 of file sha1.c.

References sha1_finish(), sha1_starts(), and sha1_update().

Referenced by main(), rsa_self_test(), sha1_hmac_starts(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_finished(), ssl_parse_server_key_exchange(), ssl_write_finished(), ssl_write_server_key_exchange(), and x509_hash().

7.114.2.2 int sha1_file (char * *path*, unsigned char *output*[20])

Output = SHA-1(file contents).

Parameters

path input file name

output SHA-1 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 327 of file sha1.c.

References buf, f, sha1_finish(), sha1_starts(), and sha1_update().

Referenced by main(), and sha1_wrapper().

7.114.2.3 void sha1_finish (sha1_context * *ctx*, unsigned char *output*[20])

SHA-1 final digest.

Parameters

ctx SHA-1 context

output SHA-1 checksum result

Definition at line 284 of file sha1.c.

References PUT ULONG_BE, sha1_padding, sha1_update(), sha1_context::state, and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_hmac_finish(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

7.114.2.4 void sha1_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[20])

Output = HMAC-SHA-1(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-SHA-1 result

Definition at line 413 of file sha1.c.

References sha1_hmac_finish(), sha1_hmac_starts(), and sha1_hmac_update().

Referenced by ssl_decrypt_buf(), ssl_encrypt_buf(), and tls1_prf().

7.114.2.5 void sha1_hmac_finish (sha1_context * *ctx*, unsigned char *output*[20])

SHA-1 HMAC final digest.

Parameters

ctx HMAC context

output SHA-1 HMAC checksum result

Definition at line 397 of file sha1.c.

References sha1_context::opad, sha1_finish(), sha1_starts(), and sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

7.114.2.6 void sha1_hmac_starts (sha1_context * *ctx*, unsigned char * *key*, int *keylen*)

SHA-1 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

Definition at line 359 of file sha1.c.

References sha1_context::ipad, sha1_context::opad, sha1(), sha1_starts(), and sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

7.114.2.7 void sha1_hmac_update (sha1_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-1 HMAC process buffer.

Parameters

- ctx* HMAC context
- input* buffer holding the data
- ilen* length of the input data

Definition at line 389 of file sha1.c.

References sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

7.114.2.8 int sha1_self_test (int *verbose*)

Checkup routine.

Returns

- 0 if successful, or 1 if the test failed

Definition at line 521 of file sha1.c.

References buf, sha1_finish(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_hmac_test_buf, sha1_hmac_test buflen, sha1_hmac_test_key, sha1_hmac_test_keylen, sha1_hmac_test_sum, sha1_hmac_update(), sha1_starts(), sha1_test_buf, sha1_test buflen, sha1_test_sum, and sha1_update().

Referenced by main().

7.114.2.9 void sha1_starts (sha1_context * *ctx*)

SHA-1 context setup.

Parameters

- ctx* context to be initialized

Definition at line 61 of file sha1.c.

References sha1_context::state, and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_init(), ssl_mac_sha1(), ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

7.114.2.10 void sha1_update (sha1_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-1 process buffer.

Parameters

- ctx* SHA-1 context

input buffer holding the data

ilen length of the input data

Definition at line 232 of file sha1.c.

References sha1_context::buffer, sha1_process(), and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_finish(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_hmac_update(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_client_hello(), ssl_parse_server_key_exchange(), ssl_read_record(), ssl_write_record(), and ssl_write_server_key_exchange().

7.115 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha2.h File Reference

Data Structures

- struct [sha2_context](#)
SHA-256 context structure.

Functions

- void [sha2_starts](#) ([sha2_context](#) *ctx, int is224)
SHA-256 context setup.
- void [sha2_update](#) ([sha2_context](#) *ctx, unsigned char *input, int ilen)
SHA-256 process buffer.
- void [sha2_finish](#) ([sha2_context](#) *ctx, unsigned char output[32])
SHA-256 final digest.
- void [sha2](#) (unsigned char *input, int ilen, unsigned char output[32], int is224)
Output = SHA-256(input buffer).
- int [sha2_file](#) (char *path, unsigned char output[32], int is224)
Output = SHA-256(file contents).
- void [sha2_hmac_starts](#) ([sha2_context](#) *ctx, unsigned char *key, int keylen, int is224)
SHA-256 HMAC context setup.
- void [sha2_hmac_update](#) ([sha2_context](#) *ctx, unsigned char *input, int ilen)
SHA-256 HMAC process buffer.
- void [sha2_hmac_finish](#) ([sha2_context](#) *ctx, unsigned char output[32])
SHA-256 HMAC final digest.
- void [sha2_hmac](#) (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[32], int is224)
Output = HMAC-SHA-256(hmac key, input buffer).
- int [sha2_self_test](#) (int verbose)
Checkup routine.

7.115.1 Detailed Description

Definition in file [sha2.h](#).

7.115.2 Function Documentation

7.115.2.1 void sha2 (unsigned char * *input*, int *ilen*, unsigned char *output*[32], int *is224*)

Output = SHA-256(input buffer).

Parameters

input buffer holding the data
ilen length of the input data
output SHA-224/256 checksum result
is224 0 = use SHA256, 1 = use SHA224

Definition at line 314 of file sha2.c.

References sha2_finish(), sha2_starts(), and sha2_update().

Referenced by main(), and sha2_hmac_starts().

7.115.2.2 int sha2_file (char * *path*, unsigned char *output*[32], int *is224*)

Output = SHA-256(file contents).

Parameters

path input file name
output SHA-224/256 checksum result
is224 0 = use SHA256, 1 = use SHA224

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 329 of file sha2.c.

References buf, f, sha2_finish(), sha2_starts(), and sha2_update().

Referenced by sha2_wrapper().

7.115.2.3 void sha2_finish (sha2_context * *ctx*, unsigned char *output*[32])

SHA-256 final digest.

Parameters

ctx SHA-256 context
output SHA-224/256 checksum result

Definition at line 280 of file sha2.c.

References sha2_context::is224, PUT ULONG_BE, sha2_padding, sha2_update(), sha2_context::state, and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_hmac_finish(), and sha2_self_test().

7.115.2.4 void sha2_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[32], int *is224*)

Output = HMAC-SHA-256(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-SHA-224/256 result

is224 0 = use SHA256, 1 = use SHA224

Definition at line 420 of file sha2.c.

References sha2_hmac_finish(), sha2_hmac_starts(), and sha2_hmac_update().

7.115.2.5 void sha2_hmac_finish (sha2_context * *ctx*, unsigned char *output*[32])

SHA-256 HMAC final digest.

Parameters

ctx HMAC context

output SHA-224/256 HMAC checksum result

Definition at line 400 of file sha2.c.

References sha2_context::is224, sha2_context::opad, sha2_finish(), sha2_starts(), and sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

7.115.2.6 void sha2_hmac_starts (sha2_context * *ctx*, unsigned char * *key*, int *keylen*, int *is224*)

SHA-256 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

is224 0 = use SHA256, 1 = use SHA224

Definition at line 361 of file sha2.c.

References sha2_context::ipad, sha2_context::opad, sha2(), sha2_starts(), and sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

7.115.2.7 void sha2_hmac_update (sha2_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-256 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 392 of file sha2.c.

References sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

7.115.2.8 int sha2_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 599 of file sha2.c.

References buf, sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_test_buf, sha2_hmac_test buflen, sha2_hmac_test_key, sha2_hmac_test_keylen, sha2_hmac_test_sum, sha2_hmac_update(), sha2_starts(), sha2_test_buf, sha2_test buflen, sha2_test_sum, and sha2_update().

Referenced by main().

7.115.2.9 void sha2_starts (sha2_context * *ctx*, int *is224*)

SHA-256 context setup.

Parameters

ctx context to be initialized

is224 0 = use SHA256, 1 = use SHA224

Definition at line 61 of file sha2.c.

References sha2_context::is224, sha2_context::state, and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_hmac_finish(), sha2_hmac_starts(), and sha2_self_test().

7.115.2.10 void sha2_update (sha2_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-256 process buffer.

Parameters

ctx SHA-256 context

input buffer holding the data

ilen length of the input data

Definition at line 228 of file sha2.c.

References sha2_context::buffer, sha2_process(), and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_update(), and sha2_self_test().

7.116 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha4.h File Reference

Data Structures

- struct `sha4_context`
SHA-512 context structure.

Defines

- #define `UL64`(x) x##ULL
- #define `int64` long long

Functions

- void `sha4_starts` (`sha4_context` *ctx, int is384)
SHA-512 context setup.
- void `sha4_update` (`sha4_context` *ctx, unsigned char *input, int ilen)
SHA-512 process buffer.
- void `sha4_finish` (`sha4_context` *ctx, unsigned char output[64])
SHA-512 final digest.
- void `sha4` (unsigned char *input, int ilen, unsigned char output[64], int is384)
Output = SHA-512(input buffer).
- int `sha4_file` (char *path, unsigned char output[64], int is384)
Output = SHA-512(file contents).
- void `sha4_hmac_starts` (`sha4_context` *ctx, unsigned char *key, int keylen, int is384)
SHA-512 HMAC context setup.
- void `sha4_hmac_update` (`sha4_context` *ctx, unsigned char *input, int ilen)
SHA-512 HMAC process buffer.
- void `sha4_hmac_finish` (`sha4_context` *ctx, unsigned char output[64])
SHA-512 HMAC final digest.
- void `sha4_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[64], int is384)
Output = HMAC-SHA-512(hmac key, input buffer).
- int `sha4_self_test` (int verbose)
Checkup routine.

7.116.1 Detailed Description

Definition in file [sha4.h](#).

7.116.2 Define Documentation

7.116.2.1 `#define int64 long long`

Definition at line 12 of file sha4.h.

Referenced by sha4_finish(), sha4_process(), and sha4_update().

7.116.2.2 `#define UL64(x) x##ULL`

Definition at line 11 of file sha4.h.

Referenced by sha4_starts().

7.116.3 Function Documentation

7.116.3.1 `void sha4 (unsigned char * input, int ilen, unsigned char output[64], int is384)`

Output = SHA-512(input buffer).

Parameters

input buffer holding the data

ilen length of the input data

output SHA-384/512 checksum result

is384 0 = use SHA512, 1 = use SHA384

Definition at line 312 of file sha4.c.

References sha4_finish(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac_starts().

7.116.3.2 `int sha4_file (char * path, unsigned char output[64], int is384)`

Output = SHA-512(file contents).

Parameters

path input file name

output SHA-384/512 checksum result

is384 0 = use SHA512, 1 = use SHA384

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 327 of file sha4.c.

References buf, f, sha4_finish(), sha4_starts(), and sha4_update().

7.116.3.3 void sha4_finish (sha4_context * *ctx*, unsigned char *output*[64])

SHA-512 final digest.

Parameters

ctx SHA-512 context

output SHA-384/512 checksum result

Definition at line 276 of file sha4.c.

References int64, sha4_context::is384, PUT_UINT64_BE, sha4_padding, sha4_update(), sha4_context::state, and sha4_context::total.

Referenced by sha4(), sha4_file(), sha4_hmac_finish(), and sha4_self_test().

7.116.3.4 void sha4_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[64], int *is384*)

Output = HMAC-SHA-512(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-SHA-384/512 result

is384 0 = use SHA512, 1 = use SHA384

Definition at line 419 of file sha4.c.

References sha4_hmac_finish(), sha4_hmac_starts(), and sha4_hmac_update().

7.116.3.5 void sha4_hmac_finish (sha4_context * *ctx*, unsigned char *output*[64])

SHA-512 HMAC final digest.

Parameters

ctx HMAC context

output SHA-384/512 HMAC checksum result

Definition at line 399 of file sha4.c.

References sha4_context::is384, sha4_context::opad, sha4_finish(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

7.116.3.6 void sha4_hmac_starts (sha4_context * *ctx*, unsigned char * *key*, int *keylen*, int *is384*)

SHA-512 HMAC context setup.

Parameters

ctx HMAC context to be initialized
is384 0 = use SHA512, 1 = use SHA384
key HMAC secret key
keylen length of the HMAC key

Definition at line 359 of file sha4.c.

References sha4_context::ipad, sha4_context::opad, sha4(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

7.116.3.7 void sha4_hmac_update (sha4_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-512 HMAC process buffer.

Parameters

ctx HMAC context
input buffer holding the data
ilen length of the input data

Definition at line 390 of file sha4.c.

References sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

7.116.3.8 int sha4_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 654 of file sha4.c.

References buf, sha4_finish(), sha4_hmac_finish(), sha4_hmac_starts(), sha4_hmac_test_buf, sha4_hmac_test buflen, sha4_hmac_test_key, sha4_hmac_test_keylen, sha4_hmac_test_sum, sha4_hmac_update(), sha4_starts(), sha4_test_buf, sha4_test buflen, sha4_test_sum, and sha4_update().

Referenced by main().

7.116.3.9 void sha4_starts (sha4_context * *ctx*, int *is384*)

SHA-512 context setup.

Parameters

ctx context to be initialized

is384 0 = use SHA512, 1 = use SHA384

Definition at line 116 of file sha4.c.

References sha4_context::is384, sha4_context::state, sha4_context::total, and UL64.

Referenced by sha4(), sha4_file(), sha4_hmac_finish(), sha4_hmac_starts(), and sha4_self_test().

7.116.3.10 void sha4_update (sha4_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-512 process buffer.

Parameters

ctx SHA-512 context

input buffer holding the data

ilen length of the input data

Definition at line 221 of file sha4.c.

References sha4_context::buffer, int64, sha4_process(), and sha4_context::total.

Referenced by sha4(), sha4_file(), sha4_finish(), sha4_hmac_finish(), sha4_hmac_starts(), sha4_hmac_update(), and sha4_self_test().

7.117 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h File Reference

```
#include <time.h>
#include "xyssl/net.h"
#include "xyssl/dhm.h"
#include "xyssl/rsa.h"
#include "xyssl/md5.h"
#include "xyssl/sha1.h"
#include "xyssl/x509.h"
```

Data Structures

- struct `_ssl_session`
- struct `_ssl_context`

Defines

- #define `XYSSL_ERR_SSL_FEATURE_UNAVAILABLE` -0x1000
- #define `XYSSL_ERR_SSL_BAD_INPUT_DATA` -0x1800
- #define `XYSSL_ERR_SSL_INVALID_MAC` -0x2000
- #define `XYSSL_ERR_SSL_INVALID_RECORD` -0x2800
- #define `XYSSL_ERR_SSL_INVALID_MODULUS_SIZE` -0x3000
- #define `XYSSL_ERR_SSL_UNKNOWN_CIPHER` -0x3800
- #define `XYSSL_ERR_SSL_NO_CIPHER_CHOSEN` -0x4000
- #define `XYSSL_ERR_SSL_NO_SESSION_FOUND` -0x4800
- #define `XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE` -0x5000
- #define `XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE` -0x5800
- #define `XYSSL_ERR_SSL_CERTIFICATE_REQUIRED` -0x6000
- #define `XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED` -0x6800
- #define `XYSSL_ERR_SSL_CA_CHAIN_REQUIRED` -0x7000
- #define `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE` -0x7800
- #define `XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE` -0x8000
- #define `XYSSL_ERR_SSL_PEER_VERIFY_FAILED` -0x8800
- #define `XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY` -0x9000
- #define `XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO` -0x9800
- #define `XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO` -0xA000
- #define `XYSSL_ERR_SSL_BAD_HS_CERTIFICATE` -0xA800
- #define `XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_REQUEST` -0xB000
- #define `XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_EXCHANGE` -0xB800
- #define `XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO_DONE` -0xC000
- #define `XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_EXCHANGE` -0xC800
- #define `XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY` -0xD000
- #define `XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC` -0xD800
- #define `XYSSL_ERR_SSL_BAD_HS_FINISHED` -0xE000
- #define `SSL_MAJOR_VERSION_3` 3

- #define `SSL_MINOR_VERSION_0` 0
- #define `SSL_MINOR_VERSION_1` 1
- #define `SSL_MINOR_VERSION_2` 2
- #define `SSL_IS_CLIENT` 0
- #define `SSL_IS_SERVER` 1
- #define `SSL_COMPRESS_NULL` 0
- #define `SSL_VERIFY_NONE` 0
- #define `SSL_VERIFY_OPTIONAL` 1
- #define `SSL_VERIFY_REQUIRED` 2
- #define `SSL_MAX_CONTENT_LEN` 16384
- #define `SSL_BUFFER_LEN` (`SSL_MAX_CONTENT_LEN` + 512)
- #define `SSL_RSA_RC4_128_MD5` 4
- #define `SSL_RSA_RC4_128_SHA` 5
- #define `SSL_RSA_DES_168_SHA` 10
- #define `SSL_EDH_RSA_DES_168_SHA` 22
- #define `SSL_RSA_AES_128_SHA` 47
- #define `SSL_RSA_AES_256_SHA` 53
- #define `SSL_EDH_RSA_AES_256_SHA` 57
- #define `SSL_MSG_CHANGE_CIPHER_SPEC` 20
- #define `SSL_MSG_ALERT` 21
- #define `SSL_MSG_HANDSHAKE` 22
- #define `SSL_MSG_APPLICATION_DATA` 23
- #define `SSL_ALERT_CLOSE_NOTIFY` 0
- #define `SSL_ALERT_WARNING` 1
- #define `SSL_ALERT_FATAL` 2
- #define `SSL_ALERT_NO_CERTIFICATE` 41
- #define `SSL_HS_HELLO_REQUEST` 0
- #define `SSL_HS_CLIENT_HELLO` 1
- #define `SSL_HS_SERVER_HELLO` 2
- #define `SSL_HS_CERTIFICATE` 11
- #define `SSL_HS_SERVER_KEY_EXCHANGE` 12
- #define `SSL_HS_CERTIFICATE_REQUEST` 13
- #define `SSL_HS_SERVER_HELLO_DONE` 14
- #define `SSL_HS_CERTIFICATE_VERIFY` 15
- #define `SSL_HS_CLIENT_KEY_EXCHANGE` 16
- #define `SSL_HS_FINISHED` 20
- #define `TLS_EXT_SERVERNAME` 0
- #define `TLS_EXT_SERVERNAME_HOSTNAME` 0

Typedefs

- typedef struct `_ssl_session` `ssl_session`
- typedef struct `_ssl_context` `ssl_context`

Enumerations

- enum `ssl_states` {

 `SSL_HELLO_REQUEST, SSL_CLIENT_HELLO, SSL_SERVER_HELLO, SSL_SERVER_CERTIFICATE,`

 `SSL_SERVER_KEY_EXCHANGE, SSL_CERTIFICATE_REQUEST, SSL_SERVER_HELLO_DONE, SSL_CLIENT_CERTIFICATE,`

 `SSL_CLIENT_KEY_EXCHANGE, SSL_CERTIFICATE_VERIFY, SSL_CLIENT_CHANGE_CIPHER_SPEC, SSL_CLIENT_FINISHED,`

 `SSL_SERVER_CHANGE_CIPHER_SPEC, SSL_SERVER_FINISHED, SSL_FLUSH_BUFFERS, SSL_HANDSHAKE_OVER }`

Functions

- int `ssl_init (ssl_context *ssl)`

Initialize an SSL context.
- void `ssl_set_endpoint (ssl_context *ssl, int endpoint)`

Set the current endpoint type.
- void `ssl_set_authmode (ssl_context *ssl, int authmode)`

Set the certificate verification mode.
- void `ssl_set_rng (ssl_context *ssl, int(*f_rng)(void *), void *p_rng)`

Set the random number generator callback.
- void `ssl_set_dbg (ssl_context *ssl, void(*f_dbg)(void *, int, char *), void *p_dbg)`

Set the debug callback.
- void `ssl_set_bio (ssl_context *ssl, int(*f_recv)(void *, unsigned char *, int), void *p_recv, int(*f_send)(void *, unsigned char *, int), void *p_send)`

Set the underlying BIO read and write callbacks.
- void `ssl_set_scb (ssl_context *ssl, int(*s_get)(ssl_context *), int(*s_set)(ssl_context *))`

Set the session callbacks (server-side only).
- void `ssl_set_session (ssl_context *ssl, int resume, int timeout, ssl_session *session)`

Set the session resuming flag, timeout and data.
- void `ssl_set_ciphers (ssl_context *ssl, int *ciphers)`

Set the list of allowed ciphersuites.
- void `ssl_set_ca_chain (ssl_context *ssl, x509_cert *ca_chain, char *peer_cn)`

Set the data required to verify peer certificate.
- void `ssl_set_own_cert (ssl_context *ssl, x509_cert *own_cert, rsa_context *rsa_key)`

Set own certificate and private key.
- int `ssl_set_dh_param (ssl_context *ssl, char *dhm_P, char *dhm_G)`

Set the Diffie-Hellman public P and G values, read as hexadecimal strings (server-side only).

- int `ssl_set_hostname (ssl_context *ssl, char *hostname)`

Set hostname for ServerName TLS Extension.

- int `ssl_get_bytes_avail (ssl_context *ssl)`

Return the number of data bytes available to read.

- int `ssl_get_verify_result (ssl_context *ssl)`

Return the result of the certificate verification.

- char * `ssl_get_cipher (ssl_context *ssl)`

Return the name of the current cipher.

- int `ssl_handshake (ssl_context *ssl)`

Perform the SSL handshake.

- int `ssl_read (ssl_context *ssl, unsigned char *buf, int len)`

Read at most 'len' application data bytes.

- int `ssl_write (ssl_context *ssl, unsigned char *buf, int len)`

Write exactly 'len' application data bytes.

- int `ssl_close_notify (ssl_context *ssl)`

Notify the peer that the connection is being closed.

- void `ssl_free (ssl_context *ssl)`

Free an SSL context.

- int `ssl_handshake_client (ssl_context *ssl)`

- int `ssl_handshake_server (ssl_context *ssl)`

- int `ssl_derive_keys (ssl_context *ssl)`

- void `ssl_calc_verify (ssl_context *ssl, unsigned char hash[36])`

- int `ssl_read_record (ssl_context *ssl)`

- int `ssl_fetch_input (ssl_context *ssl, int nb_want)`

- int `ssl_write_record (ssl_context *ssl)`

- int `ssl_flush_output (ssl_context *ssl)`

- int `ssl_parse_certificate (ssl_context *ssl)`

- int `ssl_write_certificate (ssl_context *ssl)`

- int `ssl_parse_change_cipher_spec (ssl_context *ssl)`

- int `ssl_write_change_cipher_spec (ssl_context *ssl)`

- int `ssl_parse_finished (ssl_context *ssl)`

- int `ssl_write_finished (ssl_context *ssl)`

Variables

- int `ssl_default_ciphers []`

7.117.1 Detailed Description

Definition in file [ssl.h](#).

7.117.2 Define Documentation

7.117.2.1 **#define SSL_ALERT_CLOSE_NOTIFY 0**

Definition at line 87 of file [ssl.h](#).

Referenced by [ssl_close_notify\(\)](#), and [ssl_read_record\(\)](#).

7.117.2.2 **#define SSL_ALERT_FATAL 2**

Definition at line 89 of file [ssl.h](#).

Referenced by [ssl_read_record\(\)](#).

7.117.2.3 **#define SSL_ALERT_NO_CERTIFICATE 41**

Definition at line 90 of file [ssl.h](#).

Referenced by [ssl_parse_certificate\(\)](#), and [ssl_write_certificate\(\)](#).

7.117.2.4 **#define SSL_ALERT_WARNING 1**

Definition at line 88 of file [ssl.h](#).

Referenced by [ssl_close_notify\(\)](#), [ssl_parse_certificate\(\)](#), [ssl_read_record\(\)](#), and [ssl_write_certificate\(\)](#).

7.117.2.5 **#define SSL_BUFFER_LEN (SSL_MAX_CONTENT_LEN + 512)**

Definition at line 66 of file [ssl.h](#).

Referenced by [ssl_free\(\)](#), and [ssl_init\(\)](#).

7.117.2.6 **#define SSL_COMPRESS_NULL 0**

Definition at line 54 of file [ssl.h](#).

Referenced by [ssl_parse_server_hello\(\)](#), [ssl_write_client_hello\(\)](#), and [ssl_write_server_hello\(\)](#).

7.117.2.7 **#define SSL_EDH_RSA_AES_256_SHA 57**

Definition at line 77 of file [ssl.h](#).

Referenced by [main\(\)](#), [ssl_derive_keys\(\)](#), [ssl_get_cipher\(\)](#), [ssl_parse_client_key_exchange\(\)](#), [ssl_parse_server_key_exchange\(\)](#), [ssl_write_client_key_exchange\(\)](#), and [ssl_write_server_key_exchange\(\)](#).

7.117.2.8 #define SSL_EDH_RSA_DES_168_SHA 22

Definition at line 74 of file ssl.h.

Referenced by main(), ssl_derive_keys(), ssl_get_cipher(), ssl_parse_client_key_exchange(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

7.117.2.9 #define SSL_HS_CERTIFICATE 11

Definition at line 95 of file ssl.h.

Referenced by ssl_parse_certificate(), and ssl_write_certificate().

7.117.2.10 #define SSL_HS_CERTIFICATE_REQUEST 13

Definition at line 97 of file ssl.h.

Referenced by ssl_parse_certificate_request(), and ssl_write_certificate_request().

7.117.2.11 #define SSL_HS_CERTIFICATE_VERIFY 15

Definition at line 99 of file ssl.h.

Referenced by ssl_parse_certificate_verify(), and ssl_write_certificate_verify().

7.117.2.12 #define SSL_HS_CLIENT_HELLO 1

Definition at line 93 of file ssl.h.

Referenced by ssl_parse_client_hello(), and ssl_write_client_hello().

7.117.2.13 #define SSL_HS_CLIENT_KEY_EXCHANGE 16

Definition at line 100 of file ssl.h.

Referenced by ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

7.117.2.14 #define SSL_HS_FINISHED 20

Definition at line 101 of file ssl.h.

Referenced by ssl_parse_finished(), and ssl_write_finished().

7.117.2.15 #define SSL_HS_HELLO_REQUEST 0

Definition at line 92 of file ssl.h.

7.117.2.16 #define SSL_HS_SERVER_HELLO 2

Definition at line 94 of file ssl.h.

Referenced by ssl_parse_server_hello(), and ssl_write_server_hello().

7.117.2.17 #define SSL_HS_SERVER_HELLO_DONE 14

Definition at line 98 of file ssl.h.

Referenced by ssl_parse_server_hello_done(), and ssl_write_server_hello_done().

7.117.2.18 #define SSL_HS_SERVER_KEY_EXCHANGE 12

Definition at line 96 of file ssl.h.

Referenced by ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

7.117.2.19 #define SSL_IS_CLIENT 0

Definition at line 52 of file ssl.h.

Referenced by main(), ssl_calc_finished(), ssl_derive_keys(), ssl_handshake(), ssl_parse_finished(), ssl_test(), ssl_write_certificate(), and ssl_write_finished().

7.117.2.20 #define SSL_IS_SERVER 1

Definition at line 53 of file ssl.h.

Referenced by main(), ssl_handshake(), ssl_parse_certificate(), ssl_parse_finished(), and ssl_test().

7.117.2.21 #define SSL_MAJOR_VERSION_3 3

Definition at line 47 of file ssl.h.

Referenced by ssl_parse_client_hello(), ssl_parse_server_hello(), and ssl_write_client_hello().

7.117.2.22 #define SSL_MAX_CONTENT_LEN 16384

Definition at line 60 of file ssl.h.

Referenced by ssl_read_record(), ssl_write(), and ssl_write_certificate().

7.117.2.23 #define SSL_MINOR_VERSION_0 0

SSL v3.0

Definition at line 48 of file ssl.h.

Referenced by ssl_calc_finished(), ssl_calc_verify(), ssl_decrypt_buf(), ssl_derive_keys(), ssl_encrypt_buf(), ssl_parse_certificate(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_read_record(), ssl_write_certificate(), ssl_write_client_hello(), ssl_write_client_key_exchange(), and ssl_write_finished().

7.117.2.24 #define SSL_MINOR_VERSION_1 1

TLS v1.0

Definition at line 49 of file ssl.h.

Referenced by ssl_parse_client_hello(), ssl_parse_server_hello(), ssl_read_record(), and ssl_write_client_hello().

7.117.2.25 #define SSL_MINOR_VERSION_2 2

TLS v1.1

Definition at line 50 of file ssl.h.

7.117.2.26 #define SSL_MSG_ALERT 21

Definition at line 83 of file ssl.h.

Referenced by ssl_close_notify(), ssl_parse_certificate(), ssl_read_record(), and ssl_write_certificate().

7.117.2.27 #define SSL_MSG_APPLICATION_DATA 23

Definition at line 85 of file ssl.h.

Referenced by ssl_read(), and ssl_write().

7.117.2.28 #define SSL_MSG_CHANGE_CIPHER_SPEC 20

Definition at line 82 of file ssl.h.

Referenced by ssl_parse_change_cipher_spec(), and ssl_write_change_cipher_spec().

7.117.2.29 #define SSL_MSG_HANDSHAKE 22

Definition at line 84 of file ssl.h.

Referenced by ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_certificate_verify(), ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), ssl_read_record(), ssl_write_certificate(), ssl_write_certificate_request(), ssl_write_certificate_verify(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), ssl_write_record(), ssl_write_server_hello(), ssl_write_server_hello_done(), and ssl_write_server_key_exchange().

7.117.2.30 #define SSL_RSA_AES_128_SHA 47

Definition at line 75 of file ssl.h.

Referenced by main(), ssl_derive_keys(), and ssl_get_cipher().

7.117.2.31 #define SSL_RSA_AES_256_SHA 53

Definition at line 76 of file ssl.h.

Referenced by main(), ssl_derive_keys(), and ssl_get_cipher().

7.117.2.32 #define SSL_RSA_DES_168_SHA 10

Definition at line 73 of file ssl.h.

Referenced by main(), ssl_derive_keys(), and ssl_get_cipher().

7.117.2.33 #define SSL_RSA_RC4_128_MD5 4

Definition at line 71 of file ssl.h.

Referenced by main(), ssl_derive_keys(), and ssl_get_cipher().

7.117.2.34 #define SSL_RSA_RC4_128_SHA 5

Definition at line 72 of file ssl.h.

Referenced by main(), ssl_derive_keys(), and ssl_get_cipher().

7.117.2.35 #define SSL_VERIFY_NONE 0

Definition at line 56 of file ssl.h.

Referenced by main(), ssl_parse_certificate(), ssl_test(), and ssl_write_certificate_request().

7.117.2.36 #define SSL_VERIFY_OPTIONAL 1

Definition at line 57 of file ssl.h.

Referenced by main(), and ssl_parse_certificate().

7.117.2.37 #define SSL_VERIFY_REQUIRED 2

Definition at line 58 of file ssl.h.

Referenced by ssl_parse_certificate().

7.117.2.38 #define TLS_EXT_SERVERNAME 0

Definition at line 106 of file ssl.h.

Referenced by ssl_write_client_hello().

7.117.2.39 #define TLS_EXT_SERVERNAME_HOSTNAME 0

Definition at line 107 of file ssl.h.

Referenced by ssl_write_client_hello().

7.117.2.40 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE -0xA800

Definition at line 35 of file ssl.h.

Referenced by ssl_parse_certificate().

7.117.2.41 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_REQUEST -0xB000

Definition at line 36 of file ssl.h.

7.117.2.42 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY -0xD000

Definition at line 40 of file ssl.h.

Referenced by ssl_parse_certificate_verify().

7.117.2.43 #define XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC -0xD800

Definition at line 41 of file ssl.h.

Referenced by ssl_parse_change_cipher_spec().

7.117.2.44 #define XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO -0x9800

Definition at line 33 of file ssl.h.

Referenced by ssl_parse_client_hello().

7.117.2.45 #define XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_EXCHANGE -0xC800

Definition at line 39 of file ssl.h.

Referenced by ssl_parse_client_key_exchange().

7.117.2.46 #define XYSSL_ERR_SSL_BAD_HS_FINISHED -0xE000

Definition at line 42 of file ssl.h.

Referenced by ssl_parse_finished().

7.117.2.47 #define XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO -0xA000

Definition at line 34 of file ssl.h.

Referenced by ssl_parse_server_hello().

7.117.2.48 #define XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO_DONE -0xC000

Definition at line 38 of file ssl.h.

Referenced by ssl_parse_server_hello_done().

7.117.2.49 #define XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_EXCHANGE -0xB800

Definition at line 37 of file ssl.h.

Referenced by ssl_parse_server_key_exchange().

7.117.2.50 #define XYSSL_ERR_SSL_BAD_INPUT_DATA -0x1800

Definition at line 17 of file ssl.h.

Referenced by ssl_handshake_client(), ssl_handshake_server(), ssl_set_hostname(), and tls1_prf().

7.117.2.51 #define XYSSL_ERR_SSL_CA_CHAIN_REQUIRED -0x7000

Definition at line 28 of file ssl.h.

Referenced by ssl_parse_certificate().

7.117.2.52 #define XYSSL_ERR_SSL_CERTIFICATE_REQUIRED -0x6000

Definition at line 26 of file ssl.h.

Referenced by ssl_write_certificate().

7.117.2.53 #define XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE -0x5800

Definition at line 25 of file ssl.h.

Referenced by ssl_write_certificate().

7.117.2.54 #define XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE -0x8000

Definition at line 30 of file ssl.h.

Referenced by ssl_read_record().

7.117.2.55 #define XYSSL_ERR_SSL_FEATURE_UNAVAILABLE -0x1000

Definition at line 16 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_derive_keys(), ssl_encrypt_buf(), ssl_handshake(), ssl_parse_client_key_exchange(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

7.117.2.56 #define XYSSL_ERR_SSL_INVALID_MAC -0x2000

Definition at line 18 of file ssl.h.

Referenced by ssl_decrypt_buf().

7.117.2.57 #define XYSSL_ERR_SSL_INVALID_MODULUS_SIZE -0x3000

Definition at line 20 of file ssl.h.

7.117.2.58 #define XYSSL_ERR_SSL_INVALID_RECORD -0x2800

Definition at line 19 of file ssl.h.

Referenced by ssl_read_record().

7.117.2.59 #define XYSSL_ERR_SSL_NO_CIPHER_CHOSEN -0x4000

Definition at line 22 of file ssl.h.

Referenced by ssl_parse_client_hello().

7.117.2.60 #define XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE -0x5000

Definition at line 24 of file ssl.h.

Referenced by ssl_parse_certificate().

7.117.2.61 #define XYSSL_ERR_SSL_NO_SESSION_FOUND -0x4800

Definition at line 23 of file ssl.h.

7.117.2.62 #define XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY -0x9000

Definition at line 32 of file ssl.h.

Referenced by main(), ssl_read_record(), and ssl_test().

7.117.2.63 #define XYSSL_ERR_SSL_PEER_VERIFY_FAILED -0x8800

Definition at line 31 of file ssl.h.

7.117.2.64 #define XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED -0x6800

Definition at line 27 of file ssl.h.

Referenced by ssl_write_certificate_verify().

7.117.2.65 #define XYSSL_ERR_SSL_UNEXPECTED_MESSAGE -0x7800

Definition at line 29 of file ssl.h.

Referenced by ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_change_cipher_spec(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), and ssl_read().

7.117.2.66 #define XYSSL_ERR_SSL_UNKNOWN_CIPHER -0x3800

Definition at line 21 of file ssl.h.

7.117.3 Typedef Documentation

7.117.3.1 `typedef struct _ssl_context ssl_context`

Definition at line 134 of file ssl.h.

7.117.3.2 `typedef struct _ssl_session ssl_session`

Definition at line 133 of file ssl.h.

7.117.4 Enumeration Type Documentation

7.117.4.1 `enum ssl_states`

Enumerator:

```
SSL_HELLO_REQUEST  
SSL_CLIENT_HELLO  
SSL_SERVER_HELLO  
SSL_SERVER_CERTIFICATE  
SSL_SERVER_KEY_EXCHANGE  
SSL_CERTIFICATE_REQUEST  
SSL_SERVER_HELLO_DONE  
SSL_CLIENT_CERTIFICATE  
SSL_CLIENT_KEY_EXCHANGE  
SSL_CERTIFICATE_VERIFY  
SSL_CLIENT_CHANGE_CIPHER_SPEC  
SSL_CLIENT_FINISHED  
SSL_SERVER_CHANGE_CIPHER_SPEC  
SSL_SERVER_FINISHED  
SSL_FLUSH_BUFFERS  
SSL_HANDSHAKE_OVER
```

Definition at line 112 of file ssl.h.

7.117.5 Function Documentation

7.117.5.1 `void ssl_calc_verify (ssl_context * ssl, unsigned char hash[36])`

Definition at line 335 of file ssl_tls.c.

References `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_session::master`, `md5()`, `md5_finish()`, `md5_starts()`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::session`, `sha1()`, `sha1_finish()`, `sha1_starts()`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, and `SSL_MINOR_VERSION_0`.

Referenced by `ssl_parse_certificate_verify()`, and `ssl_write_certificate_verify()`.

7.117.5.2 int ssl_close_notify (ssl_context * ssl)

Notify the peer that the connection is being closed.

Definition at line 1904 of file ssl_tls.c.

References _ssl_context::out_msg, _ssl_context::out_msrlen, _ssl_context::out_msgtype, SSL_ALERT_CLOSE_NOTIFY, SSL_ALERT_WARNING, SSL_DEBUG_MSG, SSL_DEBUG_RET, ssl_flush_output(), SSL_HANDSHAKE_OVER, SSL_MSG_ALERT, ssl_write_record(), and _ssl_context::state.

Referenced by main(), and ssl_test().

7.117.5.3 int ssl_derive_keys (ssl_context * ssl)

Definition at line 106 of file ssl_tls.c.

References aes_setkey_dec(), aes_setkey_enc(), arc4_setup(), _ssl_session::cipher, _ssl_context::ctx_dec, _ssl_context::ctx_enc, des3_set3key_dec(), des3_set3key_enc(), _ssl_context::endpoint, _ssl_context::iv_dec, _ssl_context::iv_enc, _ssl_context::ivlen, _ssl_context::keylen, _ssl_context::mac_dec, _ssl_context::mac_enc, _ssl_context::maclen, _ssl_session::master, md5(), md5_finish(), md5_starts(), md5_update(), _ssl_context::minlen, _ssl_context::minor_ver, _ssl_context::pmslen, _ssl_context::premaster, _ssl_context::randbytes, _ssl_context::resume, _ssl_context::session, sha1(), sha1_finish(), sha1_starts(), sha1_update(), SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA_DES_168_SHA, ssl_get_cipher(), SSL_IS_CLIENT, SSL_MINOR_VERSION_0, SSL_RSA_AES_128_SHA, SSL_RSA_AES_256_SHA, SSL_RSA DES_168_SHA, SSL_RSA_RC4_128_MD5, SSL_RSA_RC4_128_SHA, tls1_prf(), and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_parse_client_key_exchange(), ssl_parse_server_hello(), ssl_write_client_key_exchange(), and ssl_write_server_hello().

7.117.5.4 int ssl_fetch_input (ssl_context * ssl, int nb_want)

Definition at line 727 of file ssl_tls.c.

References _ssl_context::f_recv, _ssl_context::in_hdr, _ssl_context::in_left, _ssl_context::p_recv, SSL_DEBUG_MSG, and SSL_DEBUG_RET.

Referenced by ssl_parse_client_hello(), and ssl_read_record().

7.117.5.5 int ssl_flush_output (ssl_context * ssl)

Definition at line 756 of file ssl_tls.c.

References buf, _ssl_context::f_send, _ssl_context::out_hdr, _ssl_context::out_left, _ssl_context::out_msrlen, _ssl_context::p_send, SSL_DEBUG_MSG, and SSL_DEBUG_RET.

Referenced by ssl_close_notify(), ssl_handshake_client(), ssl_handshake_server(), ssl_write(), and ssl_write_record().

7.117.5.6 void ssl_free (ssl_context * ssl)

Free an SSL context.

Definition at line 1938 of file ssl_tls.c.

References `_ssl_context::dhm_ctx`, `dhm_free()`, `_ssl_context::hostname`, `_ssl_context::hostname_len`, `_ssl_context::in_ctr`, `_ssl_context::out_ctr`, `_ssl_context::peer_cert`, `SSL_BUFFER_LEN`, `SSL_DEBUG_MSG`, and `x509_free()`.

Referenced by `main()`, and `ssl_test()`.

7.117.5.7 int ssl_get_bytes_avail (ssl_context * *ssl*)

Return the number of data bytes available to read.

Parameters

ssl SSL context

Returns

how many bytes are available in the read buffer

Definition at line 1691 of file `ssl_tls.c`.

References `_ssl_context::in_msflen`, and `_ssl_context::in_offt`.

7.117.5.8 char* ssl_get_cipher (ssl_context * *ssl*)

Return the name of the current cipher.

Parameters

ssl SSL context

Returns

a string containing the cipher name

Definition at line 1701 of file `ssl_tls.c`.

References `_ssl_session::cipher`, `_ssl_context::session`, `SSL_EDH_RSA_AES_256_SHA`, `SSL_EDH_RSA_DES_168_SHA`, `SSL_RSA_AES_128_SHA`, `SSL_RSA_AES_256_SHA`, `SSL_RSA_DES_168_SHA`, `SSL_RSA_RC4_128_MD5`, and `SSL_RSA_RC4_128_SHA`.

Referenced by `main()`, and `ssl_derive_keys()`.

7.117.5.9 int ssl_get_verify_result (ssl_context * *ssl*)

Return the result of the certificate verification.

Parameters

ssl SSL context

Returns

0 if successful, or a combination of: `BADCERT_EXPIRED` `BADCERT_REVOKED` `BADCERT_CN_MISMATCH` `BADCERT_NOT_TRUSTED`

Definition at line 1696 of file `ssl_tls.c`.

References `_ssl_context::verify_result`.

Referenced by `main()`.

7.117.5.10 int ssl_handshake (ssl_context * ssl)

Perform the SSL handshake.

Parameters

ssl SSL context

Returns

0 if successful, XYSSL_ERR_NET_TRY AGAIN, or a specific SSL error code.

Definition at line 1767 of file ssl_tls.c.

References _ssl_context::endpoint, SSL_DEBUG_MSG, ssl_handshake_client(), ssl_handshake_server(), SSL_IS_CLIENT, SSL_IS_SERVER, and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by main(), ssl_read(), and ssl_write().

7.117.5.11 int ssl_handshake_client (ssl_context * ssl)

Definition at line 660 of file ssl_cli.c.

References SSL_CERTIFICATE_REQUEST, SSL_CERTIFICATE_VERIFY, SSL_CLIENT_CERTIFICATE, SSL_CLIENT_CHANGE_CIPHER_SPEC, SSL_CLIENT_FINISHED, SSL_CLIENT_HELLO, SSL_CLIENT_KEY_EXCHANGE, SSL_DEBUG_MSG, SSL_FLUSH_BUFFERS, ssl_flush_output(), SSL_HANDSHAKE_OVER, SSL_HELLO_REQUEST, ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_change_cipher_spec(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), SSL_SERVER_CERTIFICATE, SSL_SERVER_CHANGE_CIPHER_SPEC, SSL_SERVER_FINISHED, SSL_SERVER_HELLO, SSL_SERVER_HELLO_DONE, SSL_SERVER_KEY_EXCHANGE, ssl_write_certificate(), ssl_write_certificate_verify(), ssl_write_change_cipher_spec(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), _ssl_context::state, and XYSSL_ERR_SSL_BAD_INPUT_DATA.

Referenced by ssl_handshake().

7.117.5.12 int ssl_handshake_server (ssl_context * ssl)

Definition at line 819 of file ssl_srv.c.

References SSL_CERTIFICATE_REQUEST, SSL_CERTIFICATE_VERIFY, SSL_CLIENT_CERTIFICATE, SSL_CLIENT_CHANGE_CIPHER_SPEC, SSL_CLIENT_FINISHED, SSL_CLIENT_HELLO, SSL_CLIENT_KEY_EXCHANGE, SSL_DEBUG_MSG, SSL_FLUSH_BUFFERS, ssl_flush_output(), SSL_HANDSHAKE_OVER, SSL_HELLO_REQUEST, ssl_parse_certificate(), ssl_parse_certificate_verify(), ssl_parse_change_cipher_spec(), ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_parse_finished(), SSL_SERVER_CERTIFICATE, SSL_SERVER_CHANGE_CIPHER_SPEC, SSL_SERVER_FINISHED, SSL_SERVER_HELLO, SSL_SERVER_HELLO_DONE, SSL_SERVER_KEY_EXCHANGE, ssl_write_certificate(), ssl_write_certificate_request(), ssl_write_change_cipher_spec(), ssl_write_finished(), ssl_write_server_hello(), ssl_write_server_hello_done(), ssl_write_server_key_exchange(), _ssl_context::state, and XYSSL_ERR_SSL_BAD_INPUT_DATA.

Referenced by ssl_handshake().

7.117.5.13 int ssl_init (ssl_context * ssl)

Initialize an SSL context.

Parameters

ssl SSL context

Returns

0 if successful, or 1 if memory allocation failed

Definition at line 1542 of file ssl_tls.c.

References *_ssl_context::fin_md5*, *_ssl_context::fin_sha1*, *_ssl_context::hostname*, *_ssl_context::hostname_len*, *_ssl_context::in_ctr*, *_ssl_context::in_hdr*, *_ssl_context::in_msg*, *md5_starts()*, *_ssl_context::out_ctr*, *_ssl_context::out_hdr*, *_ssl_context::out_msg*, *sha1_starts()*, *SSL_BUFFER_LEN*, and *SSL_DEBUG_MSG*.

Referenced by *main()*, and *ssl_test()*.

7.117.5.14 int ssl_parse_certificate (ssl_context * *ssl*)

Definition at line 1140 of file ssl_tls.c.

References *_ssl_context::authmode*, *_ssl_context::ca_chain*, *_ssl_context::endpoint*, *_ssl_context::in_hflen*, *_ssl_context::in_msg*, *_ssl_context::in_msflen*, *_ssl_context::in_msctype*, *_ssl_context::minor_ver*, *_ssl_context::peer_cert*, *_ssl_context::peer_cn*, *SSL_ALERT_NO_CERTIFICATE*, *SSL_ALERT_WARNING*, *SSL_DEBUG_CRT*, *SSL_DEBUG_MSG*, *SSL_DEBUG_RET*, *SSL_HS_CERTIFICATE*, *SSL_IS_SERVER*, *SSL_MINOR_VERSION_0*, *SSL_MSG_ALERT*, *SSL_MSG_HANDSHAKE*, *ssl_read_record()*, *SSL_VERIFY_NONE*, *SSL_VERIFY_OPTIONAL*, *SSL_VERIFY_REQUIRED*, *_ssl_context::state*, *_ssl_context::verify_result*, *x509parse_crt()*, *x509parse_verify()*, *XYSSL_ERR_SSL_BAD_HS_CERTIFICATE*, *XYSSL_ERR_SSL_CA_CHAIN_REQUIRED*, *XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE*, and *XYSSL_ERR_SSL_UNEXPECTED_MESSAGE*.

Referenced by *ssl_handshake_client()*, and *ssl_handshake_server()*.

7.117.5.15 int ssl_parse_change_cipher_spec (ssl_context * *ssl*)

Definition at line 1311 of file ssl_tls.c.

References *_ssl_context::do_crypt*, *_ssl_context::in_msg*, *_ssl_context::in_msflen*, *_ssl_context::in_msctype*, *SSL_DEBUG_MSG*, *SSL_DEBUG_RET*, *SSL_MSG_CHANGE_CIPHER_SPEC*, *ssl_read_record()*, *_ssl_context::state*, *XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC*, and *XYSSL_ERR_SSL_UNEXPECTED_MESSAGE*.

Referenced by *ssl_handshake_client()*, and *ssl_handshake_server()*.

7.117.5.16 int ssl_parse_finished (ssl_context * *ssl*)

Definition at line 1480 of file ssl_tls.c.

References *buf*, *_ssl_context::do_crypt*, *_ssl_context::endpoint*, *_ssl_context::fin_md5*, *_ssl_context::fin_sha1*, *_ssl_context::in_hflen*, *_ssl_context::in_msg*, *_ssl_context::in_msctype*, *md5()*, *_ssl_context::minor_ver*, *_ssl_context::resume*, *sha1()*, *ssl_calc_finished()*, *SSL_CLIENT_CHANGE_CIPHER_SPEC*, *SSL_DEBUG_MSG*, *SSL_DEBUG_RET*, *SSL_HANDSHAKE_OVER*, *SSL_HS_FINISHED*, *SSL_IS_CLIENT*, *SSL_IS_SERVER*, *SSL_MINOR_VERSION_0*, *SSL_MSG_HANDSHAKE*, *ssl_read_record()*, *_ssl_context::state*, *XYSSL_ERR_SSL_BAD_HS_FINISHED*, and *XYSSL_ERR_SSL_UNEXPECTED_MESSAGE*.

Referenced by *ssl_handshake_client()*, and *ssl_handshake_server()*.

7.117.5.17 int ssl_read (ssl_context * *ssl*, unsigned char * *buf*, int *len*)

Read at most '*len*' application data bytes.

Parameters

ssl SSL context

buf buffer that will hold the data

len how many bytes must be read

Returns

This function returns the number of bytes read, or a negative error code.

Definition at line 1791 of file ssl_tls.c.

References _ssl_context::in_msg, _ssl_context::in_msrlen, _ssl_context::in_msatype, _ssl_context::in_offset, SSL_DEBUG_MSG, SSL_DEBUG_RET, ssl_handshake(), SSL_HANDSHAKE_OVER, SSL_MSG_APPLICATION_DATA, ssl_read_record(), _ssl_context::state, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by main(), and ssl_test().

7.117.5.18 int ssl_read_record (ssl_context * *ssl*)

Definition at line 842 of file ssl_tls.c.

References _ssl_context::do_crypt, _ssl_context::fin_md5, _ssl_context::fin_sha1, _ssl_context::in_header, _ssl_context::in_hrlen, _ssl_context::in_left, _ssl_context::in_msg, _ssl_context::in_msrlen, _ssl_context::in_msatype, _ssl_context::major_ver, md5_update(), _ssl_context::minlen, _ssl_context::minor_ver, sha1_update(), SSL_ALERT_CLOSE_NOTIFY, SSL_ALERT_FATAL, SSL_ALERT_WARNING, SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_DEBUG_RET, ssl_decrypt_buf(), ssl_fetch_input(), SSL_MAX_CONTENT_LEN, SSL_MINOR_VERSION_0, SSL_MINOR_VERSION_1, SSL_MSG_ALERT, SSL_MSG_HANDSHAKE, XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE, XYSSL_ERR_SSL_INVALID_RECORD, and XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY.

Referenced by ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_certificate_verify(), ssl_parse_change_cipher_spec(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), and ssl_read().

7.117.5.19 void ssl_set_authmode (ssl_context * *ssl*, int *authmode*)

Set the certificate verification mode.

Parameters

ssl SSL context

mode can be:

SSL_VERIFY_NONE: peer certificate is not checked (default), this is insecure and SHOULD be avoided.

SSL_VERIFY_OPTIONAL: peer certificate is checked, however the handshake continues even if verification failed; [ssl_get_verify_result\(\)](#) can be called after the handshake is complete.

SSL_VERIFY_REQUIRED: peer *must* present a valid certificate, handshake is aborted if verification failed.

Definition at line 1589 of file ssl_tls.c.

References _ssl_context::authmode.

Referenced by main(), and ssl_test().

7.117.5.20 void ssl_set_bio (ssl_context * *ssl*, int(*)(void *, unsigned char *, int) *f_recv*, void * *p_recv*, int(*)(void *, unsigned char *, int) *f_send*, void * *p_send*)

Set the underlying BIO read and write callbacks.

Parameters

ssl SSL context

f_recv read callback

p_recv read parameter

f_send write callback

p_send write parameter

Definition at line 1610 of file ssl_tls.c.

References _ssl_context::f_recv, _ssl_context::f_send, _ssl_context::p_recv, and _ssl_context::p_send.

Referenced by main(), and ssl_test().

7.117.5.21 void ssl_set_ca_chain (ssl_context * *ssl*, x509_cert * *ca_chain*, char * *peer_cn*)

Set the data required to verify peer certificate.

Parameters

ssl SSL context

ca_chain trusted CA chain

peer_cn expected peer CommonName (or NULL)

Note

TODO: add two more parameters: depth and crl

Definition at line 1641 of file ssl_tls.c.

References _ssl_context::ca_chain, and _ssl_context::peer_cn.

Referenced by main(), and ssl_test().

7.117.5.22 void ssl_set_ciphers (ssl_context * *ssl*, int * *ciphers*)

Set the list of allowed ciphersuites.

Parameters

ssl SSL context

ciphers 0-terminated list of allowed ciphers

Definition at line 1636 of file ssl_tls.c.

References _ssl_context::ciphers.

Referenced by main(), and ssl_test().

7.117.5.23 void ssl_set_dbg (ssl_context * *ssl*, void(*)(void *, int, char *) *f_dbg*, void * *p_dbg*)

Set the debug callback.

Parameters

ssl SSL context

f_dbg debug function

p_dbg debug parameter

Definition at line 1602 of file ssl_tls.c.

References _ssl_context::f_dbg, and _ssl_context::p_dbg.

Referenced by main(), and ssl_test().

7.117.5.24 int ssl_set_dh_param (ssl_context * *ssl*, char * *dhm_P*, char * *dhm_G*)

Set the Diffie-Hellman public P and G values, read as hexadecimal strings (server-side only).

Parameters

ssl SSL context

dhm_P Diffie-Hellman-Merkle modulus

dhm_G Diffie-Hellman-Merkle generator

Returns

0 if successful

Definition at line 1655 of file ssl_tls.c.

References _ssl_context::dhm_ctx, dhm_context::G, mpi_read_string(), dhm_context::P, and SSL_DEBUG_RET.

Referenced by main(), and ssl_test().

7.117.5.25 void ssl_set_endpoint (ssl_context * *ssl*, int *endpoint*)

Set the current endpoint type.

Parameters

ssl SSL context

endpoint must be SSL_IS_CLIENT or SSL_IS_SERVER

Definition at line 1584 of file ssl_tls.c.

References _ssl_context::endpoint.

Referenced by main(), and ssl_test().

7.117.5.26 int ssl_set_hostname (ssl_context * *ssl*, char * *hostname*)

Set hostname for ServerName TLS Extension.

Parameters

ssl SSL context

hostname the server hostname

Returns

0 if successful

Definition at line 1674 of file ssl_tls.c.

References _ssl_context::hostname, _ssl_context::hostname_len, and XYSSL_ERR_SSL_BAD_INPUT_DATA.

Referenced by main().

7.117.5.27 void ssl_set_own_cert (ssl_context * *ssl*, x509_cert * *own_cert*, rsa_context * *rsa_key*)

Set own certificate and private key.

Parameters

ssl SSL context

own_cert own public certificate

rsa_key own private RSA key

Definition at line 1648 of file ssl_tls.c.

References _ssl_context::own_cert, and _ssl_context::rsa_key.

Referenced by main(), and ssl_test().

7.117.5.28 void ssl_set_rng (ssl_context * *ssl*, int(*)(void *) *f_rng*, void * *p_rng*)

Set the random number generator callback.

Parameters

ssl SSL context

f_rng RNG function

p_rng RNG parameter

Definition at line 1594 of file ssl_tls.c.

References _ssl_context::f_rng, and _ssl_context::p_rng.

Referenced by main(), and ssl_test().

7.117.5.29 void ssl_set_scb (ssl_context * *ssl*, int(*)(ssl_context *) *s_get*, int(*)(ssl_context *) *s_set*)

Set the session callbacks (server-side only).

Parameters

ssl SSL context
s_get session get callback
s_set session set callback

Definition at line 1620 of file ssl_tls.c.

References _ssl_context::s_get, and _ssl_context::s_set.

Referenced by main().

7.117.5.30 void ssl_set_session (ssl_context * *ssl*, int *resume*, int *timeout*, ssl_session * *session*)

Set the session resuming flag, timeout and data.

Parameters

ssl SSL context
resume if 0 (default), the session will not be resumed
timeout session timeout in seconds, or 0 (no timeout)
session session context

Definition at line 1628 of file ssl_tls.c.

References _ssl_context::resume, _ssl_context::session, and _ssl_context::timeout.

Referenced by main(), and ssl_test().

7.117.5.31 int ssl_write (ssl_context * *ssl*, unsigned char * *buf*, int *len*)

Write exactly 'len' application data bytes.

Parameters

ssl SSL context
buf buffer holding the data
len how many bytes must be written

Returns

This function returns the number of bytes written, or a negative error code.

Note

When this function returns XYSSL_ERR_NET_TRY AGAIN, it must be called later with the *same* arguments, until it returns a positive value.

Definition at line 1857 of file ssl_tls.c.

References `_ssl_context::out_left`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_flush_output()`, `ssl_handshake()`, `SSL_HANDSHAKE_OVER`, `SSL_MAX_CONTENT_LEN`, `SSL_MSG_APPLICATION_DATA`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `main()`, and `ssl_test()`.

7.117.5.32 int ssl_write_certificate (ssl_context * *ssl*)

Definition at line 1044 of file ssl_tls.c.

References `_ssl_context::client_auth`, `_ssl_context::endpoint`, `_x509_buf::len`, `_ssl_context::minor_ver`, `_x509_cert::next`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `_ssl_context::own_cert`, `_x509_buf::p`, `_x509_cert::raw`, `SSL_ALERT_NO_CERTIFICATE`, `SSL_ALERT_WARNING`, `SSL_DEBUG_CRT`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_CERTIFICATE`, `SSL_IS_CLIENT`, `SSL_MAX_CONTENT_LEN`, `SSL_MINOR_VERSION_0`, `SSL_MSG_ALERT`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_CERTIFICATE_REQUIRED`, and `XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

7.117.5.33 int ssl_write_change_cipher_spec (ssl_context * *ssl*)

Definition at line 1287 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_MSG_CHANGE_CIPHER_SPEC`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

7.117.5.34 int ssl_write_finished (ssl_context * *ssl*)

Definition at line 1433 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::endpoint`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `md5()`, `_ssl_context::minor_ver`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `_ssl_context::resume`, `sha1()`, `ssl_calc_finished()`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HANDSHAKE_OVER`, `SSL_HS_FINISHED`, `SSL_IS_CLIENT`, `SSL_MINOR_VERSION_0`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

7.117.5.35 int ssl_write_record (ssl_context * *ssl*)

Definition at line 786 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::major_ver`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::out_hdr`, `_ssl_context::out_left`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_encrypt_buf()`, `ssl_flush_output()`, and `SSL_MSG_HANDSHAKE`.

Referenced by ssl_close_notify(), ssl_write(), ssl_write_certificate(), ssl_write_certificate_request(), ssl_write_certificate_verify(), ssl_write_change_cipher_spec(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), ssl_write_server_hello(), ssl_write_server_hello_done(), and ssl_write_server_key_exchange().

7.117.6 Variable Documentation

7.117.6.1 int ssl_default_ciphers[]

Definition at line 1739 of file ssl_tls.c.

Referenced by main(), and ssl_test().

7.118 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h File Reference

Data Structures

- struct [hr_time](#)
timer structure

Functions

- unsigned long [hardclock](#) (void)
Return the CPU cycle counter value.
- unsigned long [get_timer](#) (struct [hr_time](#) *val, int reset)
Return the elapsed time in milliseconds.
- void [set_alarm](#) (int seconds)
Setup an alarm clock.
- void [m_sleep](#) (int milliseconds)
Sleep for a certain amount of time.

Variables

- int [alarmed](#)

7.118.1 Detailed Description

Definition in file [timing.h](#).

7.118.2 Function Documentation

7.118.2.1 unsigned long [get_timer](#) (struct [hr_time](#) * *val*, int *reset*)

Return the elapsed time in milliseconds.

Parameters

val points to a timer structure
reset if set to 1, the timer is restarted

Definition at line 225 of file [timing.c](#).

References [_hr_time::start](#).

Referenced by [ssl_test\(\)](#).

7.118.2.2 unsigned long hardclock (void)

Return the CPU cycle counter value.

Definition at line 155 of file timing.c.

References tv_init.

Referenced by main().

7.118.2.3 void m_sleep (int *milliseconds*)

Sleep for a certain amount of time.

Definition at line 258 of file timing.c.

7.118.2.4 void set_alarm (int *seconds*)

Setup an alarm clock.

Parameters

seconds delay before the "alarmed" flag is set

Definition at line 251 of file timing.c.

References sighandler().

Referenced by main().

7.118.3 Variable Documentation

7.118.3.1 int alarmed

Definition at line 179 of file timing.c.

Referenced by main().

7.119 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h File Reference

```
#include "xyssl/rsa.h"
```

Data Structures

- struct `_x509_buf`
- struct `_x509_name`
- struct `_x509_time`
- struct `_x509_cert`
- struct `_x509_node`
- struct `_x509_raw`

Defines

- #define `XYSSL_ERR ASN1_OUT_OF_DATA` -0x0014
- #define `XYSSL_ERR ASN1_UNEXPECTED_TAG` -0x0016
- #define `XYSSL_ERR ASN1_INVALID_LENGTH` -0x0018
- #define `XYSSL_ERR ASN1_LENGTH_MISMATCH` -0x001A
- #define `XYSSL_ERR ASN1_INVALID_DATA` -0x001C
- #define `XYSSL_ERR X509_FEATURE_UNAVAILABLE` -0x0020
- #define `XYSSL_ERR X509_CERT_INVALID_PEM` -0x0040
- #define `XYSSL_ERR X509_CERT_INVALID_FORMAT` -0x0060
- #define `XYSSL_ERR X509_CERT_INVALID_VERSION` -0x0080
- #define `XYSSL_ERR X509_CERT_INVALID_SERIAL` -0x00A0
- #define `XYSSL_ERR X509_CERT_INVALID_ALG` -0x00C0
- #define `XYSSL_ERR X509_CERT_INVALID_NAME` -0x00E0
- #define `XYSSL_ERR X509_CERT_INVALID_DATE` -0x0100
- #define `XYSSL_ERR X509_CERT_INVALID_PUBKEY` -0x0120
- #define `XYSSL_ERR X509_CERT_INVALID_SIGNATURE` -0x0140
- #define `XYSSL_ERR X509_CERT_INVALID_EXTENSIONS` -0x0160
- #define `XYSSL_ERR X509_CERT_UNKNOWN_VERSION` -0x0180
- #define `XYSSL_ERR X509_CERT_UNKNOWN_SIG_ALG` -0x01A0
- #define `XYSSL_ERR X509_CERT_UNKNOWN_PK_ALG` -0x01C0
- #define `XYSSL_ERR X509_CERT_SIG_MISMATCH` -0x01E0
- #define `XYSSL_ERR X509_CERT_VERIFY_FAILED` -0x0200
- #define `XYSSL_ERR X509_KEY_INVALID_PEM` -0x0220
- #define `XYSSL_ERR X509_KEY_INVALID_VERSION` -0x0240
- #define `XYSSL_ERR X509_KEY_INVALID_FORMAT` -0x0260
- #define `XYSSL_ERR X509_KEY_INVALID_ENC_IV` -0x0280
- #define `XYSSL_ERR X509_KEY_UNKNOWN_ENC_ALG` -0x02A0
- #define `XYSSL_ERR X509_KEY_PASSWORD_REQUIRED` -0x02C0
- #define `XYSSL_ERR X509_KEY_PASSWORD_MISMATCH` -0x02E0
- #define `XYSSL_ERR X509_POINT_ERROR` -0x0300
- #define `XYSSL_ERR X509_VALUE_TO_LENGTH` -0x0320
- #define `BADCERT_EXPIRED` 1
- #define `BADCERT_REVOKED` 2
- #define `BADCERT_CN_MISMATCH` 4

- #define **BADCERT_NOT_TRUSTED** 8
- #define **ASN1_BOOLEAN** 0x01
- #define **ASN1_INTEGER** 0x02
- #define **ASN1_BIT_STRING** 0x03
- #define **ASN1_OCTET_STRING** 0x04
- #define **ASN1_NULL** 0x05
- #define **ASN1_OID** 0x06
- #define **ASN1_UTF8_STRING** 0x0C
- #define **ASN1_SEQUENCE** 0x10
- #define **ASN1_SET** 0x11
- #define **ASN1_PRINTABLE_STRING** 0x13
- #define **ASN1_T61_STRING** 0x14
- #define **ASN1_IA5_STRING** 0x16
- #define **ASN1_UTC_TIME** 0x17
- #define **ASN1_UNIVERSAL_STRING** 0x1C
- #define **ASN1_BMP_STRING** 0x1E
- #define **ASN1_PRIMITIVE** 0x00
- #define **ASN1_CONSTRUCTED** 0x20
- #define **ASN1_CONTEXT_SPECIFIC** 0x80
- #define **X520_COMMON_NAME** 3
- #define **X520_COUNTRY** 6
- #define **X520_LOCALITY** 7
- #define **X520_STATE** 8
- #define **X520_ORGANIZATION** 10
- #define **X520_ORG_UNIT** 11
- #define **PKCS9_EMAIL** 1
- #define **X509_OUTPUT_DER** 0x01
- #define **X509_OUTPUT_PEM** 0x02
- #define **PEM_LINE_LENGTH** 72
- #define **X509_ISSUER** 0x01
- #define **X509 SUBJECT** 0x02
- #define **OID_X520** "\x55\x04"
- #define **OID_CN** "\x55\x04\x03"
- #define **OID_PKCS1** "\x2A\x86\x48\x86\xF7\x0D\x01\x01"
- #define **OID_PKCS1_RSA** "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x01"
- #define **OID_PKCS1_RSA_SHA** "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x05"
- #define **OID_PKCS9** "\x2A\x86\x48\x86\xF7\x0D\x01\x09"
- #define **OID_PKCS9_EMAIL** "\x2A\x86\x48\x86\xF7\x0D\x01\x09\x01"

Typedefs

- typedef struct **_x509_buf** **x509_buf**
- typedef struct **_x509_name** **x509_name**
- typedef struct **_x509_time** **x509_time**
- typedef struct **_x509_cert** **x509_cert**
- typedef struct **_x509_node** **x509_node**
- typedef struct **_x509_raw** **x509_raw**

Functions

- int `x509parse_crt` (`x509_cert` *crt, unsigned char *buf, int buflen)
Parse one or more certificates and add them to the chained list.
- int `x509parse_crtfile` (`x509_cert` *crt, char *path)
Load one or more certificates and add them to the chained list.
- int `x509parse_key` (`rsa_context` *rsa, unsigned char *buf, int buflen, unsigned char *pwd, int pwdlen)
Parse a private RSA key.
- int `x509parse_keyfile` (`rsa_context` *rsa, char *path, char *password)
Load and parse a private RSA key.
- int `x509parse_dn_gets` (char *buf, char *end, `x509_name` *dn)
Store the certificate DN in printable form into buf; no more than (end - buf) characters will be written.
- char * `x509parse_cert_info` (char *prefix, `x509_cert` *crt)
Returns an informational string about the certificate.
- int `x509parse_expired` (`x509_cert` *crt)
Return 0 if the certificate is still valid, or BADCERT_EXPIRED.
- int `x509parse_verify` (`x509_cert` *crt, `x509_cert` *trust_ca, char *cn, int *flags)
Verify the certificate signature.
- void `x509_free` (`x509_cert` *crt)
Unallocate all certificate data.
- int `x509_self_test` (int verbose)
Checkup routine.

7.119.1 Detailed Description

Definition in file `x509.h`.

7.119.2 Define Documentation

7.119.2.1 #define ASN1_BIT_STRING 0x03

Definition at line 51 of file `x509.h`.

Referenced by `x509_get_pubkey()`, and `x509_get_sig()`.

7.119.2.2 #define ASN1_BMP_STRING 0x1E

Definition at line 63 of file `x509.h`.

Referenced by `x509_get_name()`.

7.119.2.3 #define ASN1_BOOLEAN 0x01

Definition at line 49 of file x509.h.

Referenced by asn1_get_bool().

7.119.2.4 #define ASN1_CONSTRUCTED 0x20

Definition at line 65 of file x509.h.

Referenced by x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509_get_uid(), x509_get_version(), x509parse_crt(), and x509parse_key().

7.119.2.5 #define ASN1_CONTEXT_SPECIFIC 0x80

Definition at line 66 of file x509.h.

Referenced by x509_get_ext(), x509_get_serial(), x509_get_uid(), and x509_get_version().

7.119.2.6 #define ASN1_IA5_STRING 0x16

Definition at line 60 of file x509.h.

Referenced by x509_get_name().

7.119.2.7 #define ASN1_INTEGER 0x02

Definition at line 50 of file x509.h.

Referenced by asn1_get_int(), asn1_get_mpi(), and x509_get_serial().

7.119.2.8 #define ASN1_NULL 0x05

Definition at line 53 of file x509.h.

Referenced by x509_get_alg().

7.119.2.9 #define ASN1_OCTET_STRING 0x04

Definition at line 52 of file x509.h.

Referenced by x509_get_ext().

7.119.2.10 #define ASN1_OID 0x06

Definition at line 54 of file x509.h.

Referenced by x509_get_alg(), and x509_get_name().

7.119.2.11 #define ASN1_PRIMITIVE 0x00

Definition at line 64 of file x509.h.

Referenced by x509_get_serial().

7.119.2.12 #define ASN1_PRINTABLE_STRING 0x13

Definition at line 58 of file x509.h.

Referenced by x509_get_name().

7.119.2.13 #define ASN1_SEQUENCE 0x10

Definition at line 56 of file x509.h.

Referenced by x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509parse_crt(), and x509parse_key().

7.119.2.14 #define ASN1_SET 0x11

Definition at line 57 of file x509.h.

Referenced by x509_get_name().

7.119.2.15 #define ASN1_T61_STRING 0x14

Definition at line 59 of file x509.h.

Referenced by x509_get_name().

7.119.2.16 #define ASN1_UNIVERSAL_STRING 0x1C

Definition at line 62 of file x509.h.

Referenced by x509_get_name().

7.119.2.17 #define ASN1_UTC_TIME 0x17

Definition at line 61 of file x509.h.

Referenced by x509_get_dates().

7.119.2.18 #define ASN1_UTF8_STRING 0x0C

Definition at line 55 of file x509.h.

Referenced by x509_get_name().

7.119.2.19 #define BADCERT_CN_MISMATCH 4

Definition at line 43 of file x509.h.

Referenced by main(), and x509parse_verify().

7.119.2.20 #define BADCERT_EXPIRED 1

Definition at line 41 of file x509.h.

Referenced by main(), and x509parse_expired().

7.119.2.21 #define BADCERT_NOT_TRUSTED 8

Definition at line 44 of file x509.h.

Referenced by main(), and x509parse_verify().

7.119.2.22 #define BADCERT_REVOKED 2

Definition at line 42 of file x509.h.

Referenced by main().

7.119.2.23 #define OID_CN "\x55\x04\x03"

Definition at line 86 of file x509.h.

Referenced by x509parse_verify().

7.119.2.24 #define OID_PKCS1 "\x2A\x86\x48\x86\xF7\x0D\x01\x01"

Definition at line 87 of file x509.h.

Referenced by x509parse_crt().

7.119.2.25 #define OID_PKCS1_RSA "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x01"

Definition at line 88 of file x509.h.

Referenced by x509_get_pubkey().

7.119.2.26 #define OID_PKCS1_RSA_SHA "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x05"

Definition at line 89 of file x509.h.

7.119.2.27 #define OID_PKCS9 "\x2A\x86\x48\x86\xF7\x0D\x01\x09"

Definition at line 90 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.28 #define OID_PKCS9_EMAIL "\x2A\x86\x48\x86\xF7\x0D\x01\x09\x01"

Definition at line 91 of file x509.h.

7.119.2.29 #define OID_X520 "\x55\x04"

Definition at line 85 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.30 #define PEM_LINE_LENGTH 72

Definition at line 81 of file x509.h.

7.119.2.31 #define PKCS9_EMAIL 1

Definition at line 77 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.32 #define X509_ISSUER 0x01

Definition at line 82 of file x509.h.

7.119.2.33 #define X509_OUTPUT_DER 0x01

Definition at line 79 of file x509.h.

7.119.2.34 #define X509_OUTPUT_PEM 0x02

Definition at line 80 of file x509.h.

7.119.2.35 #define X509 SUBJECT 0x02

Definition at line 83 of file x509.h.

7.119.2.36 #define X520_COMMON_NAME 3

Definition at line 71 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.37 #define X520_COUNTRY 6

Definition at line 72 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.38 #define X520_LOCALITY 7

Definition at line 73 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.39 #define X520_ORG_UNIT 11

Definition at line 76 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.40 #define X520_ORGANIZATION 10

Definition at line 75 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.41 #define X520_STATE 8

Definition at line 74 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.42 #define XYSSL_ERR ASN1_INVALID_DATA -0x001C

Definition at line 13 of file x509.h.

7.119.2.43 #define XYSSL_ERR ASN1_INVALID_LENGTH -0x0018

Definition at line 11 of file x509.h.

Referenced by asn1_get_bool(), asn1_get_int(), and asn1_get_len().

7.119.2.44 #define XYSSL_ERR ASN1_LENGTH_MISMATCH -0x001A

Definition at line 12 of file x509.h.

Referenced by x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509_get_version(), x509parse_crt(), and x509parse_key().

7.119.2.45 #define XYSSL_ERR ASN1_OUT_OF_DATA -0x0014

Definition at line 9 of file x509.h.

Referenced by asn1_get_len(), asn1_get_tag(), x509_get_name(), x509_get_pubkey(), and x509_get_serial().

7.119.2.46 #define XYSSL_ERR ASN1_UNEXPECTED_TAG -0x0016

Definition at line 10 of file x509.h.

Referenced by asn1_get_tag(), x509_get_ext(), x509_get_name(), x509_get_serial(), x509_get_uid(), and x509_get_version().

7.119.2.47 #define XYSSL_ERR_X509_CERT_INVALID_ALG -0x00C0

Definition at line 20 of file x509.h.

Referenced by x509_get_alg().

7.119.2.48 #define XYSSL_ERR_X509_CERT_INVALID_DATE -0x0100

Definition at line 22 of file x509.h.

Referenced by x509_get_dates().

7.119.2.49 #define XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS -0x0160

Definition at line 25 of file x509.h.

Referenced by x509_get_ext().

7.119.2.50 #define XYSSL_ERR_X509_CERT_INVALID_FORMAT -0x0060

Definition at line 17 of file x509.h.

Referenced by x509parse_crt().

7.119.2.51 #define XYSSL_ERR_X509_CERT_INVALID_NAME -0x00E0

Definition at line 21 of file x509.h.

Referenced by x509_get_name().

7.119.2.52 #define XYSSL_ERR_X509_CERT_INVALID_PEM -0x0040

Definition at line 16 of file x509.h.

Referenced by x509parse_crt().

7.119.2.53 #define XYSSL_ERR_X509_CERT_INVALID_PUBKEY -0x0120

Definition at line 23 of file x509.h.

Referenced by x509_get_pubkey().

7.119.2.54 #define XYSSL_ERR_X509_CERT_INVALID_SERIAL -0x00A0

Definition at line 19 of file x509.h.

Referenced by x509_get_serial().

7.119.2.55 #define XYSSL_ERR_X509_CERT_INVALID_SIGNATURE -0x0140

Definition at line 24 of file x509.h.

Referenced by x509_get_sig().

7.119.2.56 #define XYSSL_ERR_X509_CERT_INVALID_VERSION -0x0080

Definition at line 18 of file x509.h.

Referenced by x509_get_version().

7.119.2.57 #define XYSSL_ERR_X509_CERT_SIG_MISMATCH -0x01E0

Definition at line 29 of file x509.h.

Referenced by x509parse_crt().

7.119.2.58 #define XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG -0x01C0

Definition at line 28 of file x509.h.

Referenced by x509_get_pubkey().

7.119.2.59 #define XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG -0x01A0

Definition at line 27 of file x509.h.

Referenced by x509parse_crt().

7.119.2.60 #define XYSSL_ERR_X509_CERT_UNKNOWN_VERSION -0x0180

Definition at line 26 of file x509.h.

Referenced by x509parse_crt().

7.119.2.61 #define XYSSL_ERR_X509_CERT_VERIFY_FAILED -0x0200

Definition at line 30 of file x509.h.

Referenced by x509parse_verify().

7.119.2.62 #define XYSSL_ERR_X509_FEATURE_UNAVAILABLE -0x0020

Definition at line 15 of file x509.h.

Referenced by x509parse_key().

7.119.2.63 #define XYSSL_ERR_X509_KEY_INVALID_ENC_IV -0x0280

Definition at line 34 of file x509.h.

Referenced by x509_get_iv(), and x509parse_key().

7.119.2.64 #define XYSSL_ERR_X509_KEY_INVALID_FORMAT -0x0260

Definition at line 33 of file x509.h.

Referenced by x509parse_key().

7.119.2.65 #define XYSSL_ERR_X509_KEY_INVALID_PEM -0x0220

Definition at line 31 of file x509.h.

Referenced by x509parse_key().

7.119.2.66 #define XYSSL_ERR_X509_KEY_INVALID_VERSION -0x0240

Definition at line 32 of file x509.h.

Referenced by x509parse_key().

7.119.2.67 #define XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH -0x02E0

Definition at line 37 of file x509.h.

Referenced by x509parse_key().

7.119.2.68 #define XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED -0x02C0

Definition at line 36 of file x509.h.

Referenced by x509parse_key().

7.119.2.69 #define XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG -0x02A0

Definition at line 35 of file x509.h.

Referenced by x509parse_key().

7.119.2.70 #define XYSSL_ERR_X509_POINT_ERROR -0x0300

Definition at line 38 of file x509.h.

7.119.2.71 #define XYSSL_ERR_X509_VALUE_TO_LENGTH -0x0320

Definition at line 39 of file x509.h.

7.119.3 Typedef Documentation

7.119.3.1 `typedef struct _x509_buf x509_buf`

7.119.3.2 `typedef struct _x509_cert x509_cert`

7.119.3.3 `typedef struct _x509_name x509_name`

7.119.3.4 `typedef struct _x509_node x509_node`

7.119.3.5 `typedef struct _x509_raw x509_raw`

7.119.3.6 `typedef struct _x509_time x509_time`

7.119.4 Function Documentation

7.119.4.1 `void x509_free (x509_cert * crt)`

Unallocate all certificate data.

Definition at line 1613 of file x509parse.c.

References `_x509_cert::issuer`, `_x509_buf::len`, `_x509_cert::next`, `_x509_name::next`, `_x509_buf::p`, `_x509_cert::raw`, `_x509_cert::rsa`, `rsa_free()`, and `_x509_cert::subject`.

Referenced by `main()`, `ssl_free()`, `ssl_test()`, `x509_self_test()`, and `x509parse_crt()`.

7.119.4.2 `int x509_self_test (int verbose)`

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 1675 of file x509parse.c.

References `rsa_free()`, `test_ca_crt`, `test_ca_key`, `test_ca_pwd`, `test_cli_crt`, `x509_free()`, `x509parse_crt()`, `x509parse_key()`, and `x509parse_verify()`.

Referenced by `main()`.

7.119.4.3 `char* x509parse_cert_info (char * prefix, x509_cert * crt)`

Returns an informational string about the certificate.

Definition at line 1399 of file x509parse.c.

References `buf`, `_x509_time::day`, `_x509_time::hour`, `_x509_cert::issuer`, `_x509_buf::len`, `_x509_time::min`, `_x509_time::mon`, `mpi::n`, `rsa_context::N`, `_x509_buf::p`, `_x509_cert::rsa`, `RSA_MD2`, `RSA_MD4`, `RSA_MD5`, `RSA_SHA1`, `_x509_time::sec`, `_x509_cert::serial`, `_x509_cert::sig_oid1`, `_x509_cert::subject`, `_x509_cert::valid_from`, `_x509_cert::valid_to`, `_x509_cert::version`, `x509parse_dn_gets()`, and `_x509_time::year`.

Referenced by `debug_print_crt()`, and `main()`.

7.119.4.4 int x509parse_crt (x509_cert * crt, unsigned char * buf, int buflen)

Parse one or more certificates and add them to the chained list.

Parameters

- chain* points to the start of the chain
- buf* buffer holding the certificate data
- buflen* size of the buffer

Returns

0 if successful, or a specific X509 error code

Definition at line 647 of file x509parse.c.

References ASN1_CONSTRUCTED, asn1_get_tag(), ASN1_SEQUENCE, base64_decode(), _x509_cert::ca_istru, rsa_context::E, _x509_cert::issuer, _x509_cert::issuer_id, _x509_cert::issuer_raw, rsa_context::len, _x509_buf::len, _x509_cert::max_pathlen, mpi_size(), rsa_context::N, _x509_cert::next, OID_PKCS1, _x509_buf::p, _x509_cert::pk_oid, _x509_cert::raw, _x509_cert::rsa, rsa_check_pubkey(), _x509_cert::serial, _x509_cert::sig, _x509_cert::sig_oid1, _x509_cert::sig_oid2, _x509_cert::subject, _x509_cert::subject_id, _x509_cert::subject_raw, _x509_cert::tbs, _x509_cert::v3_ext, _x509_cert::valid_from, _x509_cert::valid_to, _x509_cert::version, x509_free(), x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509_get_serial(), x509_get_sig(), x509_get_uid(), x509_get_version(), x509parse_crt(), XYSSL_ERR ASN1_LENGTH_MISMATCH, XYSSL_ERR_BASE64_INVALID_CHARACTER, XYSSL_ERR_X509_CERT_INVALID_FORMAT, XYSSL_ERR_X509_CERT_INVALID_PEM, XYSSL_ERR_X509_CERT_SIG_MISMATCH, XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG, and XYSSL_ERR_X509_CERT_UNKNOWN_VERSION.

Referenced by main(), ssl_parse_certificate(), ssl_test(), x509_self_test(), x509parse_crt(), and x509parse_crtfile().

7.119.4.5 int x509parse_crtfile (x509_cert * crt, char * path)

Load one or more certificates and add them to the chained list.

Parameters

- chain* points to the start of the chain
- path* filename to read the certificates from

Returns

0 if successful, or a specific X509 error code

Definition at line 979 of file x509parse.c.

References buf, f, and x509parse_crt().

7.119.4.6 int x509parse_dn_gets (char * buf, char * end, x509_name * dn)

Store the certificate DN in printable form into buf; no more than (end - buf) characters will be written.

Definition at line 1316 of file x509parse.c.

References `_x509_buf::len`, `_x509_name::next`, `_x509_name::oid`, `OID_PKCS9`, `OID_X520`, `_x509_buf::p`, `PKCS9_EMAIL`, `_x509_name::val`, `X520_COMMON_NAME`, `X520_COUNTRY`, `X520_LOCALITY`, `X520_ORG_UNIT`, `X520_ORGANIZATION`, and `X520_STATE`.

Referenced by `x509parse_cert_info()`.

7.119.4.7 int x509parse_expired (`x509_cert * crt`)

Return 0 if the certificate is still valid, or `BADCERT_EXPIRED`.

Definition at line 1458 of file `x509parse.c`.

References `BADCERT_EXPIRED`, `_x509_time::day`, `_x509_time::mon`, `_x509_cert::valid_to`, and `_x509_time::year`.

Referenced by `x509parse_verify()`.

7.119.4.8 int x509parse_key (`rsa_context * rsa`, `unsigned char * buf`, `int buflen`, `unsigned char * pwd`, `int pwdlen`)

Parse a private RSA key.

Parameters

`rsa` RSA context to be initialized
`buf` input buffer
`buflen` size of the buffer
`pwd` password for decryption (optional)
`pwdlen` size of the password

Returns

0 if successful, or a specific X509 error code

Definition at line 1082 of file `x509parse.c`.

References `ASN1_CONSTRUCTED`, `asn1_get_int()`, `asn1_get_mpi()`, `asn1_get_tag()`, `ASN1_SEQUENCE`, `base64_decode()`, `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `rsa_context::len`, `mpi_size()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::Q`, `rsa_context::QP`, `rsa_check_privkey()`, `rsa_free()`, `rsa_context::ver`, `x509_des3_decrypt()`, `x509_get_iv()`, `XYSSL_ERR ASN1_LENGTH_MISMATCH`, `XYSSL_ERR_BASE64_INVALID_CHARACTER`, `XYSSL_ERR_X509_FEATURE_UNAVAILABLE`, `XYSSL_ERR_X509_KEY_INVALID_ENC_IV`, `XYSSL_ERR_X509_KEY_INVALID_FORMAT`, `XYSSL_ERR_X509_KEY_INVALID_PEM`, `XYSSL_ERR_X509_KEY_INVALID_VERSION`, `XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH`, `XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED`, and `XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG`.

Referenced by `main()`, `ssl_test()`, `x509_self_test()`, and `x509parse_keyfile()`.

7.119.4.9 int x509parse_keyfile (`rsa_context * rsa`, `char * path`, `char * password`)

Load and parse a private RSA key.

Parameters

`rsa` RSA context to be initialized

path filename to read the private key from
pwd password to decrypt the file (can be NULL)

Returns

0 if successful, or a specific X509 error code

Definition at line 1269 of file x509parse.c.

References buf, f, and x509parse_key().

7.119.4.10 int x509parse_verify (x509_cert * *crt*, x509_cert * *trust_ca*, char * *cn*, int * *flags*)

Verify the certificate signature.

Parameters

crt a certificate to be verified
trust_ca the trusted CA chain
cn expected Common Name (can be set to NULL if the CN must not be verified)
flags result of the verification

Returns

0 if successful or XYSSL_ERR_X509_SIG_VERIFY_FAILED, in which case *flags will have one or more of the following values set: BADCERT_EXPIRED -- BADCERT_REVOKED -- BADCERT_CN_MISMATCH -- BADCERT_NOT_TRUSTED

Note

TODO: add two arguments, depth and crl

Definition at line 1503 of file x509parse.c.

References BADCERT_CN_MISMATCH, BADCERT_NOT_TRUSTED, _x509_cert::ca_istrued, cur, _x509_cert::issuer_raw, _x509_buf::len, _x509_cert::max_pathlen, _x509_cert::next, _x509_name::next, _x509_name::oid, OID_CN, _x509_buf::p, _x509_cert::rsa, rsa_pkcs1_verify(), RSA_PUBLIC, _x509_cert::sig, _x509_cert::sig_oid1, _x509_cert::subject, _x509_cert::subject_raw, _x509_cert::tbs, _x509_name::val, _x509_cert::version, x509_hash(), x509parse_expired(), and XYSSL_ERR_X509_CERT_VERIFY_FAILED.

Referenced by ssl_parse_certificate(), and x509_self_test().

7.120 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/aes.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/aes.h"
#include "xyssl/padlock.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define GET ULONG LE(n, b, i)
- #define PUT ULONG LE(n, b, i)
- #define ROTL8(x) ((x << 8) & 0xFFFFFFFF) | (x >> 24)
- #define XTIME(x) ((x << 1) ^ ((x & 0x80) ? 0x1B : 0x00))
- #define MUL(x, y) ((x && y) ? pow[(log[x]+log[y]) % 255] : 0)
- #define AES_FROUND(X0, X1, X2, X3, Y0, Y1, Y2, Y3)
- #define AES_RROUND(X0, X1, X2, X3, Y0, Y1, Y2, Y3)

Functions

- static void [aes_gen_tables](#) (void)
- void [aes_setkey_enc](#) (aes_context *ctx, unsigned char *key, int keysize)

AES key schedule (encryption).
- void [aes_setkey_dec](#) (aes_context *ctx, unsigned char *key, int keysize)

AES key schedule (decryption).
- void [aes_crypt_ecb](#) (aes_context *ctx, int mode, unsigned char input[16], unsigned char output[16])

AES-ECB block encryption/decryption.
- void [aes_crypt_cbc](#) (aes_context *ctx, int mode, int length, unsigned char iv[16], unsigned char *input, unsigned char *output)

AES-CBC buffer encryption/decryption.
- void [aes_crypt_cfb](#) (aes_context *ctx, int mode, int length, int *iv_off, unsigned char iv[16], unsigned char *input, unsigned char *output)

AES-CFB buffer encryption/decryption.
- int [aes_self_test](#) (int verbose)

Checkup routine.

Variables

- static unsigned char **FSb** [256]
- static unsigned long **FT0** [256]
- static unsigned long **FT1** [256]
- static unsigned long **FT2** [256]
- static unsigned long **FT3** [256]
- static unsigned char **RSb** [256]
- static unsigned long **RT0** [256]
- static unsigned long **RT1** [256]
- static unsigned long **RT2** [256]
- static unsigned long **RT3** [256]
- static unsigned long **RCON** [10]
- static int **aes_init_done** = 0
- static const unsigned char **aes_test_ecb_dec** [3][16]
- static const unsigned char **aes_test_ecb_enc** [3][16]
- static const unsigned char **aes_test_cbc_dec** [3][16]
- static const unsigned char **aes_test_cbc_enc** [3][16]
- static const unsigned char **aes_test_cfb_dec** [3][16]
- static const unsigned char **aes_test_cfb_enc** [3][16]

7.120.1 Define Documentation

7.120.1.1 #define AES_FROUND(X0, X1, X2, X3, Y0, Y1, Y2, Y3)

Value:

```
{
    X0 = *RK++ ^ FT0[ ( Y0 ) & 0xFF ] ^ \
          FT1[ ( Y1 >> 8 ) & 0xFF ] ^ \
          FT2[ ( Y2 >> 16 ) & 0xFF ] ^ \
          FT3[ ( Y3 >> 24 ) & 0xFF ]; \
    \
    X1 = *RK++ ^ FT0[ ( Y1 ) & 0xFF ] ^ \
          FT1[ ( Y2 >> 8 ) & 0xFF ] ^ \
          FT2[ ( Y3 >> 16 ) & 0xFF ] ^ \
          FT3[ ( Y0 >> 24 ) & 0xFF ]; \
    \
    X2 = *RK++ ^ FT0[ ( Y2 ) & 0xFF ] ^ \
          FT1[ ( Y3 >> 8 ) & 0xFF ] ^ \
          FT2[ ( Y0 >> 16 ) & 0xFF ] ^ \
          FT3[ ( Y1 >> 24 ) & 0xFF ]; \
    \
    X3 = *RK++ ^ FT0[ ( Y3 ) & 0xFF ] ^ \
          FT1[ ( Y0 >> 8 ) & 0xFF ] ^ \
          FT2[ ( Y1 >> 16 ) & 0xFF ] ^ \
          FT3[ ( Y2 >> 24 ) & 0xFF ]; \
}
```

Definition at line 590 of file aes.c.

Referenced by `aes_crypt_ecb()`.

7.120.1.2 #define AES_RROUND(X0, X1, X2, X3, Y0, Y1, Y2, Y3)**Value:**

```
{
    X0 = *RK++ ^ RT0[ ( Y0 ) & 0xFF ] ^ \
          RT1[ ( Y3 >> 8 ) & 0xFF ] ^ \
          RT2[ ( Y2 >> 16 ) & 0xFF ] ^ \
          RT3[ ( Y1 >> 24 ) & 0xFF ]; \
    \
    X1 = *RK++ ^ RT0[ ( Y1 ) & 0xFF ] ^ \
          RT1[ ( Y0 >> 8 ) & 0xFF ] ^ \
          RT2[ ( Y3 >> 16 ) & 0xFF ] ^ \
          RT3[ ( Y2 >> 24 ) & 0xFF ]; \
    \
    X2 = *RK++ ^ RT0[ ( Y2 ) & 0xFF ] ^ \
          RT1[ ( Y1 >> 8 ) & 0xFF ] ^ \
          RT2[ ( Y0 >> 16 ) & 0xFF ] ^ \
          RT3[ ( Y3 >> 24 ) & 0xFF ]; \
    \
    X3 = *RK++ ^ RT0[ ( Y3 ) & 0xFF ] ^ \
          RT1[ ( Y2 >> 8 ) & 0xFF ] ^ \
          RT2[ ( Y1 >> 16 ) & 0xFF ] ^ \
          RT3[ ( Y0 >> 24 ) & 0xFF ]; \
}
```

Definition at line 613 of file aes.c.

Referenced by aes_crypt_ecb().

7.120.1.3 #define GET ULONG LE(n, b, i)**Value:**

```
{
    (n) = ( (unsigned long) (b)[(i)] ) \
          | ( (unsigned long) (b)[(i) + 1] << 8 ) \
          | ( (unsigned long) (b)[(i) + 2] << 16 ) \
          | ( (unsigned long) (b)[(i) + 3] << 24 );
}
```

Definition at line 40 of file aes.c.

Referenced by aes_crypt_ecb(), aes_setkey_enc(), and md5_process().

7.120.1.4 #define MUL(x, y) ((x && y) ? pow[(log[x]+log[y]) % 255] : 0)

Definition at line 354 of file aes.c.

Referenced by aes_gen_tables().

7.120.1.5 #define PUT ULONG LE(n, b, i)**Value:**

```
{
    (b)[(i)] = (unsigned char) ( (n) );
    (b)[(i) + 1] = (unsigned char) ( (n) >> 8 );
    (b)[(i) + 2] = (unsigned char) ( (n) >> 16 );
    (b)[(i) + 3] = (unsigned char) ( (n) >> 24 );
}
```

Definition at line 50 of file aes.c.

Referenced by aes_crypt_ecb(), and md5_finish().

7.120.1.6 #define ROTL8(x) ((x << 8) & 0xFFFFFFFF) | (x >> 24)

Definition at line 352 of file aes.c.

Referenced by aes_gen_tables().

7.120.1.7 #define XTIME(x) ((x << 1) ^ ((x & 0x80) ? 0x1B : 0x00))

Definition at line 353 of file aes.c.

Referenced by aes_gen_tables().

7.120.2 Function Documentation

7.120.2.1 void aes_crypt_cbc (aes_context * *ctx*, int *mode*, int *length*, unsigned char *iv*[16], unsigned char * *input*, unsigned char * *output*)

AES-CBC buffer encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
length length of the input data
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 732 of file aes.c.

References aes_crypt_ecb(), and AES_DECRYPT.

Referenced by aes_self_test(), main(), ssl_decrypt_buf(), and ssl_encrypt_buf().

7.120.2.2 void aes_crypt_cfb (aes_context * *ctx*, int *mode*, int *length*, int * *iv_off*, unsigned char *iv*[16], unsigned char * *input*, unsigned char * *output*)

AES-CFB buffer encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
length length of the input data
iv_off offset in IV (updated after use)
iv initialization vector (updated after use)
input buffer holding the input data

output buffer holding the output data

Definition at line 787 of file aes.c.

References aes_crypt_ecb(), AES_DECRYPT, and AES_ENCRYPT.

Referenced by aes_self_test().

7.120.2.3 void aes_crypt_ecb (aes_context * *ctx*, int *mode*, unsigned char *input*[16], unsigned char *output*[16])

AES-ECB block encryption/decryption.

Parameters

ctx AES context

mode AES_ENCRYPT or AES_DECRYPT

input 16-byte input block

output 16-byte output block

Definition at line 639 of file aes.c.

References AES_DECRYPT, AES_FROUND, AES_RROUND, FSb, GET ULONG LE, aes_context::nr, PUT ULONG LE, aes_context::rk, and RSb.

Referenced by aes_crypt_cbc(), aes_crypt_cfb(), aes_en_de(), aes_self_test(), and main().

7.120.2.4 static void aes_gen_tables (void) [static]

Definition at line 358 of file aes.c.

References FSb, FT0, FT1, FT2, FT3, MUL, RCON, ROTL8, RSb, RT0, RT1, RT2, RT3, and XTIME.

Referenced by aes_setkey_enc().

7.120.2.5 int aes_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 902 of file aes.c.

References aes_crypt_cbc(), aes_crypt_cfb(), aes_crypt_ecb(), AES_DECRYPT, aes_setkey_dec(), aes_setkey_enc(), aes_test_cbc_dec, aes_test_cbc_enc, aes_test_cfb_dec, aes_test_cfb_enc, aes_test_ecb_dec, aes_test_ecb_enc, buf, and prv.

Referenced by main().

7.120.2.6 void aes_setkey_dec (aes_context * *ctx*, unsigned char * *key*, int *keysize*)

AES key schedule (decryption).

Parameters

ctx AES context to be initialized
key decryption key
keysize must be 128, 192 or 256

Definition at line 542 of file aes.c.

References aes_setkey_enc(), aes_context::buf, FSb, aes_context::nr, aes_context::rk, RT0, RT1, RT2, and RT3.

Referenced by aes_en_de(), aes_self_test(), main(), and ssl_derive_keys().

7.120.2.7 void aes_setkey_enc (aes_context * *ctx*, unsigned char * *key*, int *keysize*)

AES key schedule (encryption).

Parameters

ctx AES context to be initialized
key encryption key
keysize must be 128, 192 or 256

Definition at line 439 of file aes.c.

References aes_gen_tables(), aes_init_done, aes_context::buf, FSb, GET ULONG LE, aes_context::nr, RCON, and aes_context::rk.

Referenced by aes_en_de(), aes_self_test(), aes_setkey_dec(), main(), and ssl_derive_keys().

7.120.3 Variable Documentation**7.120.3.1 int aes_init_done = 0 [static]**

Definition at line 356 of file aes.c.

Referenced by aes_setkey_enc().

7.120.3.2 const unsigned char aes_test_cbc_dec[3][16] [static]**Initial value:**

```
{
    { 0xFA, 0xCA, 0x37, 0xE0, 0xB0, 0xC8, 0x53, 0x73,
      0xDF, 0x70, 0x6E, 0x73, 0xF7, 0xC9, 0xAF, 0x86 },
    { 0x5D, 0xF6, 0x78, 0xDD, 0x17, 0xBA, 0x4E, 0x75,
      0xB6, 0x17, 0x68, 0xC6, 0xAD, 0xEF, 0x7C, 0x7B },
    { 0x48, 0x04, 0xE1, 0x81, 0x8F, 0xE6, 0x29, 0x75,
      0x19, 0xA3, 0xE8, 0x8C, 0x57, 0x31, 0x04, 0x13 }
}
```

Definition at line 856 of file aes.c.

Referenced by aes_self_test().

7.120.3.3 const unsigned char aes_test_cbc_enc[3][16] [static]**Initial value:**

```
{
{ 0x8A, 0x05, 0xFC, 0x5E, 0x09, 0x5A, 0xF4, 0x84,
  0x8A, 0x08, 0xD3, 0x28, 0xD3, 0x68, 0x8E, 0x3D },
{ 0x7B, 0xD9, 0x66, 0xD5, 0x3A, 0xD8, 0xC1, 0xBB,
  0x85, 0xD2, 0xAD, 0xFA, 0xE8, 0x7B, 0xB1, 0x04 },
{ 0xFE, 0x3C, 0x53, 0x65, 0x3E, 0x2F, 0x45, 0xB5,
  0x6F, 0xCD, 0x88, 0xB2, 0xCC, 0x89, 0x8F, 0xF0 }
}
```

Definition at line 866 of file aes.c.

Referenced by aes_self_test().

7.120.3.4 const unsigned char aes_test_cfb_dec[3][16] [static]**Initial value:**

```
{
{ 0xBA, 0x75, 0x0C, 0xC9, 0x77, 0xF8, 0xD4, 0xE1,
  0x3E, 0x0F, 0xB5, 0x46, 0x2E, 0xA6, 0x33, 0xF6 },
{ 0xDB, 0x40, 0x4A, 0x98, 0x7B, 0xAA, 0xA3, 0xF3,
  0x92, 0x35, 0xAD, 0x58, 0x09, 0x9B, 0xFF, 0x6E },
{ 0xA8, 0x17, 0x41, 0x0E, 0x76, 0x71, 0x60, 0xE5,
  0xFD, 0x37, 0xC5, 0x43, 0xCC, 0xC8, 0xD6, 0xDA }
}
```

Definition at line 879 of file aes.c.

Referenced by aes_self_test().

7.120.3.5 const unsigned char aes_test_cfb_enc[3][16] [static]**Initial value:**

```
{
{ 0x45, 0x62, 0xC5, 0xA1, 0xF9, 0x10, 0x8F, 0xE0,
  0x87, 0x24, 0x25, 0x68, 0xB5, 0x12, 0xF3, 0x8B },
{ 0xB8, 0xD4, 0xD5, 0x09, 0xF5, 0xEE, 0x08, 0x38,
  0x48, 0x9B, 0x9D, 0xAD, 0x11, 0xB4, 0x2E, 0xD2 },
{ 0xE9, 0x10, 0x80, 0xDA, 0xEE, 0x2D, 0x81, 0xD9,
  0x41, 0x78, 0x91, 0xD5, 0x98, 0x78, 0xE1, 0xFA }
}
```

Definition at line 889 of file aes.c.

Referenced by aes_self_test().

7.120.3.6 const unsigned char aes_test_ecb_dec[3][16] [static]**Initial value:**

```
{
{ 0x44, 0x41, 0x6A, 0xC2, 0xD1, 0xF5, 0x3C, 0x58,
  0x33, 0x03, 0x91, 0x7E, 0x6B, 0xE9, 0xEB, 0xE0 },
{ 0x48, 0xE3, 0x1E, 0x9E, 0x25, 0x67, 0x18, 0xF2,
  0x92, 0x29, 0x31, 0x9C, 0x19, 0xF1, 0x5B, 0xA4 },
{ 0x05, 0x8C, 0xCF, 0xFD, 0xBB, 0xCB, 0x38, 0x2D,
  0x1F, 0x6F, 0x56, 0x5D, 0x8A, 0x4A, 0xDE }
}
```

Definition at line 836 of file aes.c.

Referenced by aes_self_test().

7.120.3.7 const unsigned char aes_test_ecb_enc[3][16] [static]

Initial value:

```
{
{ 0xC3, 0x4C, 0x05, 0x2C, 0xC0, 0xDA, 0x8D, 0x73,
  0x45, 0x1A, 0xFE, 0x5F, 0x03, 0xBE, 0x29, 0x7F },
{ 0xF3, 0xF6, 0x75, 0x2A, 0xE8, 0xD7, 0x83, 0x11,
  0x38, 0xF0, 0x41, 0x56, 0x06, 0x31, 0xB1, 0x14 },
{ 0x8B, 0x79, 0xEE, 0xCC, 0x93, 0xA0, 0xEE, 0x5D,
  0xFF, 0x30, 0xB4, 0xEA, 0x21, 0x63, 0x6D, 0xA4 }
}
```

Definition at line 846 of file aes.c.

Referenced by aes_self_test().

7.120.3.8 unsigned char FSb[256] [static]

Definition at line 329 of file aes.c.

Referenced by aes_crypt_ecb(), aes_gen_tables(), aes_setkey_dec(), and aes_setkey_enc().

7.120.3.9 unsigned long FT0[256] [static]

Definition at line 330 of file aes.c.

Referenced by aes_gen_tables().

7.120.3.10 unsigned long FT1[256] [static]

Definition at line 331 of file aes.c.

Referenced by aes_gen_tables().

7.120.3.11 unsigned long FT2[256] [static]

Definition at line 332 of file aes.c.

Referenced by aes_gen_tables().

7.120.3.12 unsigned long FT3[256] [static]

Definition at line 333 of file aes.c.

Referenced by aes_gen_tables().

7.120.3.13 unsigned long RCON[10] [static]

Definition at line 347 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_enc().

7.120.3.14 unsigned char RSb[256] [static]

Definition at line 338 of file aes.c.

Referenced by aes_crypt_ecb(), and aes_gen_tables().

7.120.3.15 unsigned long RT0[256] [static]

Definition at line 339 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

7.120.3.16 unsigned long RT1[256] [static]

Definition at line 340 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

7.120.3.17 unsigned long RT2[256] [static]

Definition at line 341 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

7.120.3.18 unsigned long RT3[256] [static]

Definition at line 342 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

7.121 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/arc4.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/arc4.h"
#include <string.h>
#include <stdio.h>
```

Functions

- void [arc4_setup](#) (arc4_context *ctx, unsigned char *key, int keylen)
ARC4 key schedule.
- void [arc4_crypt](#) (arc4_context *ctx, unsigned char *buf, int buflen)
ARC4 cipher function.
- int [arc4_self_test](#) (int verbose)

Variables

- static const unsigned char [arc4_test_key](#) [3][8]
- static const unsigned char [arc4_test_pt](#) [3][8]
- static const unsigned char [arc4_test_ct](#) [3][8]

7.121.1 Function Documentation

7.121.1.1 void [arc4_crypt](#) (arc4_context * *ctx*, unsigned char * *buf*, int *buflen*)

ARC4 cipher function.

Parameters

ctx ARC4 context
buf buffer to be processed
buflen amount of data in buf

Definition at line 63 of file arc4.c.

References arc4_context::m, arc4_context::x, and arc4_context::y.

Referenced by arc4_self_test(), main(), ssl_decrypt_buf(), and ssl_encrypt_buf().

7.121.1.2 int [arc4_self_test](#) (int *verbose*)

Definition at line 122 of file arc4.c.

References arc4_crypt(), arc4_setup(), arc4_test_ct, arc4_test_key, arc4_test_pt, and buf.

Referenced by main().

7.121.1.3 void arc4_setup (arc4_context * *ctx*, unsigned char * *key*, int *keylen*)

ARC4 key schedule.

Parameters

ctx ARC4 context to be initialized

key the secret key

keylen length of the key

Definition at line 35 of file arc4.c.

References arc4_context::m, arc4_context::x, and arc4_context::y.

Referenced by arc4_self_test(), main(), and ssl_derive_keys().

7.121.2 Variable Documentation

7.121.2.1 const unsigned char arc4_test_ct[3][8] [static]

Initial value:

```
{
{ 0xB7, 0x87, 0x80, 0x99, 0xE0, 0xC5, 0x96 },
{ 0x94, 0xC2, 0xE7, 0x10, 0x4B, 0x08, 0x79 },
{ 0xDE, 0x18, 0x89, 0x41, 0xA3, 0x37, 0x5D, 0x3A }
}
```

Definition at line 112 of file arc4.c.

Referenced by arc4_self_test().

7.121.2.2 const unsigned char arc4_test_key[3][8] [static]

Initial value:

```
{
{ 0x01, 0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF },
{ 0x01, 0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF },
{ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00 }
}
```

Definition at line 98 of file arc4.c.

Referenced by arc4_self_test().

7.121.2.3 const unsigned char arc4_test_pt[3][8] [static]

Initial value:

```
{
{ 0x01, 0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF },
{ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00 },
{ 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00 }
}
```

Definition at line 105 of file arc4.c.

Referenced by arc4_self_test().

7.122 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/base64.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/base64.h"
#include <string.h>
#include <stdio.h>
```

Functions

- int **base64_encode** (unsigned char *dst, int *dlen, unsigned char *src, int selen)
Encode a buffer into base64 format.
- int **base64_decode** (unsigned char *dst, int *dlen, unsigned char *src, int selen)
Decode a base64-formatted buffer.
- int **base64_self_test** (int verbose)
Checkup routine.

Variables

- static const unsigned char **base64_enc_map** [64]
- static const unsigned char **base64_dec_map** [128]
- static const unsigned char **base64_test_dec** [64]
- static const unsigned char **base64_test_enc** []

7.122.1 Function Documentation

7.122.1.1 int **base64_decode** (unsigned char * *dst*, int * *dlen*, unsigned char * *src*, int *slen*)

Decode a base64-formatted buffer.

Parameters

- dst*** destination buffer
- dlen*** size of the buffer
- src*** source buffer
- slen*** amount of data to be decoded

Returns

0 if successful, XYSSL_ERR_BASE64_BUFFER_TOO_SMALL, or XYSSL_ERR_BASE64_INVALID_DATA if the input data is not correct. *dlen is always updated to reflect the amount of data that has (or would have) been written.

Note

Call this function with *dlen = 0 to obtain the required buffer size in *dlen

Definition at line 121 of file base64.c.

References `base64_dec_map`, `XYSSL_ERR_BASE64_BUFFER_TOO_SMALL`, and `XYSSL_ERR_BASE64_INVALID_CHARACTER`.

Referenced by `base64_self_test()`, `x509parse_crt()`, and `x509parse_key()`.

7.122.1.2 int base64_encode (unsigned char * *dst*, int * *dlen*, unsigned char * *src*, int *slen*)

Encode a buffer into [base64](#) format.

Parameters

dst destination buffer

dlen size of the buffer

src source buffer

slen amount of data to be encoded

Returns

0 if successful, or `XYSSL_ERR_BASE64_BUFFER_TOO_SMALL`. **dlen* is always updated to reflect the amount of data that has (or would have) been written.

Note

Call this function with **dlen* = 0 to obtain the required buffer size in **dlen*

Definition at line 58 of file base64.c.

References `base64_enc_map`, and `XYSSL_ERR_BASE64_BUFFER_TOO_SMALL`.

Referenced by `base64_self_test()`.

7.122.1.3 int base64_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 206 of file base64.c.

References `base64_decode()`, `base64_encode()`, `base64_test_dec`, and `base64_test_enc`.

Referenced by `main()`.

7.122.2 Variable Documentation

7.122.2.1 const unsigned char base64_dec_map[128] [static]

Initial value:

```
{  
    127, 127, 127, 127, 127, 127, 127, 127,  
    127, 127, 127, 127, 127, 127, 127, 127,
```

```

127, 127, 127, 127, 127, 127, 127, 127, 127, 127,
127, 127, 127, 127, 127, 127, 127, 127, 127, 127,
127, 127, 127, 127, 127, 127, 127, 127, 127, 127,
127, 127, 127, 62, 127, 127, 127, 63, 52, 53,
54, 55, 56, 57, 58, 59, 60, 61, 127, 127,
127, 64, 127, 127, 127, 0, 1, 2, 3, 4,
5, 6, 7, 8, 9, 10, 11, 12, 13, 14,
15, 16, 17, 18, 19, 20, 21, 22, 23, 24,
25, 127, 127, 127, 127, 127, 26, 27, 28,
29, 30, 31, 32, 33, 34, 35, 36, 37, 38,
39, 40, 41, 42, 43, 44, 45, 46, 47, 48,
49, 50, 51, 127, 127, 127, 127, 127
}

```

Definition at line 38 of file base64.c.

Referenced by base64_decode().

7.122.2.2 const unsigned char base64_enc_map[64] [static]

Initial value:

```

{
    'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J',
    'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T',
    'U', 'V', 'W', 'X', 'Y', 'Z', 'a', 'b', 'c', 'd',
    'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n',
    'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x',
    'y', 'z', '0', '1', '2', '3', '4', '5', '6', '7',
    '8', '9', '+', '/'
}

```

Definition at line 27 of file base64.c.

Referenced by base64_encode().

7.122.2.3 const unsigned char base64_test_dec[64] [static]

Initial value:

```

{
    0x24, 0x48, 0x6E, 0x56, 0x87, 0x62, 0x5A, 0xBD,
    0xBF, 0x17, 0xD9, 0xA2, 0xC4, 0x17, 0x1A, 0x01,
    0x94, 0xED, 0x8F, 0x1E, 0x11, 0xB3, 0xD7, 0x09,
    0x0C, 0xB6, 0xE9, 0x10, 0x6F, 0x22, 0xEE, 0x13,
    0xCA, 0xB3, 0x07, 0x05, 0x76, 0xC9, 0xFA, 0x31,
    0x6C, 0x08, 0x34, 0xFF, 0x8D, 0xC2, 0x6C, 0x38,
    0x00, 0x43, 0xE9, 0x54, 0x97, 0xAF, 0x50, 0x4B,
    0xD1, 0x41, 0xBA, 0x95, 0x31, 0x5A, 0x0B, 0x97
}

```

Definition at line 187 of file base64.c.

Referenced by base64_self_test().

7.122.2.4 const unsigned char base64_test_enc[] [static]

Initial value:

```
"JEhuVodiWr2/F9mixBcaAZTt jx4Rs9cJDLbpEG8i7hPK"  
"swcFdsn6MWWINP+Nwmw4AEPPVJevUEvRQbqVMVoLlw=="
```

Definition at line 199 of file base64.c.

Referenced by base64_self_test().

7.123 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/bignum.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/bignum.h"
#include "xyssl/bn_mul.h"
#include <string.h>
#include <stdlib.h>
#include <stdarg.h>
```

Defines

- #define **ciL** ((int) sizeof(**t_int**))
- #define **biL** (ciL << 3)
- #define **biH** (ciL << 2)
- #define **BITS_TO_LIMBS**(i) (((i) + biL - 1) / biL)
- #define **CHARS_TO_LIMBS**(i) (((i) + ciL - 1) / ciL)

Functions

- void **mpi_init** (**mpi** *X,...)
Initialize one or more mpi.
- void **mpi_free** (**mpi** *X,...)
Unallocate one or more mpi.
- int **mpi_grow** (**mpi** *X, int nblimbs)
Enlarge to the specified number of limbs.
- int **mpi_copy** (**mpi** *X, **mpi** *Y)
Copy the contents of Y into X.
- void **mpi_swap** (**mpi** *X, **mpi** *Y)
Swap the contents of X and Y.
- int **mpi_lset** (**mpi** *X, int z)
Set value from integer.
- int **mpi_lsb** (**mpi** *X)
Return the number of least significant bits.
- int **mpi_msb** (**mpi** *X)
Return the number of most significant bits.
- int **mpi_size** (**mpi** *X)
Return the total size in bytes.

- static int `mpi_get_digit` (`t_int` *d, int radix, char c)
• int `mpi_read_string` (`mpi` *X, int radix, char *s)
Import from an ASCII string.

- static int `mpi_write_hlp` (`mpi` *X, int radix, char **p)
• int `mpi_write_string` (`mpi` *X, int radix, char *s, int *slen)
Export into an ASCII string.

- int `mpi_read_file` (`mpi` *X, int radix, FILE *fin)
Read X from an opened file.

- int `mpi_read_mystring` (`mpi` *X, int radix, char *s)
• int `mpi_write_file` (char *p, `mpi` *X, int radix, FILE *fout)
Write X into an opened file, or stdout.

- int `mpi_read_binary` (`mpi` *X, unsigned char *buf, int buflen)
Import X from unsigned binary data, big endian.

- int `mpi_write_binary` (`mpi` *X, unsigned char *buf, int buflen)
Export X into unsigned binary data, big endian.

- int `mpi_shift_l` (`mpi` *X, int count)
Left-shift: $X <<= count$.

- int `mpi_shift_r` (`mpi` *X, int count)
Right-shift: $X >>= count$.

- int `mpi_cmp_abs` (`mpi` *X, `mpi` *Y)
Compare unsigned values.

- int `mpi_cmp_mpi` (`mpi` *X, `mpi` *Y)
Compare signed values.

- int `mpi_cmp_int` (`mpi` *X, int z)
Compare signed values.

- int `mpi_add_abs` (`mpi` *X, `mpi` *A, `mpi` *B)
Unsigned addition: $X = |A| + |B|$.

- static void `mpi_sub_hlp` (int n, `t_int` *s, `t_int` *d)
• int `mpi_sub_abs` (`mpi` *X, `mpi` *A, `mpi` *B)
Unsigned subtraction: $X = |A| - |B|$.

- int `mpi_add_mpi` (`mpi` *X, `mpi` *A, `mpi` *B)
Signed addition: $X = A + B$.

- int `mpi_sub_mpi` (`mpi` *X, `mpi` *A, `mpi` *B)
Signed subtraction: $X = A - B$.

- int `mpi_add_int` (`mpi` *X, `mpi` *A, int b)

Signed addition: $X = A + b$.

- int `mpi_sub_int` (`mpi *X, mpi *A, int b`)

Signed subtraction: $X = A - b$.

- static void `mpi_mul_hlp` (`int i, t_int *s, t_int *d, t_int b`)

- int `mpi_mul_mpi` (`mpi *X, mpi *A, mpi *B`)

*Baseline multiplication: $X = A * B$.*

- int `mpi_mul_int` (`mpi *X, mpi *A, t_int b`)

*Baseline multiplication: $X = A * b$.*

- int `mpi_div_mpi` (`mpi *Q, mpi *R, mpi *A, mpi *B`)

*Division by mpi: $A = Q * B + R$.*

- int `mpi_div_int` (`mpi *Q, mpi *R, mpi *A, int b`)

*Division by int: $A = Q * b + R$.*

- int `mpi_mod_mpi` (`mpi *R, mpi *A, mpi *B`)

Modulo: $R = A \bmod B$.

- int `mpi_mod_int` (`t_int *r, mpi *A, int b`)

Modulo: $r = A \bmod b$.

- static void `mpi_montg_init` (`t_int *mm, mpi *N`)

- static void `mpi_montmul` (`mpi *A, mpi *B, mpi *N, t_int mm, mpi *T`)

- static void `mpi_montred` (`mpi *A, mpi *N, t_int mm, mpi *T`)

- int `mpi_exp_mod` (`mpi *X, mpi *A, mpi *E, mpi *N, mpi *_RR`)

Sliding-window exponentiation: $X = A^E \bmod N$.

- int `mpi_gcd` (`mpi *G, mpi *A, mpi *B`)

Greatest common divisor: $G = \gcd(A, B)$.

- int `mpi_inv_mod` (`mpi *X, mpi *A, mpi *N`)

Modular inverse: $X = A^{-1} \bmod N$.

- int `mpi_is_prime` (`mpi *X, int(*f_rng)(void *), void *p_rng`)

Miller-Rabin primality test.

- int `mpi_gen_prime` (`mpi *X, int nbits, int dh_flag, int(*f_rng)(void *), void *p_rng`)

Prime number generation.

- int `mpi_self_test` (`int verbose`)

Checkup routine.

Variables

- static const int `small_prime` []

7.123.1 Define Documentation

7.123.1.1 **#define biH (ciL << 2)**

Definition at line 41 of file bignum.c.

Referenced by mpi_div_mpi(), and mpi_mod_int().

7.123.1.2 **#define biL (ciL << 3)**

Definition at line 40 of file bignum.c.

Referenced by mpi_div_mpi(), mpi_exp_mod(), mpi_lsb(), mpi_montg_init(), mpi_msb(), mpi_shift_l(), and mpi_shift_r().

7.123.1.3 **#define BITS_TO_LIMBS(i) (((i) + biL - 1) / biL)**

Definition at line 46 of file bignum.c.

Referenced by mpi_gen_prime(), mpi_read_string(), and mpi_shift_l().

7.123.1.4 **#define CHARS_TO_LIMBS(i) (((i) + ciL - 1) / ciL)**

Definition at line 47 of file bignum.c.

Referenced by mpi_read_binary().

7.123.1.5 **#define ciL ((int) sizeof(t_int))**

Definition at line 39 of file bignum.c.

Referenced by mpi_copy(), mpi_free(), mpi_gen_prime(), mpi_grow(), mpi_is_prime(), mpi_lset(), mpi_montmul(), mpi_read_binary(), mpi_read_string(), mpi_write_binary(), and mpi_write_string().

7.123.2 Function Documentation

7.123.2.1 **int mpi_add_abs (mpi * X, mpi * A, mpi * B)**

Unsigned addition: $X = |A| + |B|$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 694 of file bignum.c.

References MPI_CHK, mpi_copy(), mpi_grow(), mpi::n, and mpi::p.

Referenced by mpi_add_mpi(), and mpi_sub_mpi().

7.123.2.2 **int mpi_add_int (mpi * X, mpi * A, int b)**

Signed addition: $X = A + b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 860 of file bignum.c.

References mpi_add_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_gen_prime(), and mpi_read_string().

7.123.2.3 int mpi_add_mpi (mpi * X, mpi * A, mpi * B)

Signed addition: $X = A + B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 798 of file bignum.c.

References mpi_add_abs(), MPI_CHK, mpi_cmp_abs(), mpi_sub_abs(), and mpi::s.

Referenced by mpi_add_int(), mpi_div_mpi(), mpi_inv_mod(), mpi_mod_mpi(), and rsa_private().

7.123.2.4 int mpi_cmp_abs (mpi * X, mpi * Y)

Compare unsigned values.

Returns

1 if $|X|$ is greater than $|Y|$, -1 if $|X|$ is lesser than $|Y|$ or 0 if $|X|$ is equal to $|Y|$

Definition at line 615 of file bignum.c.

References mpi::n, and mpi::p.

Referenced by mpi_add_mpi(), mpi_div_mpi(), mpi_montmul(), mpi_sub_abs(), and mpi_sub_mpi().

7.123.2.5 int mpi_cmp_int (mpi * X, int z)

Compare signed values.

Returns

1 if X is greater than z, -1 if X is lesser than z or 0 if X is equal to z

Definition at line 678 of file bignum.c.

References mpi_cmp_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_inv_mod(), mpi_is_prime(), mpi_mod_mpi(), mpi_write_hlp(), rsa_check_privkey(), and rsa_gen_key().

7.123.2.6 int mpi_cmp_mpi (mpi * X, mpi * Y)

Compare signed values.

Returns

1 if X is greater than Y, -1 if X is lesser than Y or 0 if X is equal to Y

Definition at line 645 of file bignum.c.

References mpi::n, mpi::p, and mpi::s.

Referenced by dhm_make_params(), dhm_make_public(), mpi_cmp_int(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_inv_mod(), mpi_is_prime(), mpi_mod_mpi(), mpi_self_test(), rsa_check_privkey(), rsa_gen_key(), rsa_private(), and rsa_public().

7.123.2.7 int mpi_copy (mpi * X, mpi * Y)

Copy the contents of Y into X.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 128 of file bignum.c.

References ciL, MPI_CHK, mpi_grow(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_add_abs(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_inv_mod(), mpi_is_prime(), mpi_mul_mpi(), mpi_sub_abs(), and mpi_write_string().

7.123.2.8 int mpi_div_int (mpi * Q, mpi * R, mpi * A, int b)

Division by int: A = Q * b + R.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if b == 0

Note

Either Q or R can be NULL.

Definition at line 1173 of file bignum.c.

References mpi_div_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), and mpi_write_hlp().

7.123.2.9 int mpi_div_mpi (mpi * Q, mpi * R, mpi * A, mpi * B)

Division by mpi: A = Q * B + R.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if B == 0

Note

Either Q or R can be NULL.

Definition at line 1008 of file bignum.c.

References biH, biL, mpi_add_mpi(), MPI_CHK, mpi_cmp_abs(), mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_msb(), mpi_mul_int(), mpi_shift_l(), mpi_shift_r(), mpi_sub_mpi(), mpi::n, mpi::p, mpi::s, and XYSSL_ERR_MPI_DIVISION_BY_ZERO.

Referenced by mpi_div_int(), mpi_mod_mpi(), and mpi_self_test().

7.123.2.10 int mpi_exp_mod (mpi * X, mpi * A, mpi * E, mpi * N, mpi * _RR)

Sliding-window exponentiation: $X = A^E \bmod N$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if N is negative or even

Note

_RR is used to avoid re-computing $R*R \bmod N$ across multiple calls, which speeds up things a bit. It can be set to NULL if the extra performance is unneeded.

Definition at line 1328 of file bignum.c.

References biL, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mod_mpi(), mpi_montg_init(), mpi_montmul(), mpi_montred(), mpi_msb(), mpi_shift_l(), mpi::n, mpi::p, and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_make_public(), main(), mpi_is_prime(), mpi_self_test(), rsa_private(), and rsa_public().

7.123.2.11 void mpi_free (mpi * X, ...)

Unallocate one or more mpi.

Definition at line 73 of file bignum.c.

References ciL, mpi::n, mpi::p, and mpi::s.

Referenced by dhm_free(), main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_is_prime(), mpi_mul_mpi(), mpi_read_string(), mpi_self_test(), mpi_sub_abs(), mpi_write_string(), rsa_check_privkey(), rsa_free(), rsa_gen_key(), rsa_private(), and rsa_public().

7.123.2.12 int mpi_gcd (mpi * G, mpi * A, mpi * B)

Greatest common divisor: $G = \gcd(A, B)$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 1507 of file bignum.c.

References MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_init(), mpi_lset(), mpi_mul_mpi(), mpi_shift_r(), mpi_sub_abs(), mpi::p, and mpi::s.

Referenced by mpi_inv_mod(), rsa_check_privkey(), and rsa_gen_key().

7.123.2.13 int mpi_gen_prime (mpi * X, int nb_{its}, int dh_flag, int(*)(void *)f_rng, void * p_rng)

Prime number generation.

Parameters

X destination mpi
nb_{its} required size of X in bits
dh_flag if 1, then (X-1)/2 will be prime too
f_rng RNG function
p_rng RNG parameter

Returns

0 if successful (probably prime), 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if nb_{its} is < 3

Definition at line 1778 of file bignum.c.

References BITS_TO_LIMBS, ciL, mpi_add_int(), MPI_CHK, mpi_free(), mpi_grow(), mpi_init(), mpi_is_prime(), mpi_lset(), mpi_msb(), mpi_shift_l(), mpi_shift_r(), mpi_sub_int(), mpi::p, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_NOT_ACCEPTABLE.

Referenced by main(), and rsa_gen_key().

7.123.2.14 static int mpi_get_digit (t_int * d, int radix, char c) [static]

Definition at line 226 of file bignum.c.

References XYSSL_ERR_MPI_INVALID_CHARACTER.

Referenced by mpi_read_file(), mpi_read_mystring(), and mpi_read_string().

7.123.2.15 int mpi_grow (mpi * X, int nblimbs)

Enlarge to the specified number of limbs.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 100 of file bignum.c.

References ciL, mpi::n, and mpi::p.

Referenced by dhm_make_params(), dhm_make_public(), mpi_add_abs(), mpi_copy(), mpi_div_mpi(), mpi_exp_mod(), mpi_gen_prime(), mpi_is_prime(), mpi_lset(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), and mpi_shift_l().

7.123.2.16 void mpi_init (mpi * X, ...)

Initialize one or more mpi.

Definition at line 52 of file bignum.c.

References mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_is_prime(), mpi_mul_mpi(), mpi_read_string(), mpi_self_test(), mpi_sub_abs(), mpi_write_string(), rsa_check_privkey(), rsa_gen_key(), rsa_private(), and rsa_public().

7.123.2.17 int mpi_inv_mod (mpi * X, mpi * A, mpi * N)

Modular inverse: $X = A^{-1} \bmod N$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if N is negative or nil XYSSL_ERR_MPI_NOT_ACCEPTABLE if A has no inverse mod N

Definition at line 1549 of file bignum.c.

References mpi_add_mpi(), MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_gcd(), mpi_init(), mpi_lset(), mpi_mod_mpi(), mpi_shift_r(), mpi_sub_mpi(), mpi::p, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_NOT_ACCEPTABLE.

Referenced by main(), mpi_self_test(), and rsa_gen_key().

7.123.2.18 int mpi_is_prime (mpi * X, int(*)(void *)f_rng, void * p_rng)

Miller-Rabin primality test.

Returns

0 if successful (probably prime), 1 if memory allocation failed, XYSSL_ERR_MPI_NOT_ACCEPTABLE if X is not prime

Definition at line 1667 of file bignum.c.

References ciL, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_exp_mod(), mpi_free(), mpi_grow(), mpi_init(), mpi_lsb(), mpi_mod_int(), mpi_mod_mpi(), mpi_msb(), mpi_mul_mpi(), mpi_shift_r(), mpi_sub_int(), mpi::n, mpi::p, R, mpi::s, small_prime, and XYSSL_ERR_MPI_NOT_ACCEPTABLE.

Referenced by main(), and mpi_gen_prime().

7.123.2.19 int mpi_lsb (mpi * X)

Return the number of least significant bits.

Definition at line 185 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by mpi_is_prime().

7.123.2.20 int mpi_lset (mpi * X, int z)

Set value from integer.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 167 of file bignum.c.

References ciL, MPI_CHK, mpi_grow(), mpi::n, mpi::p, and mpi::s.

Referenced by dhm_make_params(), dhm_make_public(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), and rsa_gen_key().

7.123.2.21 int mpi_mod_int (t_int * r, mpi * A, int b)

Modulo: $r = A \bmod b$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $b == 0$

Definition at line 1209 of file bignum.c.

References biH, mpi::n, mpi::p, and XYSSL_ERR_MPI_DIVISION_BY_ZERO.

Referenced by mpi_is_prime(), and mpi_write_hlp().

7.123.2.22 int mpi_mod_mpi (mpi * R, mpi * A, mpi * B)

Modulo: $R = A \bmod B$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $B == 0$

Definition at line 1189 of file bignum.c.

References mpi_add_mpi(), MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_div_mpi(), and mpi_sub_mpi().

Referenced by mpi_exp_mod(), mpi_inv_mod(), mpi_is_prime(), rsa_check_privkey(), rsa_gen_key(), and rsa_private().

7.123.2.23 static void mpi_montg_init (t_int * mm, mpi * N) [static]

Definition at line 1259 of file bignum.c.

References biL, and mpi::p.

Referenced by mpi_exp_mod().

7.123.2.24 static void mpi_montmul (mpi * A, mpi * B, mpi * N, t_int mm, mpi * T) [static]

Definition at line 1277 of file bignum.c.

References ciL, mpi_cmp_abs(), mpi_mul_hlp(), mpi_sub_hlp(), mpi::n, and mpi::p.

Referenced by mpi_exp_mod(), and mpi_montred().

7.123.2.25 static void mpi_montred (mpi *A, mpi *N, t_int mm, mpi *T) [static]

Definition at line 1314 of file bignum.c.

References mpi_montmul(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_exp_mod().

7.123.2.26 int mpi_msb (mpi *X)

Return the number of most significant bits.

Definition at line 200 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by d2i_RSA_PUBKEY(), main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gen_prime(), mpi_is_prime(), mpi_shift_l(), mpi_size(), mpi_write_string(), rsa_check_pubkey(), rsa_decryption(), rsa_encryption(), and rsa_gen_key().

7.123.2.27 static void mpi_mul_hlp (int i, t_int *s, t_int *d, t_int b) [static]

Definition at line 892 of file bignum.c.

References MULADDC_CORE, MULADDC_INIT, and MULADDC_STOP.

Referenced by mpi_montmul(), and mpi_mul_mpi().

7.123.2.28 int mpi_mul_int (mpi *X, mpi *A, t_int b)

Baseline multiplication: X = A * b.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 992 of file bignum.c.

References mpi_mul_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_div_mpi(), and mpi_read_string().

7.123.2.29 int mpi_mul_mpi (mpi *X, mpi *A, mpi *B)

Baseline multiplication: X = A * B.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 956 of file bignum.c.

References MPI_CHK, mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mul_hlp(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_gcd(), mpi_is_prime(), mpi_mul_int(), mpi_self_test(), rsa_check_privkey(), rsa_gen_key(), and rsa_private().

7.123.2.30 int mpi_read_binary (mpi * *X*, unsigned char * *buf*, int *buflen*)

Import X from unsigned binary data, big endian.

Parameters

X destination mpi
buf input buffer
buflen input buffer size

Returns

0 if successful, 1 if memory allocation failed

Definition at line 484 of file bignum.c.

References CHARS_TO_LIMBS, ciL, MPI_CHK, mpi_grow(), mpi_lset(), and mpi::p.

Referenced by asn1_get_mpi(), d2i_RSA_PUBKEY(), dhm_read_bignum(), dhm_read_public(), rsa_private(), and rsa_public().

7.123.2.31 int mpi_read_file (mpi * *X*, int *radix*, FILE * *fin*)

Read X from an opened file.

Parameters

X destination mpi
radix input numeric base
fin input file handle

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Definition at line 391 of file bignum.c.

References mpi_get_digit(), mpi_read_string(), and XYSSL_ERR_MPI_FILE_IO_ERROR.

Referenced by main().

7.123.2.32 int mpi_read_mystring (mpi * *X*, int *radix*, char * *s*)

Definition at line 418 of file bignum.c.

References mpi_get_digit(), and mpi_read_string().

Referenced by rsa_decryption(), and rsa_encryption().

7.123.2.33 int mpi_read_string (mpi * *X*, int *radix*, char * *s*)

Import from an ASCII string.

Parameters

X destination mpi

radix input numeric base
s null-terminated string buffer

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Definition at line 243 of file bignum.c.

References BITS_TO_LIMBS, ciL, mpi_add_int(), MPI_CHK, mpi_free(), mpi_get_digit(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mul_int(), mpi::p, mpi::s, and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by main(), mpi_read_file(), mpi_read_mystring(), mpi_self_test(), rsa_self_test(), and ssl_set_dh_param().

7.123.2.34 int mpi_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 1854 of file bignum.c.

References MPI_CHK, mpi_cmp_mpi(), mpi_div_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_inv_mod(), mpi_mul_mpi(), and mpi_read_string().

Referenced by main().

7.123.2.35 int mpi_shift_l (mpi * *X*, int *count*)

Left-shift: X <<= count.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 526 of file bignum.c.

References biL, BITS_TO_LIMBS, MPI_CHK, mpi_grow(), mpi_msб(), mpi::n, and mpi::p.

Referenced by mpi_div_mpi(), mpi_exp_mod(), and mpi_gen_prime().

7.123.2.36 int mpi_shift_r (mpi * *X*, int *count*)

Right-shift: X >>= count.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 575 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by dhm_make_params(), dhm_make_public(), mpi_div_mpi(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), and mpi_is_prime().

7.123.2.37 int mpi_size (mpi * X)

Return the total size in bytes.

Definition at line 218 of file bignum.c.

References mpi_msb().

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_read_params(), mpi_write_binary(), x509parse_crt(), and x509parse_key().

7.123.2.38 int mpi_sub_abs (mpi * X, mpi * A, mpi * B)

Unsigned subtraction: $X = |A| - |B|$.

Returns

0 if successful, XYSSL_ERR_MPI_NEGATIVE_VALUE if B is greater than A

Definition at line 761 of file bignum.c.

References MPI_CHK, mpi_cmp_abs(), mpi_copy(), mpi_free(), mpi_init(), mpi_sub_hlp(), mpi::n, mpi::p, and XYSSL_ERR_MPI_NEGATIVE_VALUE.

Referenced by mpi_add_mpi(), mpi_gcd(), and mpi_sub_mpi().

7.123.2.39 static void mpi_sub_hlp (int n, t_int * s, t_int * d) [static]

Definition at line 740 of file bignum.c.

Referenced by mpi_montmul(), and mpi_sub_abs().

7.123.2.40 int mpi_sub_int (mpi * X, mpi * A, int b)

Signed subtraction: $X = A - b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 876 of file bignum.c.

References mpi_sub_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_gen_prime(), mpi_is_prime(), rsa_check_privkey(), and rsa_gen_key().

7.123.2.41 int mpi_sub_mpi (mpi * X, mpi * A, mpi * B)

Signed subtraction: $X = A - B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 829 of file bignum.c.

References mpi_add_abs(), MPI_CHK, mpi_cmp_abs(), mpi_sub_abs(), and mpi::s.

Referenced by mpi_div_mpi(), mpi_inv_mod(), mpi_mod_mpi(), mpi_sub_int(), and rsa_private().

7.123.2.42 void mpi_swap (mpi * X, mpi * Y)

Swap the contents of X and Y.

Definition at line 155 of file bignum.c.

Referenced by rsa_gen_key().

7.123.2.43 int mpi_write_binary (mpi * X, unsigned char * buf, int buflen)

Export X into unsigned binary data, big endian.

Parameters

X source mpi

buf output buffer

buflen output buffer size

Returns

0 if successful, XYSSL_ERR_MPI_BUFFER_TOO_SMALL if buf isn't large enough

Note

Call this function with *buflen = 0 to obtain the minimum required buffer size in *buflen.

Definition at line 506 of file bignum.c.

References ciL, mpi_size(), mpi::p, and XYSSL_ERR_MPI_BUFFER_TOO_SMALL.

Referenced by dhm_calc_secret(), dhm_make_public(), rsa_private(), and rsa_public().

7.123.2.44 int mpi_write_file (char * p, mpi * X, int radix, FILE * fout)

Write X into an opened file, or stdout.

Parameters

p prefix, can be NULL

X source mpi

radix output numeric base

fout output file handle

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Note

Set fout == NULL to print X on the console.

Definition at line 447 of file bignum.c.

References MPI_CHK, mpi_write_string(), and XYSSL_ERR_MPI_FILE_IO_ERROR.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

7.123.2.45 static int mpi_write_hlp (mpi **X*, int *radix*, char *p*) [static]**

Definition at line 301 of file bignum.c.

References MPI_CHK, mpi_cmp_int(), mpi_div_int(), mpi_mod_int(), and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by mpi_write_string().

7.123.2.46 int mpi_write_string (mpi **X*, int *radix*, char **s*, int **slen*)

Export into an ASCII string.

Parameters

X source mpi
radix output numeric base
s string buffer
slen string buffer size

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Note

Call this function with *slen = 0 to obtain the minimum required buffer size in *slen.

Definition at line 328 of file bignum.c.

References ciL, MPI_CHK, mpi_copy(), mpi_free(), mpi_init(), mpi_msbt(), mpi_write_hlp(), mpi::n, mpi::p, mpi::s, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_BUFFER_TOO_SMALL.

Referenced by mpi_write_file().

7.123.3 Variable Documentation**7.123.3.1 const int small_prime[] [static]****Initial value:**

```
{
    3,      5,      7,     11,     13,     17,     19,     23,
    29,     31,     37,     41,     43,     47,     53,     59,
    61,     67,     71,     73,     79,     83,     89,     97,
   101,    103,    107,    109,    113,    127,    131,    137,
   139,    149,    151,    157,    163,    167,    173,    179,
   181,    191,    193,    197,    199,    211,    223,    227,
   229,    233,    239,    241,    251,    257,    263,    269,
   271,    277,    281,    283,    293,    307,    311,    313,
   317,    331,    337,    347,    349,    353,    359,    367,
   373,    379,    383,    389,    397,    401,    409,    419,
   421,    431,    433,    439,    443,    449,    457,    461,
   463,    467,    479,    487,    491,    499,    503,    509,
   521,    523,    541,    547,    557,    563,    569,    571,
   577,    587,    593,    599,    601,    607,    613,    617,
```

```
619, 631, 641, 643, 647, 653, 659, 661,
673, 677, 683, 691, 701, 709, 719, 727,
733, 739, 743, 751, 757, 761, 769, 773,
787, 797, 809, 811, 821, 823, 827, 829,
839, 853, 857, 859, 863, 877, 881, 883,
887, 907, 911, 919, 929, 937, 941, 947,
953, 967, 971, 977, 983, 991, 997, -103
}
```

Definition at line 1639 of file bignum.c.

Referenced by mpi_is_prime().

7.124 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c File Reference

```
#include "xyssl/config.h"
```

Variables

- char [test_ca_crt](#) []
- char [test_ca_key](#) []
- char [test_ca_pwd](#) [] = "test"
- char [test_srv_crt](#) []
- char [test_srv_key](#) []
- char [test_cli_crt](#) []
- char [test_cli_key](#) []
- char [xyssl_ca_crt](#) []

7.124.1 Variable Documentation

7.124.1.1 char test_ca_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIIDpTCCAO2gAwIBAgIBADANBgkqhkiG9w0BAQUFADBFMQswCQYDVQQGEwJGUjEO\r\n"
"MAwGA1UEBxMFUGFyaXMxDjAMBgNVBAoTBVh5U1NMMRyWfAYDVQQDEw1YeVNTTCBU\r\n"
"ZXN0IENBMB4XDTA3MDcwNzA1MDAxOFoXDTE3MDcwNzA1MDAxOFowRTelMAkGA1UE\r\n"
"BhMCRIIxDjAMBgNVBAcTBVBhcm1zMQ4wDAYDVQQKEwVYeVNTTDEwMBQGA1UEAxMN\r\n"
"WH1TU0wgVGVzdCBDQTCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAM+k\r\n"
"gt70fIP1YqmvXr+9uPmWoN405eoSzxdIRLLChqL4V/Ts0E/H+JNFHS4DH1AgxrJu\r\n"
"+ZIadvSJUHkI6e1iMkAh5SU1DqaF3jrrFdJCooM6a077M4CRkE1tdAeZDf+BYp0q\r\n"
"BeMU9Y2+j7ibsQaPAizunbXlf4QdteExCwhYRJ8OVXSEaSNT339gJzTD6kOhES3b\r\n"
"LEN3qbx61qFaJ5MLHTix5uNvc2rvbOizV5oLhJNqm52AKOp11tv6WTi18loagvAc\r\n"
"jlhEZRNb9e15SL6Jai/uFcqXKzfxNKW3FYQPQHFGobmiMfGt1lUSBJ3F2mrqEC7gC\r\n"
"wHy/FDvaI64/k5LZAFkCaWEAAaOBnzCBnDAMBgNVHRMEBTADAQH/MB0GA1UdDgQW\r\n"
"BB87h+Y6Porg+SkfV7DxKTMdkyZBtBqNVHSMEZjbkgBS87h+Y6Porg+SkfV7D\r\n"
"dXKTMdkyZ6FJpEcwRTELMAkGA1UEBhMCRIIxDjAMBgNVBAcTBVBhcm1zMQ4wDAYD\r\n"
"VQQKEwVYeVNTTDEwMBQGA1UEAxMNWh1TU0wgVGVzdCBDQYIBADANBgkqhkiG9w0B\r\n"
"AQUFAAOCQAIEAIHdoh0NCg6KAhwdSmfEgSbKUI8/Zr/d56uw42HO0sj/uKPQzUco\r\n"
"3Mx2BYElmltg7q5OhrkB7J4ZB78EtNZM84nV+y6od3YpR0Z9VUxCx7948MozYRy\r\n"
"TKF5x/1KHRx1PJJKfEO4clKdWTFAtWtGhewXrHJQ8C+ENh2Up2wTVh3Z+pEzuZNv3\r\n"
"u/JYU1H+vkt311WCy/9mxUnu+anW1DzxPWnjy4lx6Mi0BD2qfKBWLjVS+7v6ALcj\r\n"
"S2oRWWr4LUvXT7z9BBAvw2eJQD+a4uAya6EURG7AsAvr5MnWn/r0wLwmBJ6fB1Yp\r\n"
"F1kOmamOFvtLMf74rLX+LGKeJ/nwuI5FQ==\r\n"
"-----END CERTIFICATE-----\r\n"
```

Definition at line 25 of file certs.c.

Referenced by main(), ssl_test(), and x509_self_test().

7.124.1.2 char test_ca_key[]

Definition at line 49 of file certs.c.

Referenced by x509_self_test().

7.124.1.3 char test_ca_pwd[] = "test"

Definition at line 81 of file certs.c.

Referenced by x509_self_test().

7.124.1.4 char test_cli_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIIDPTCCAiWgAwIBAgIBATANBgkqhkiG9w0BAQUFADBFMQswCQYDVQQGEwJGUjEo\r\n"
"MAwGA1UEBxMFUGFyaXMxDjAMBgNVBAoTBVh5U1NMMRyMFowMDELMAkGA1UE\r\n"
"ZXN0IENBMB4XDTA3MDcwNzA1MDEyMFowMDELMAkGA1UE\r\n"
"BhMCRLIxjdjAMBgNVBAoTBVh5U1NMMREwDwYDVQQDEwhKb2UgVXN1cjjCASiWQYJ\r\n"
"KoZIhvcaNAQEBBQADggEPADCCAQoCggEBAKZkg8AN16kGmLGqKc6KUhb91sZwb2+K\r\n"
"jbw83Qb0KuvPVnu3MzEcxFvOZ83g0PL/z8ob5PKr8HP6bVYzhSD65imcCDEEVPk2\r\n"
"9r0XGTggGjB601Fd8aTShUWE4NLrKw6YNXTXgTNdvhHNxXwqmdNVLkmZjj3ZwYUc\r\n"
"cEE8eE5jHs8cMDXJLMCwgKIM7Sax220hSHQHKwifVO4/Fdw5G+Suys8PhMX2jDXM\r\n"
"ICFwq81d+bZGoNUTgp48FWhAmfJyTEAh9LC46KkqGSDRIzx7/4cPB6QqrpzJN0o\r\n"
"Kr8kh7vdRDTFdM023D4C510Bw/2aC76DhEJpB2bGA4iIszJs+F/PIL8CAwEAaNN\r\n"
"MEswCQYDVROTBAlwADAdBgNVHQ4EFgQUiWX1IvjRdYgt0zz5Sq16x01k0o4wHwYD\r\n"
"VR0jBBgwraUvO4fmOj6K4PkpH1ew3VykzHZMmcwDQYJKoZIhvcaNAQEFBQADggEB\r\n"
"AGdqD7VThJmC+oeMUhk2TQX2wZNU+GSc+RLjtlenckny95Kn1jGvMtCznyLks5D\r\n"
"faJLKfr1No8pk5gRdscqgyIuQx5WnHn4QBZmMsmtDICxzRQaxuPFHbS4aLx1deL\r\n"
"yOWm5Z4qkMhpCKVA8b1ySeKksGdv47fF9ZkoQ8nkh7Z4eY4/5TwqTY72ww5g4NL\r\n"
"6DZtWpcpGbX99NRaNVzcq9D+ElxkgHnH4YWafOKBclSgqrutbRLi2uZx/QpvuF+i\r\n"
"sUbe+HFPMWu51Bv/oOhQkz0VD+HusYtXWS2lG88cT40aNly2CkYUugdTR/b9Uea\r\n"
"p/i862sL/1o40qlQ0xv5N7U=\r\n"
"-----END CERTIFICATE-----\r\n"
```

Definition at line 134 of file certs.c.

Referenced by main(), and x509_self_test().

7.124.1.5 char test_cli_key[]

Initial value:

```
"-----BEGIN RSA PRIVATE KEY-----\r\n"
"MIIEowIBAAKCAQEApnSDwA2XqQaYsaopzopQdv0ixnBvb4qMHDzdBvQq689We7cz\r\n"
"MRxcW85nzeDQ8v/Pyhvk8qvwc/ptVjOGwPrmKzwIMQRu+Tb2vRcZOCaAMhrTUV3x\r\n"
"pNKFRYTg0usrDpg1dNeBM12+Ec3FFCqZ01UuSzmoPdnBhRxwQTx4TmMezxwNcks\r\n"
"wLCAogztJrHbY6FIdAcrcJ9U7j8V3Dkb5K7Kzw+ExfaMncwgIXCryV35tkag1S2C\r\n"
"njwVaAx8nJMroeH0sLjogSoZINEjPHv/hw8HpCqunMK3SgqvyQfu91ENMUOY7bc\r\n"
"PgLmXQHD/ZoLvoOEQmkHzsYDiiizMmz4X88gvwIDAQABoIBAEOnBkJdVN+j4ax\r\n"
"1DjeWZKqxVkmAUXDBdyDrCjxRoWY2gz7Yw1ALUMUbEv0f05v1zVrbkUKKZeVBxI\r\n"
"QA9zRw28H8A6tfvolHgRICx4dxMh3ePC+DVDJ6zglvKV2ipAwBufKYIrX0r4Io2\r\n"
"ZqUrNg9CeEY1nkHWceaN12rhYw082pgHxnB1p5pI42pY7lzyLgsddf5n+M5UBOJI\r\n"
"gsNCkvbdGdv7WQPVFTRD1RgEncJ3rI8oPSK6MOUWJw3rh2hbkx+ex8NPvEKbzEXiU\r\n"
"p5j1AlbHIWP5sYBbA1YviFtryAV4fyfLcWPfoqa330ozofjlwoj0Aixz+6rerLjZ\r\n"
"cpTSrAECgYEAA2oCffUo6HH3Lq9oeWhFCoOyG3YjZmFrJaJwHnvroX9/pXHqYKog\r\n"
"TehcjUJBtFZw0k1cetYbZCFqT8v9nf0uPlgaiVGctXf1MSbFXDUFKkYBiFwzdWMT\r\n"
"Ysmvhff82jMWZ8ecsXTyDRl858SR5WPZ52qEsCc5X2un7QENm6FtVT8CgYEAvvKS\r\n"
"zQNzuoJtqZX7Aa1mK3JM8FdAm+Qm5LNmcvbhbKwI8HKMS1VMuqaR0XdaX/iMXAx\r\n"
"P1VhSsmoSDbsMpxBEZIptpCen/GcqctITxANTakrBHxqb2aQ5EEu7SzgfHZWse3\r\n"
"vQEYfcFTB1P1dcZUDz4/w7WmyivpYtCWoAh1IECgYEAOUYZ+1UJfVpapRj+swMP\r\n"
"DrQbo7i7t71UaFYLNpFX20PLTWC5txqn1OruTu5VHDqE+5hnedNUUTT3uOg4B2q\r\n"
"mdmmaNjh2M6wz0e0BVFexhNQynqMaqTe32IOM8DFs3L0xacgg7JfVn6P7CeQGOVe\r\n"
"wc96kICw6ZxhtJSqpOGipt8CgYBI/0Fw+IXxJK4nNSpe+u4vCYP5mUI9hKEFYCbt\r\n"
"qKwvyAUknn/zgiIQ+r/iSERFMPmlwXjvWi0gL/qPb+Fp4hCLX8u2zNhY08Px4Gin\r\n"
```

```
"Ej+pANtWxq+kHyfKEI5dyRwV/snfv1qwjy404JsSF3VMhIMdYDPzbb72Qnni5w51\r\n"
"j00eAQKBgBqt9jJMd1JdpemC2dm0BuuDIz2h3/MH+CMjfaDLenVpKykn17B6N92h\r\n"
"klMesqK3RQzDGwauDw431LQw0R69onn9fCM3wJw2yEC6wC9sF8I8hsNZbt64yZhZ\r\n"
"4Bi2YRTiHhpEuBqKlhHLDFhneo3SMYh8PU/PDQQcyWGHHUi9z1RE\r\n"
"----END RSA PRIVATE KEY----\r\n"
```

Definition at line 156 of file certs.c.

Referenced by main().

7.124.1.6 char test_srv_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIIDPjCCAigAwIBAgIBAjANBgkqhkiG9w0BAQUFADBFMqswCQYDVQQGEwJGUjEO\r\n"
"MAwGA1UEBxaMFUGFyaXMxDjAMBgNVBAoTBVh5U1NMMRwFAYDVQQDEw1YeVNNTCBU\r\n"
"ZXN0IENBM4XDTA3MDcwNzA1MDEyOVoXDTA4MDcwNjA1MDEyOVowMTELMAkGA1UE\r\n"
"BhMCR1IxjdjAMBgNVBAoTBVh5U1NMMRwFAYDVQQDEw1sb2Nhbgvc3QwggEiMA0G\r\n"
"CSqGSiB3DQEBAQUAA4IBDwAwggEKAoIBAQc40PdcGTgmHkt6noXdfkjVuymjiNYB\r\n"
" gjtil7uA1Ke3tXStacEecQek/OJxYqYr7ffcWals29LL6HbKpi0xLZKbbD9AcKdh\r\n"
"1Z/SvH1yQPIlJdYb9DMw+kZds5myXUjzn7Aem1YjoxMUAMyc34i2900X2pL0v2\r\n"
"SfCeJ9Ym4MonZxY1217+dX9zbkgIgrT6uY2IYK4boDwxhTcyT8i/NPsVs1MwtWPM\r\n"
"rnQM+rxbgS98sUzcZE70Pe1T1V9Iy8j/8d20iFo+qTyMu/6UpM2s3gdkQkMzx+Sm\r\n"
"4QitRUjzmExEuePRUjEgHiV7vz069xuVBzrks36w5BXiVAhLke/OTKVPAgMBAAGj\r\n"
"TTBLMAK1UdEwQCMAAwHQYDVR0OBYEFEKoYCTx64SDdPySGW1/tzD7/WMSMB8G\r\n"
"A1UdIwQYMBaAFLzuH5jo+iu5K9RsN1cpMx2TJnMA0GCSqGSiB3DQEBBQUAA4IB\r\n"
"AQBelJv5t+suaqy5Lo5bjNeHjNZfgg8EigDQ7NqaosvlQZAsh2N34Gg5YdkGyVdg\r\n"
"s32I/K5aaowyUbG9qVXQxCM2T95qBqyK56h9yJoZKWQD9H//+zB8kCK/16WvRfv3\r\n"
"VA7eSR19qOFW1He+1qGh2YhxedeUfyi+fm4D36dGxqC2A34tZj0QPHKtIeqM0kJy\r\n"
"zzL65T1bJQKkyTurHofFv0jW9ZFG2wkGysVgCY5fjuLI1do/sWUaXd2987iNFa+K\r\n"
"FrHsTi6urSfZuGlZNxDXDHEE7Q2snAvvev+KR7DD9X4DJGcPX9gA4CGJj+9ZzyAA\r\n"
"ZTGpOzk1hIH44RFs21JMZR1E\r\n"
"-----END CERTIFICATE-----\r\n"
```

Definition at line 83 of file certs.c.

Referenced by main(), and ssl_test().

7.124.1.7 char test_srv_key[]

Initial value:

```
"-----BEGIN RSA PRIVATE KEY-----\r\n"
"MIIEowIBAAKCAQEAvNDw3Bk4Jh5Lep6Fw35I1bspo4jWAYI7Yi+7gNSnt7V0rWnB\r\n"
"HnEHpPzicWKmK+333FmpUtvSy+h2yqYtMs2SgWw/QApA4dWf0rx5ckDyCyXWG/Qz\r\n"
"MPpM2XbOzs1I85+wHptWI6MTGVADMn+ItvdNF9qs9L9knwniifWJuDDp2cWJdte\r\n"
"/n/VW5ICIK0+rmNiGCuG6A8MW03Mk/IvtZ7FbIjMLVjzK50DK/124EvflFM3GRO\r\n"
"9D3tU5VfSMvI//HdjohaPqk8jLv+lKTNrN4HZEJDM8fkpuEIrUVI85hF31Hj0VIx\r\n"
"IByL+7890Vcb1Qc65LN+sOQV4lQIS5Hvzky1TwIDAQABoIBABeah8h0aBlmMRmd\r\n"
"+VN4Y3D4kF7UcRCMQ21Mz1Oq1Si/QgGLyibLK0DFE16LzNE7eTzPnRjh/1AQhmtn\r\n"
"QcpQGa/x1TomlRbCo8DUVWZkKQWHdYroa01MDliPtdimzhEepE2M1T5EjmLzY3S+\r\n"
"qVGe7UMsJjFwGJAezyXteANQK+2YSt+CjPIqIHch1KexUnvdN9++1oEx6AbuZ8T\r\n"
"4avhFYZQP15tZNGsk2LfQ1YS/NfbowkCsd0/TVubJBmDGUML/E5MbxjxLzlaNB2M\r\n"
"V59cBNgsgA35CODAU4xOyoSfZGqG1Rb9qQrv1E6Jz56dG8SsKF3HqnDjxiPOVBN\r\n"
"FBnVJ+ECgYEA29MhAsKM4XqBUKp6pIMFTgm/s1E5vxig70vqIiL+guvBhhQ7zs1\r\n"
"8UMTNXZoMELNoB/ev9fN0Cjc1Vr46b/x/yDw7wMb96i+vzENOzu4RHwi3OWpCPbp\r\n"
"qbKEi3hzN8M+BulPX8CDQx3aLRrfxw51j5EuA0NeybngbItgxTi0u6kCgYEAlzr0\r\n"
"6P5YdOhYHtSWD1keD49MAPcVuzaHnsHZVahUqu3Rwiy9LRaJLZfr7fQDb9DYJbZp\r\n"
"sxTRLG6LSAcS7mw+m+GvNqGt/9pSqbtW+L/VwVWSyF+YYk1xZUD3UAyrdVcDEC\r\n"
"a5S+jad4Csi/1Vht5ulWickWL1fJvadn5ubKNDCGyA+71xVGPP+lsFgTiytfrc8\r\n"
```

```
"5n2r14MxinJ9+w0I+EbzCKNMYGvTgiU4dJasSMEdiBKs1FMGo7dF8F0BLHF1IsIa\r\n"
"5Ah2tXItXn9154o90iTQXMmK6qmRaneM6fhOoeaCwYAhgGxYIpqx/Xr4TOhiag46\r\n"
"jMMaphAeOvw4t1K2RDzi0QKBgQCyPCCU0gxuw/o1jda2CxbZy9EmU/erEX09+0n+\r\n"
"TofQpSEPq/zWaxAFYDfsdZ0ZktoeHmalbNdL3i6A3DWAM3YSQzQMRPmzOWnqXx\r\n"
"cgoCBmlvzkzaeLj05phMoLQHJmmafvuCG6uxov3F8Hi3LyHUF2c8k0nL6ucmJ3vj\r\n"
"uzu4AQKBgBSASMAJS63M9UJB1Eazy2v2NWW04CmzNxUfWrHuKpd/C2ik4QKu0sRO\r\n"
"r9KnkDgxxEhjDm71Xh1W12PU42yORst5I3Eaa1Cfi4KPFn/ozt+iNBYrzd8Tyvnb\r\n"
"qkdEC10+G2Fo/ER4NRcv7a24WNesOMGzGRqw5cnSJrbZLYMaIyK\r\n"
"-----END RSA PRIVATE KEY-----\r\n"
```

Definition at line 105 of file certs.c.

Referenced by main(), and ssl_test().

7.124.1.8 char xyssl_ca_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIID4DCCAsigAwIBAgIJAOLw9BMV1jxMMA0GCSqGSIb3DQEBCUAMFMxCzAxBgNV\r\n"
"BAYTAKZSMQ4wDAYDVQQIEwVQYXJpczEOMAwGA1UEChMFWh1TU0wxJDAiBgNVBAMT\r\n"
"G1h5U1NMIE1lcRpZmljYXR1IEF1dGhvcm1oETAEFw0wNjEwMzEyMjU5MjRaFw0x\r\n"
"NjEwMzEyMjU5MjRaMFmxCzAJBgNVBAYTAKZSMQ4wDAYDVQQIEwVQYXJpczEOMAwG\r\n"
"A1UEChMFWh1TU0wxJDAiBgNVBAMTG1h5U1NMIE1lcRpZmljYXR1IEF1dGhvcm1o\r\n"
"eTCCASIwDQYJKoZIhvcNAQEBQADggEPADCCAQoCggEBAKnprf1RQ7IYPI3FmI/h\r\n"
"f2EJGfaIP+Jt551VZWRrs3A56Nn4KS57zTAKZUA7YGBLw1AznfaphJ7SvENALeZR\r\n"
"/J0c/n9jwMpfxReQL7RVpgg/z1R+t2DUi3DAwigPZiHHCJSBCT3vpMc6uH0eV2d\r\n"
"itqjjUnJG5F8Zg9/gX4UMRAdlwGWqxvs+jc9i0XFKEzga8+rONe6WvKyBM4e20I\r\n"
"HC04BP92d6sm4qLgyR4oXUbBz6NfdWX8ZdTvxXuRaK9qMy1327cCT48sis9F6/eK\r\n"
"QAx0VHlqGTtxDYjhJPsMLNejuyUDvsac8TMCSpFTXpMTUvJdmxsF11ZwmIo51Y5\r\n"
"zh0CAwEAaaOBtjcBszaDbgNVHQ4EFgQUBlVzoNjrkkgPkJ8xjuFvVP2E4GswgYMG\r\n"
"A1UdIwR8MHqAFAZVc6DSa5JID5CfMY7hb1T9hOBroVekVTBTMQuwCQYDVQQGEwJG\r\n"
"UjEOMAwGA1UECBMFUGFyaXMxDjAMBgNVBAoTBVh5U1NMMSQwIgYDVQQDExtYeVNT\r\n"
"TCBDZXJ0aWZpY2F0ZSBdXRob3JpdHmCCQDi8PQTfdY8TDAMBgnVHRMEBTADAQH/\r\n"
"MA0GCSqGSIb3DQEBCUAA4IBAQCGD65b215BASFsPvlrcRnLZu/99eWTVAJwJbbD\r\n"
"VhPAQiETOW4U/85EDK7uoFo/SEjyMB/m4T20A8FIDaK7jbPo/1gtbuQjGMRI7h+z\r\n"
"F2iGuNhZ6Td26Uzqclt3oiFTsvDRoZ/9kqkEy7Lrs7FBzOmfvTvrqvADF7cLMa2D\r\n"
"ri/otDpzPr4XoDnw4C+4bQC/Gr3Uder4VAeTOJtKdGqfyLlvPwPSPVBDuVLUybKi\r\n"
"8cMAT6p9IG1e12u6vFqcBT/I67Q0bGU6gzVVz9ZVULXOYZMjjLafVXC1gesUH2WT\r\n"
"qTEAnEBkSRkfAi+RezoEFAbmEl3fPt09dwSPku3x7cb3zaJ\r\n"
"-----END CERTIFICATE-----\r\n"
```

Definition at line 185 of file certs.c.

Referenced by main().

7.125 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/debug.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/debug.h"
#include <stdarg.h>
#include <stdlib.h>
```

Functions

- `char * debug_fmt (const char *format,...)`
- `void debug_print_msg (ssl_context *ssl, int level, char *file, int line, char *text)`
- `void debug_print_ret (ssl_context *ssl, int level, char *file, int line, char *text, int ret)`
- `void debug_print_buf (ssl_context *ssl, int level, char *file, int line, char *text, unsigned char *buf, int len)`
- `void debug_print_mpi (ssl_context *ssl, int level, char *file, int line, char *text, mpi *X)`
- `void debug_print_crt (ssl_context *ssl, int level, char *file, int line, char *text, x509_cert *crt)`

7.125.1 Function Documentation

7.125.1.1 `char* debug_fmt (const char *format, ...)`

Definition at line 38 of file debug.c.

References vsnprintf.

7.125.1.2 `void debug_print_buf (ssl_context * ssl, int level, char *file, int line, char * text, unsigned char * buf, int len)`

Definition at line 82 of file debug.c.

References _ssl_context::f_dbg, and _ssl_context::p_dbg.

7.125.1.3 `void debug_print_crt (ssl_context * ssl, int level, char *file, int line, char * text, x509_cert * crt)`

Definition at line 169 of file debug.c.

References debug_print_mpi(), rsa_context::E, _ssl_context::f_dbg, rsa_context::N, _x509_cert::next, _ssl_context::p_dbg, _x509_cert::rsa, and x509parse_cert_info().

7.125.1.4 `void debug_print_mpi (ssl_context * ssl, int level, char *file, int line, char * text, mpi * X)`

Definition at line 124 of file debug.c.

References _ssl_context::f_dbg, mpi::n, mpi::p, and _ssl_context::p_dbg.

Referenced by debug_print_crt().

7.125.1.5 void debug_print_msg (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*)

Definition at line 52 of file debug.c.

References _ssl_context::f_dbg, and _ssl_context::p_dbg.

7.125.1.6 void debug_print_ret (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*, int *ret*)

Definition at line 66 of file debug.c.

References _ssl_context::f_dbg, and _ssl_context::p_dbg.

7.126 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/des.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/des.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define GET ULONG_BE(n, b, i)
- #define PUT ULONG_BE(n, b, i)
- #define DES_IP(X, Y)
- #define DES_FP(X, Y)
- #define DES_ROUND(X, Y)
- #define SWAP(a, b) { unsigned long t = a; a = b; b = t; t = 0; }

Functions

- static void **des_setkey** (unsigned long SK[32], unsigned char key[8])

DES key schedule (56-bit, encryption).
- void **des_setkey_enc** (**des_context** *ctx, unsigned char key[8])

DES key schedule (56-bit, encryption).
- void **des_setkey_dec** (**des_context** *ctx, unsigned char key[8])

DES key schedule (56-bit, decryption).
- static void **des3_set2key** (unsigned long esk[96], unsigned long dsk[96], unsigned char key[16])

• void **des3_set2key_enc** (**des3_context** *ctx, unsigned char key[16])

Triple-DES key schedule (112-bit, encryption).
- void **des3_set2key_dec** (**des3_context** *ctx, unsigned char key[16])

Triple-DES key schedule (112-bit, decryption).
- static void **des3_set3key** (unsigned long esk[96], unsigned long dsk[96], unsigned char key[24])

• void **des3_set3key_enc** (**des3_context** *ctx, unsigned char key[24])

Triple-DES key schedule (168-bit, encryption).
- void **des3_set3key_dec** (**des3_context** *ctx, unsigned char key[24])

Triple-DES key schedule (168-bit, decryption).
- void **des_crypt_ecb** (**des_context** *ctx, unsigned char input[8], unsigned char output[8])

DES-ECB block encryption/decryption.
- void **des_crypt_cbc** (**des_context** *ctx, int mode, int length, unsigned char iv[8], unsigned char *input, unsigned char *output)

DES-CBC buffer encryption/decryption.

- void [des3_crypt_ecb](#) (des3_context *ctx, unsigned char input[8], unsigned char output[8])
3DES-ECB block encryption/decryption
- void [des3_crypt_cbc](#) (des3_context *ctx, int mode, int length, unsigned char iv[8], unsigned char *input, unsigned char *output)
3DES-CBC buffer encryption/decryption
- int [des_self_test](#) (int verbose)

Variables

- static const unsigned long [SB1](#) [64]
- static const unsigned long [SB2](#) [64]
- static const unsigned long [SB3](#) [64]
- static const unsigned long [SB4](#) [64]
- static const unsigned long [SB5](#) [64]
- static const unsigned long [SB6](#) [64]
- static const unsigned long [SB7](#) [64]
- static const unsigned long [SB8](#) [64]
- static const unsigned long [LHs](#) [16]
- static const unsigned long [RHs](#) [16]
- static const unsigned char [des3_test_keys](#) [24]
- static const unsigned char [des3_test_iv](#) [8]
- static const unsigned char [des3_test_buf](#) [8]
- static const unsigned char [des3_test_ecb_dec](#) [3][8]
- static const unsigned char [des3_test_ecb_enc](#) [3][8]
- static const unsigned char [des3_test_cbc_dec](#) [3][8]
- static const unsigned char [des3_test_cbc_enc](#) [3][8]

7.126.1 Define Documentation

7.126.1.1 #define DES_FP(X, Y)

Value:

```
{
    X = ((X << 31) | (X >> 1)) & 0xFFFFFFFF;
    T = (X ^ Y) & 0xAAAAAAA; X ^= T; Y ^= T;
    Y = ((Y << 31) | (Y >> 1)) & 0xFFFFFFFF;
    T = ((Y >> 8) ^ X) & 0x00FF00FF; X ^= T; Y ^= (T << 8);
    T = ((Y >> 2) ^ X) & 0x33333333; X ^= T; Y ^= (T << 2);
    T = ((X >> 16) ^ Y) & 0x0000FFFF; Y ^= T; X ^= (T << 16);
    T = ((X >> 4) ^ Y) & 0x0F0F0F0F; Y ^= T; X ^= (T << 4);
}
```

Definition at line 257 of file des.c.

Referenced by [des3_crypt_ecb\(\)](#), and [des_crypt_ecb\(\)](#).

7.126.1.2 #define DES_IP(X, Y)**Value:**

```
{
    T = ((X >> 4) ^ Y) & 0x0F0F0F0F; Y ^= T; X ^= (T << 4); \
    T = ((X >> 16) ^ Y) & 0x0000FFFF; Y ^= T; X ^= (T << 16); \
    T = ((Y >> 2) ^ X) & 0x33333333; X ^= T; Y ^= (T << 2); \
    T = ((Y >> 8) ^ X) & 0x00FF00FF; X ^= T; Y ^= (T << 8); \
    Y = ((Y << 1) | (Y >> 31)) & 0xFFFFFFFF;
    T = (X ^ Y) & 0xAAAAAAA; Y ^= T; X ^= T;
    X = ((X << 1) | (X >> 31)) & 0xFFFFFFFF;
}
```

Definition at line 243 of file des.c.

Referenced by des3_crypt_ecb(), and des_crypt_ecb().

7.126.1.3 #define DES_ROUND(X, Y)**Value:**

```
{
    T = *SK++ ^ X; \
    Y ^= SB8[ (T) & 0x3F ] ^ \
          SB6[ (T >> 8) & 0x3F ] ^ \
          SB4[ (T >> 16) & 0x3F ] ^ \
          SB2[ (T >> 24) & 0x3F ];
    \
    T = *SK++ ^ ((X << 28) | (X >> 4)); \
    Y ^= SB7[ (T) & 0x3F ] ^ \
          SB5[ (T >> 8) & 0x3F ] ^ \
          SB3[ (T >> 16) & 0x3F ] ^ \
          SB1[ (T >> 24) & 0x3F ];
}
```

Definition at line 271 of file des.c.

Referenced by des3_crypt_ecb(), and des_crypt_ecb().

7.126.1.4 #define GET ULONG_BE(n, b, i)**Value:**

```
{
    (n) = ( (unsigned long) (b)[(i)] << 24 ) \
          | ( (unsigned long) (b)[(i) + 1] << 16 ) \
          | ( (unsigned long) (b)[(i) + 2] << 8 ) \
          | ( (unsigned long) (b)[(i) + 3] );
}
```

Definition at line 39 of file des.c.

Referenced by des3_crypt_ecb(), des_crypt_ecb(), des_setkey(), sha1_process(), and sha2_process().

7.126.1.5 #define PUT ULONG_BE(n, b, i)**Value:**

```
{
    (b) [ (i)      ] = (unsigned char) ( (n) >> 24 ) ;           \
    (b) [ (i) + 1] = (unsigned char) ( (n) >> 16 ) ;           \
    (b) [ (i) + 2] = (unsigned char) ( (n) >>  8 ) ;           \
    (b) [ (i) + 3] = (unsigned char) ( (n)          ) ;           \
}
```

Definition at line 49 of file des.c.

Referenced by des3_crypt_ecb(), des_crypt_ecb(), sha1_finish(), and sha2_finish().

7.126.1.6 #define SWAP(a, b) { unsigned long t = a; a = b; b = t; t = 0; }

Definition at line 286 of file des.c.

Referenced by des_setkey_dec().

7.126.2 Function Documentation

7.126.2.1 void des3_crypt_cbc (des3_context * ctx, int mode, int length, unsigned char iv[8], unsigned char * input, unsigned char * output)

3DES-CBC buffer encryption/decryption

Parameters

ctx 3DES context
mode DES_ENCRYPT or DES_DECRYPT
length length of the input data
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 593 of file des.c.

References des3_crypt_ecb(), and DES_ENCRYPT.

Referenced by des_self_test(), main(), ssl_decrypt_buf(), ssl_encrypt_buf(), and x509_des3_decrypt().

7.126.2.2 void des3_crypt_ecb (des3_context * ctx, unsigned char input[8], unsigned char output[8])

3DES-ECB block encryption/decryption

Parameters

ctx 3DES context
input 64-bit input block
output 64-bit output block

Definition at line 552 of file des.c.

References DES_FP, DES_IP, DES_ROUND, GET ULONG_BE, PUT ULONG_BE, and des3_context::sk.

Referenced by des3_crypt_cbc(), and des_self_test().

7.126.2.3 static void des3_set2key (unsigned long *esk*[96], unsigned long *dsk*[96], unsigned char *key*[16]) [static]

Definition at line 381 of file des.c.

References des_setkey().

Referenced by des3_set2key_dec(), and des3_set2key_enc().

7.126.2.4 void des3_set2key_dec (des3_context * *ctx*, unsigned char *key*[16])

Triple-DES key schedule (112-bit, decryption).

Parameters

ctx 3DES context to be initialized

key 16-byte secret key

Definition at line 420 of file des.c.

References des3_set2key(), and des3_context::sk.

Referenced by des_self_test().

7.126.2.5 void des3_set2key_enc (des3_context * *ctx*, unsigned char *key*[16])

Triple-DES key schedule (112-bit, encryption).

Parameters

ctx 3DES context to be initialized

key 16-byte secret key

Definition at line 409 of file des.c.

References des3_set2key(), and des3_context::sk.

Referenced by des_self_test().

7.126.2.6 static void des3_set3key (unsigned long *esk*[96], unsigned long *dsk*[96], unsigned char *key*[24]) [static]

Definition at line 428 of file des.c.

References des_setkey().

Referenced by des3_set3key_dec(), and des3_set3key_enc().

7.126.2.7 void des3_set3key_dec (des3_context * *ctx*, unsigned char *key*[24])

Triple-DES key schedule (168-bit, decryption).

Parameters

ctx 3DES context to be initialized

key 24-byte secret key

Definition at line 465 of file des.c.

References des3_set3key(), and des3_context::sk.

Referenced by des_self_test(), ssl_derive_keys(), and x509_des3_decrypt().

7.126.2.8 void des3_set3key_enc (des3_context * *ctx*, unsigned char *key*[24])

Triple-DES key schedule (168-bit, encryption).

Parameters

ctx 3DES context to be initialized

key 24-byte secret key

Definition at line 454 of file des.c.

References des3_set3key(), and des3_context::sk.

Referenced by des_self_test(), main(), and ssl_derive_keys().

7.126.2.9 void des_crypt_cbc (des_context * *ctx*, int *mode*, int *length*, unsigned char *iv*[8], unsigned char * *input*, unsigned char * *output*)

DES-CBC buffer encryption/decryption.

Parameters

ctx DES context

mode DES_ENCRYPT or DES_DECRYPT

length length of the input data

iv initialization vector (updated after use)

input buffer holding the input data

output buffer holding the output data

Definition at line 505 of file des.c.

References des_crypt_ecb(), and DES_ENCRYPT.

Referenced by des_self_test(), and main().

7.126.2.10 void des_crypt_ecb (des_context * *ctx*, unsigned char *input*[8], unsigned char *output*[8])

DES-ECB block encryption/decryption.

Parameters

ctx DES context

input 64-bit input block

output 64-bit output block

Definition at line 476 of file des.c.

References DES_FP, DES_IP, DES_ROUND, GET ULONG_BE, PUT ULONG_BE, and des_context::sk.

Referenced by des_crypt_cbc(), and des_self_test().

7.126.2.11 int des_self_test (int *verbose*)

Definition at line 694 of file des.c.

References buf, des3_crypt_cbc(), des3_crypt_ecb(), des3_set2key_dec(), des3_set2key_enc(), des3_set3key_dec(), des3_set3key_enc(), des3_test_buf, des3_test_cbc_dec, des3_test_cbc_enc, des3_test_ecb_dec, des3_test_ecb_enc, des3_test_iv, des3_test_keys, des_crypt_cbc(), des_crypt_ecb(), DES_DECRYPT, des_setkey_dec(), des_setkey_enc(), and prv.

Referenced by main().

7.126.2.12 static void des_setkey (unsigned long *SK[32]*, unsigned char *key[8]*) [static]

Definition at line 288 of file des.c.

References GET ULONG_BE, LHS, and RHS.

Referenced by des3_set2key(), des3_set3key(), des_setkey_dec(), and des_setkey_enc().

7.126.2.13 void des_setkey_dec (des_context * *ctx*, unsigned char *key[8]*)

DES key schedule (56-bit, decryption).

Parameters

ctx DES context to be initialized

key 8-byte secret key

Definition at line 368 of file des.c.

References des_setkey(), des_context::sk, and SWAP.

Referenced by des_self_test().

7.126.2.14 void des_setkey_enc (des_context * *ctx*, unsigned char *key[8]*)

DES key schedule (56-bit, encryption).

Parameters

ctx DES context to be initialized

key 8-byte secret key

Definition at line 360 of file des.c.

References des_setkey(), and des_context::sk.

Referenced by des_self_test(), and main().

7.126.3 Variable Documentation

7.126.3.1 const unsigned char des3_test_buf[8] [static]

Initial value:

```
{
    0x4E, 0x6F, 0x77, 0x20, 0x69, 0x73, 0x20, 0x74
}
```

Definition at line 658 of file des.c.

Referenced by des_self_test().

7.126.3.2 const unsigned char des3_test_cbc_dec[3][8] [static]

Initial value:

```
{
    { 0x12, 0x9F, 0x40, 0xB9, 0xD2, 0x00, 0x56, 0xB3 },
    { 0x47, 0x0E, 0xFC, 0x9A, 0x6B, 0x8E, 0xE3, 0x93 },
    { 0xC5, 0xCE, 0xCF, 0x63, 0xEC, 0xEC, 0x51, 0x4C }
}
```

Definition at line 677 of file des.c.

Referenced by des_self_test().

7.126.3.3 const unsigned char des3_test_cbc_enc[3][8] [static]

Initial value:

```
{
    { 0x54, 0xF1, 0x5A, 0xF6, 0xEB, 0xE3, 0xA4, 0xB4 },
    { 0x35, 0x76, 0x11, 0x56, 0x5F, 0xA1, 0x8E, 0x4D },
    { 0xCB, 0x19, 0x1F, 0x85, 0xD1, 0xED, 0x84, 0x39 }
}
```

Definition at line 684 of file des.c.

Referenced by des_self_test().

7.126.3.4 const unsigned char des3_test_ecb_dec[3][8] [static]

Initial value:

```
{
    { 0xCD, 0xD6, 0x4F, 0x2F, 0x94, 0x27, 0xC1, 0x5D },
    { 0x69, 0x96, 0xC8, 0xFA, 0x47, 0xA2, 0xAB, 0xEB },
    { 0x83, 0x25, 0x39, 0x76, 0x44, 0x09, 0x1A, 0x0A }
}
```

Definition at line 663 of file des.c.

Referenced by des_self_test().

7.126.3.5 const unsigned char des3_test_ecb_enc[3][8] [static]**Initial value:**

```
{
{ 0x6A, 0x2A, 0x19, 0xF4, 0x1E, 0xCA, 0x85, 0x4B },
{ 0x03, 0xE6, 0x9F, 0x5B, 0xFA, 0x58, 0xEB, 0x42 },
{ 0xDD, 0x17, 0xE8, 0xB8, 0xB4, 0x37, 0xD2, 0x32 }
}
```

Definition at line 670 of file des.c.

Referenced by des_self_test().

7.126.3.6 const unsigned char des3_test_iv[8] [static]**Initial value:**

```
{
0x12, 0x34, 0x56, 0x78, 0x90, 0xAB, 0xCD, 0xEF,
}
```

Definition at line 653 of file des.c.

Referenced by des_self_test().

7.126.3.7 const unsigned char des3_test_keys[24] [static]**Initial value:**

```
{
0x01, 0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF,
0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF, 0x01,
0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF, 0x01, 0x23
}
```

Definition at line 646 of file des.c.

Referenced by des_self_test().

7.126.3.8 const unsigned long LHS[16] [static]**Initial value:**

```
{
0x00000000, 0x00000001, 0x00000100, 0x00000101,
0x00010000, 0x00010001, 0x00010100, 0x00010101,
0x01000000, 0x01000001, 0x01000100, 0x01000101,
0x01010000, 0x01010001, 0x01010100, 0x01010101
}
```

Definition at line 224 of file des.c.

Referenced by des_setkey().

7.126.3.9 const unsigned long RHs[16] [static]**Initial value:**

```
{
    0x00000000, 0x01000000, 0x00010000, 0x01010000,
    0x00000100, 0x01001000, 0x00010100, 0x01010100,
    0x00000001, 0x01000001, 0x00010001, 0x01010001,
    0x00000101, 0x01000101, 0x00010101, 0x01010101,
}
```

Definition at line 232 of file des.c.

Referenced by des_setkey().

7.126.3.10 const unsigned long SB1[64] [static]**Initial value:**

```
{
    0x01010400, 0x00000000, 0x00010000, 0x01010404,
    0x01010004, 0x00010404, 0x00000004, 0x00010000,
    0x00000400, 0x01010400, 0x01010404, 0x00000400,
    0x01000404, 0x01010004, 0x01000000, 0x00000004,
    0x00000404, 0x01000400, 0x01000400, 0x00010400,
    0x00010400, 0x01010000, 0x01010000, 0x01000404,
    0x00010004, 0x01000004, 0x01000004, 0x00010004,
    0x00000000, 0x00000404, 0x00010404, 0x01000000,
    0x00010000, 0x01010404, 0x00000004, 0x01010000,
    0x01010400, 0x01000000, 0x01000000, 0x000000400,
    0x01010004, 0x00010000, 0x00010400, 0x01000004,
    0x000000400, 0x00000004, 0x01000404, 0x000010404,
    0x01010404, 0x00010004, 0x01010000, 0x01000404,
    0x01000004, 0x00000404, 0x00010404, 0x01010400,
    0x000000404, 0x01000400, 0x01000400, 0x00000000,
    0x00010004, 0x00010400, 0x00000000, 0x01010004
}
```

Definition at line 61 of file des.c.

7.126.3.11 const unsigned long SB2[64] [static]**Initial value:**

```
{
    0x80108020, 0x80008000, 0x00008000, 0x00108020,
    0x00100000, 0x00000020, 0x80100020, 0x80008020,
    0x80000020, 0x80108020, 0x80108000, 0x80000000,
    0x80008000, 0x00100000, 0x00000020, 0x80100020,
    0x00108000, 0x00100020, 0x80008020, 0x00000000,
    0x80000000, 0x00008000, 0x00108020, 0x80100000,
    0x00100020, 0x80000020, 0x00000000, 0x00108000,
    0x00008020, 0x80108000, 0x80100000, 0x00008020,
    0x00000000, 0x00108020, 0x80100020, 0x000100000,
    0x80008020, 0x80100000, 0x80108000, 0x00008000,
    0x80100000, 0x80008000, 0x00000020, 0x80108020,
    0x00108020, 0x00000020, 0x00008000, 0x80000000,
    0x00008020, 0x80108000, 0x00100000, 0x80000020,
    0x00100020, 0x80008020, 0x00000020, 0x00100020,
}
```

```

    0x00108000, 0x00000000, 0x80008000, 0x00008020,
    0x80000000, 0x80100020, 0x80108020, 0x00108000
}

```

Definition at line 81 of file des.c.

7.126.3.12 const unsigned long SB3[64] [static]

Initial value:

```

{
    0x00000208, 0x08020200, 0x00000000, 0x08020008,
    0x8000200, 0x00000000, 0x00020208, 0x08000200,
    0x00020008, 0x08000008, 0x00000008, 0x00020000,
    0x08020208, 0x00020008, 0x08020000, 0x00000208,
    0x08000000, 0x00000008, 0x08020200, 0x00000200,
    0x00020200, 0x08020000, 0x08020008, 0x00020208,
    0x08000208, 0x00020200, 0x00020000, 0x08000208,
    0x00000008, 0x08020208, 0x00000200, 0x08000000,
    0x08020200, 0x08000000, 0x00020008, 0x00000208,
    0x00020000, 0x08020200, 0x08000200, 0x00000000,
    0x00000200, 0x00020008, 0x08020208, 0x08000200,
    0x08000008, 0x00000200, 0x00000000, 0x08020008,
    0x08000208, 0x00020000, 0x08000000, 0x08020208,
    0x00000008, 0x00020208, 0x00020200, 0x08000008,
    0x08020000, 0x08000208, 0x00000208, 0x08020000,
    0x00020208, 0x00000008, 0x08020008, 0x00020200
}

```

Definition at line 101 of file des.c.

7.126.3.13 const unsigned long SB4[64] [static]

Initial value:

```

{
    0x00802001, 0x00002081, 0x00002081, 0x00000080,
    0x00802080, 0x00800081, 0x00800001, 0x00002001,
    0x00000000, 0x00802000, 0x00802000, 0x00802081,
    0x00000081, 0x00000000, 0x00800080, 0x00800001,
    0x00000001, 0x00002000, 0x00800000, 0x00802001,
    0x00000080, 0x00800000, 0x00002001, 0x00002080,
    0x00800081, 0x00000001, 0x00002080, 0x00800080,
    0x00002000, 0x00802080, 0x00802081, 0x00000081,
    0x00800080, 0x00800001, 0x00802000, 0x00802081,
    0x00000081, 0x00000000, 0x00000000, 0x00802000,
    0x000002080, 0x00800080, 0x00800081, 0x00000001,
    0x00802001, 0x00002081, 0x00002081, 0x00000080,
    0x00802081, 0x00000081, 0x00000001, 0x00002000,
    0x00800001, 0x00002001, 0x00802080, 0x00800081,
    0x000002001, 0x00002080, 0x00800000, 0x00802001,
    0x00000080, 0x00800000, 0x00002000, 0x00802080
}

```

Definition at line 121 of file des.c.

7.126.3.14 const unsigned long SB5[64] [static]

Initial value:

```
{
    0x00000100, 0x02080100, 0x02080000, 0x42000100,
    0x00080000, 0x00000100, 0x40000000, 0x02080000,
    0x40080100, 0x00080000, 0x02000100, 0x40080100,
    0x42000100, 0x42080000, 0x00080100, 0x40000000,
    0x02000000, 0x40080000, 0x40080000, 0x00000000,
    0x40000100, 0x42080100, 0x42080100, 0x02000100,
    0x42080000, 0x40000100, 0x00000000, 0x42000000,
    0x02080100, 0x02000000, 0x42000000, 0x00080100,
    0x00080000, 0x42000100, 0x00000100, 0x02000000,
    0x40000000, 0x02080000, 0x42000100, 0x40080100,
    0x02000100, 0x40000000, 0x42080000, 0x02080100,
    0x40080100, 0x00000100, 0x02000000, 0x42080000,
    0x42080100, 0x00080100, 0x42000000, 0x42080100,
    0x02080000, 0x00000000, 0x40080000, 0x42000000,
    0x00080100, 0x02000100, 0x40000100, 0x00080000,
    0x00000000, 0x40080000, 0x02080100, 0x40000100
}
```

Definition at line 141 of file des.c.

7.126.3.15 const unsigned long SB6[64] [static]

Initial value:

```
{
    0x20000010, 0x20400000, 0x00004000, 0x20404010,
    0x20400000, 0x00000010, 0x20404010, 0x00400000,
    0x20004000, 0x00404010, 0x00400000, 0x20000010,
    0x00400010, 0x20004000, 0x20000000, 0x00004010,
    0x00000000, 0x00400010, 0x20004010, 0x00004000,
    0x00404000, 0x20004010, 0x00000010, 0x20400010,
    0x20400010, 0x00000000, 0x00404010, 0x20404000,
    0x00004010, 0x00404000, 0x20404000, 0x20000000,
    0x20004000, 0x00000010, 0x20400010, 0x00404000,
    0x20404010, 0x00400000, 0x00004010, 0x20000010,
    0x00400000, 0x20004000, 0x20000000, 0x00004010,
    0x20000010, 0x20404010, 0x00404000, 0x20400000,
    0x00404010, 0x20404000, 0x00000000, 0x20400010,
    0x00000010, 0x00004000, 0x20400000, 0x00404010,
    0x00004000, 0x00400010, 0x20004010, 0x00000000,
    0x20404000, 0x20000000, 0x00400010, 0x20004010
}
```

Definition at line 161 of file des.c.

7.126.3.16 const unsigned long SB7[64] [static]

Initial value:

```
{
    0x00200000, 0x04200002, 0x04000802, 0x00000000,
    0x00000800, 0x04000802, 0x00200802, 0x04200800,
    0x04200802, 0x00200000, 0x00000000, 0x04000002,
    0x00000002, 0x04000000, 0x04200002, 0x00000802,
    0x04000800, 0x00200802, 0x00200002, 0x04000800,
    0x04000002, 0x04200000, 0x04200800, 0x00200002,
    0x04200000, 0x00000800, 0x00000802, 0x04200802,
    0x00200800, 0x00000002, 0x04000000, 0x00200800,
```

```
    0x04000000, 0x00200800, 0x00200000, 0x04000802,
    0x04000802, 0x04200002, 0x04200002, 0x00000002,
    0x00200002, 0x04000000, 0x04000800, 0x00200000,
    0x04200800, 0x00000802, 0x00200802, 0x04200800,
    0x00000802, 0x04000002, 0x04200802, 0x04200000,
    0x00200800, 0x00000000, 0x00000002, 0x04200802,
    0x00000000, 0x00200802, 0x04200000, 0x00000800,
    0x04000002, 0x04000800, 0x00000800, 0x00200002
}
```

Definition at line 181 of file des.c.

7.126.3.17 const unsigned long SB8[64] [static]

Initial value:

```
{
    0x10001040, 0x00001000, 0x00040000, 0x10041040,
    0x10000000, 0x10001040, 0x00000040, 0x10000000,
    0x00040040, 0x10040000, 0x10041040, 0x00041000,
    0x10041000, 0x00041040, 0x00001000, 0x00000040,
    0x10040000, 0x10000040, 0x10001000, 0x00001040,
    0x00041000, 0x00040040, 0x10040040, 0x10041000,
    0x00001040, 0x00000000, 0x00000000, 0x10040040,
    0x10000040, 0x10001000, 0x00041040, 0x00040000,
    0x00041040, 0x00040000, 0x10041000, 0x00001000,
    0x00000040, 0x10040040, 0x00001000, 0x00041040,
    0x10001000, 0x00000040, 0x10000040, 0x10040000,
    0x10040040, 0x10000000, 0x00040000, 0x10001040,
    0x00000000, 0x10041040, 0x00040040, 0x10000040,
    0x10040000, 0x10001000, 0x10001040, 0x00000000,
    0x10041040, 0x00041000, 0x00041000, 0x00001040,
    0x00001040, 0x00040040, 0x10000000, 0x10041000
}
```

Definition at line 201 of file des.c.

7.127 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/dhm.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/dhm.h"
#include <string.h>
```

Defines

- #define DHM_MPI_EXPORT(X, n)

Functions

- static int dhm_read_bignum (mpi *X, unsigned char **p, unsigned char *end)

Parse the ServerKeyExchange parameters.
- int dhm_read_params (dhm_context *ctx, unsigned char **p, unsigned char *end)

Setup and write the ServerKeyExchange parameters.
- int dhm_make_params (dhm_context *ctx, int x_size, unsigned char *output, int *olen, int(*f_rng)(void *), void *p_rng)

Import the peer's public value G^Y .
- int dhm_read_public (dhm_context *ctx, unsigned char *input, int ilen)

Create own private value X and export G^X .
- int dhm_make_public (dhm_context *ctx, int x_size, unsigned char *output, int olen, int(*f_rng)(void *), void *p_rng)

Derive and export the shared secret $(G^Y)^X \bmod P$.
- void dhm_free (dhm_context *ctx)

Checkup routine.
- int dhm_self_test (int verbose)

7.127.1 Define Documentation

7.127.1.1 #define DHM_MPI_EXPORT(X, n)

Value:

```
MPI_CHK( mpi_write_binary( X, p + 2, n ) ); \
    *p++ = (unsigned char)( n >> 8 ); \
    *p++ = (unsigned char)( n ); p += n;
```

Referenced by dhm_make_params().

7.127.2 Function Documentation

7.127.2.1 int dhm_calc_secret (dhm_context * *ctx*, unsigned char * *output*, int * *olen*)

Derive and export the shared secret $(G^Y)^X \bmod P$.

Parameters

- ctx* DHM context
- output* destination buffer
- olen* number of chars written

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 208 of file dhm.c.

References dhm_context::GY, dhm_context::K, MPI_CHK, mpi_exp_mod(), mpi_size(), mpi_write_binary(), dhm_context::P, dhm_context::RP, dhm_context::X, XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_CALC_SECRET_FAILED.

Referenced by main(), ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

7.127.2.2 void dhm_free (dhm_context * *ctx*)

Definition at line 234 of file dhm.c.

References dhm_context::G, dhm_context::GX, dhm_context::GY, dhm_context::K, mpi_free(), dhm_context::P, dhm_context::RP, and dhm_context::X.

Referenced by main(), and ssl_free().

7.127.2.3 int dhm_make_params (dhm_context * *ctx*, int *s_size*, unsigned char * *output*, int * *olen*, int(*)(void *) *f_rng*, void * *p_rng*)

Setup and write the ServerKeyExchange parameters.

Parameters

- ctx* DHM context
- s_size* private value size in bits
- output* destination buffer
- olen* number of chars written
- f_rng* RNG function
- p_rng* RNG parameter

Note

This function assumes that ctx->P and ctx->G have already been properly set (for example using mpi_read_string or mpi_read_binary).

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 93 of file dhm.c.

References DHM_MPI_EXPORT, dhm_context::G, dhm_context::GX, dhm_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_grow(), mpi_lset(), mpi_shift_r(), mpi_size(), dhm_context::P, mpi::p, dhm_context::RP, dhm_context::X, and XYSSL_ERR_DHM_MAKE_PARAMS_FAILED.

Referenced by main(), and ssl_write_server_key_exchange().

7.127.2.4 int dhm_make_public (dhm_context * ctx, int s_size, unsigned char * output, int olen, int(*)(void *)f_rng, void * p_rng)

Create own private value X and export G^X.

Parameters

ctx DHM context
s_size private value size in bits
output destination buffer
olen must be equal to ctx->P.len
f_rng RNG function
p_rng RNG parameter

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 167 of file dhm.c.

References dhm_context::G, dhm_context::GX, dhm_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_grow(), mpi_lset(), mpi_shift_r(), mpi_write_binary(), dhm_context::P, mpi::p, dhm_context::RP, dhm_context::X, XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED.

Referenced by main(), and ssl_write_client_key_exchange().

7.127.2.5 static int dhm_read_bignum (mpi * X, unsigned char ** p, unsigned char * end) [static]

Definition at line 37 of file dhm.c.

References mpi_read_binary(), XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_READ_PARAMS_FAILED.

Referenced by dhm_read_params().

7.127.2.6 int dhm_read_params (dhm_context * ctx, unsigned char ** p, unsigned char * end)

Parse the ServerKeyExchange parameters.

Parameters

ctx DHM context
p &(start of input buffer)
end end of buffer

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 63 of file dhm.c.

References `dhm_read_bignum()`, `dhm_context::G`, `dhm_context::GY`, `dhm_context::len`, `mpi_size()`, `dhm_context::P`, and `XYSSL_ERR_DHM_BAD_INPUT_DATA`.

Referenced by `main()`, and `ssl_parse_server_key_exchange()`.

7.127.2.7 int dhm_read_public (dhm_context * *ctx*, unsigned char * *input*, int *ilen*)

Import the peer's public value G^Y .

Parameters

ctx DHM context

input input buffer

ilen size of buffer

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 150 of file dhm.c.

References `dhm_context::GY`, `dhm_context::len`, `mpi_read_binary()`, `XYSSL_ERR_DHM_BAD_INPUT_DATA`, and `XYSSL_ERR_DHM_READ_PUBLIC_FAILED`.

Referenced by `main()`, and `ssl_parse_client_key_exchange()`.

7.127.2.8 int dhm_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 246 of file dhm.c.

7.128 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/havege.c File Reference

```
#include <string.h>
#include <time.h>
#include "xyssl/config.h"
#include "xyssl/havege.h"
#include "xyssl/timing.h"
```

Defines

- #define **SWAP**(X, Y) { int *T = X; X = Y; Y = T; }
- #define **TST1_ENTER** if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;
- #define **TST2_ENTER** if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;
- #define **TST1_LEAVE** U1++; }
- #define **TST2_LEAVE** U2++; }
- #define **ONE_ITERATION**

Functions

- static void **havege_fill** (**havege_state** *hs)
- void **havege_init** (**havege_state** *hs)
HAVEGE initialization.
- int **havege_rand** (void *p_rng)
HAVEGE rand function.

7.128.1 Define Documentation

7.128.1.1 #define ONE_ITERATION

Definition at line 60 of file havege.c.

Referenced by `havege_fill()`.

7.128.1.2 #define SWAP(X, Y) { int *T = X; X = Y; Y = T; }

Definition at line 52 of file havege.c.

7.128.1.3 #define TST1_ENTER if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;

Definition at line 54 of file havege.c.

7.128.1.4 #define TST1_LEAVE U1++; }

Definition at line 57 of file havege.c.

7.128.1.5 #define TST2_ENTER if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;

Definition at line 55 of file havege.c.

7.128.1.6 #define TST2_LEAVE U2++; }

Definition at line 58 of file havege.c.

7.128.2 Function Documentation

7.128.2.1 static void havege_fill (havege_state * *hs*) [static]

Definition at line 154 of file havege.c.

References COLLECT_SIZE, havege_state::offset, ONE_ITERATION, havege_state::PT1, havege_state::PT2, and havege_state::WALK.

Referenced by havege_init(), and havege_rand().

7.128.2.2 void havege_init (havege_state * *hs*)

HAVEGE initialization.

Parameters

hs HAVEGE state to be initialized

Definition at line 188 of file havege.c.

References havege_fill().

Referenced by generate_AES_key(), generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), initiate_migration_process(), main(), and ssl_test().

7.128.2.3 int havege_rand (void * *p_rng*)

HAVEGE rand function.

Parameters

rng_st points to an HAVEGE state

Returns

A random int

Definition at line 198 of file havege.c.

References COLLECT_SIZE, havege_fill(), havege_state::offset, and havege_state::pool.

Referenced by generate_AES_key(), generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), initiate_migration_process(), main(), and ssl_test().

7.129 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c File Reference

```
#include "xyssl/config.h"
```

7.130 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c File Reference

```
#include "xyssl/config.h"
```

7.131 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md5.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/md5.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define **GET ULONG LE**(n, b, i)
- #define **PUT ULONG LE**(n, b, i)
- #define **S**(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))
- #define **P**(a, b, c, d, k, s, t)
- #define **F**(x, y, z) (z ^ (x & (y ^ z)))
- #define **F**(x, y, z) (y ^ (z & (x ^ y)))
- #define **F**(x, y, z) (x ^ y ^ z)
- #define **F**(x, y, z) (y ^ (x | ~z))

Functions

- void **md5_starts** (md5_context *ctx)
MD5 context setup.
- static void **md5_process** (md5_context *ctx, unsigned char data[64])
- void **md5_update** (md5_context *ctx, unsigned char *input, int ilen)
MD5 process buffer.
- void **md5_finish** (md5_context *ctx, unsigned char output[16])
MD5 final digest.
- void **md5** (unsigned char *input, int ilen, unsigned char output[16])
Output = MD5(input buffer).
- int **md5_file** (char *path, unsigned char output[16])
Output = MD5(file contents).
- void **md5_hmac_starts** (md5_context *ctx, unsigned char *key, int keylen)
MD5 HMAC context setup.
- void **md5_hmac_update** (md5_context *ctx, unsigned char *input, int ilen)
MD5 HMAC process buffer.
- void **md5_hmac_finish** (md5_context *ctx, unsigned char output[16])
MD5 HMAC final digest.
- void **md5_hmac** (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[16])

Output = HMAC-MD5(hmac key, input buffer).

- int **md5_self_test** (int verbose)

Checkup routine.

Variables

- static const unsigned char **md5_padding** [64]
- static unsigned char **md5_test_buf** [7][81]
- static const int **md5_test buflen** [7]
- static const unsigned char **md5_test sum** [7][16]
- static unsigned char **md5_hmac_test_key** [7][26]
- static const int **md5_hmac_test_keylen** [7]
- static unsigned char **md5_hmac_test_buf** [7][74]
- static const int **md5_hmac_test buflen** [7]
- static const unsigned char **md5_hmac_test sum** [7][16]

7.131.1 Define Documentation

7.131.1.1 #define F(x, y, z) (y ^ (x | ~z))

7.131.1.2 #define F(x, y, z) (x ^ y ^ z)

7.131.1.3 #define F(x, y, z) (y ^ (z & (x ^ y)))

7.131.1.4 #define F(x, y, z) (z ^ (x & (y ^ z)))

Referenced by sha2_process(), and sha4_process().

7.131.1.5 #define GET ULONG LE(n, b, i)

Value:

```
{
    (n) = ( (unsigned long) (b)[(i)] ) \
          | ( (unsigned long) (b)[(i) + 1] << 8 ) \
          | ( (unsigned long) (b)[(i) + 2] << 16 ) \
          | ( (unsigned long) (b)[(i) + 3] << 24 );
}
```

Definition at line 39 of file md5.c.

7.131.1.6 #define P(a, b, c, d, k, s, t)

Value:

```
{
    a += F(b,c,d) + X[k] + t; a = S(a,s) + b;
}
```

Referenced by main(), md5_process(), rsa_decryption(), sha1_process(), sha2_process(), and sha4_process().

7.131.1.7 #define PUT ULONG LE(n, b, i)

Value:

```
{
    (b) [ (i)      ] = (unsigned char) ( (n)          );
    (b) [ (i) + 1] = (unsigned char) ( (n) >> 8 );
    (b) [ (i) + 2] = (unsigned char) ( (n) >> 16 );
    (b) [ (i) + 3] = (unsigned char) ( (n) >> 24 );
}
```

Definition at line 49 of file md5.c.

7.131.1.8 #define S(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))

7.131.2 Function Documentation

7.131.2.1 void md5 (unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = MD5(input buffer).

Parameters

input buffer holding the data

ilen length of the input data

output MD5 checksum result

Definition at line 278 of file md5.c.

References md5_finish(), md5_starts(), and md5_update().

Referenced by initiate_migration_process(), main(), md5_hmac_starts(), md5_self_test(), reply_migration_process(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_finished(), ssl_parse_server_key_exchange(), ssl_write_finished(), ssl_write_server_key_exchange(), and x509_hash().

7.131.2.2 int md5_file (char * *path*, unsigned char *output*[16])

Output = MD5(file contents).

Parameters

path input file name

output MD5 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 292 of file md5.c.

References buf, f, md5_finish(), md5_starts(), and md5_update().

Referenced by md5_wrapper().

7.131.2.3 void md5_finish (md5_context * *ctx*, unsigned char *output*[16])

MD5 final digest.

Parameters

ctx MD5 context

output MD5 checksum result

Definition at line 250 of file md5.c.

References md5_padding, md5_update(), PUT ULONG LE, md5_context::state, and md5_context::total.

Referenced by md5(), md5_file(), md5_hmac_finish(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_server_key_exchange(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

7.131.2.4 void md5_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = HMAC-MD5(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-MD5 result

Definition at line 378 of file md5.c.

References md5_hmac_finish(), md5_hmac_starts(), and md5_hmac_update().

Referenced by ssl_decrypt_buf(), ssl_encrypt_buf(), and tls1_prf().

7.131.2.5 void md5_hmac_finish (md5_context * *ctx*, unsigned char *output*[16])

MD5 HMAC final digest.

Parameters

ctx HMAC context

output MD5 HMAC checksum result

Definition at line 362 of file md5.c.

References md5_finish(), md5_starts(), md5_update(), and md5_context::opad.

Referenced by md5_hmac(), and md5_self_test().

7.131.2.6 void md5_hmac_starts (md5_context * *ctx*, unsigned char * *key*, int *keylen*)

MD5 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

Definition at line 324 of file md5.c.

References md5_context::ipad, md5(), md5_starts(), md5_update(), and md5_context::opad.

Referenced by md5_hmac(), and md5_self_test().

7.131.2.7 void md5_hmac_update (md5_context * *ctx*, unsigned char * *input*, int *ilen*)

MD5 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 354 of file md5.c.

References md5_update().

Referenced by md5_hmac(), and md5_self_test().

7.131.2.8 static void md5_process (md5_context * *ctx*, unsigned char *data*[64]) [static]

Definition at line 72 of file md5.c.

References GET ULONG LE, P, and md5_context::state.

Referenced by md5_update().

7.131.2.9 int md5_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 495 of file md5.c.

References buf, md5(), md5_hmac_finish(), md5_hmac_starts(), md5_hmac_test_buf, md5_hmac_test_buflen, md5_hmac_test_key, md5_hmac_test_keylen, md5_hmac_test_sum, md5_hmac_update(), md5_test_buf, md5_test_buflen, and md5_test_sum.

Referenced by main().

7.131.2.10 void md5_starts (md5_context * ctx)

MD5 context setup.

Parameters

ctx context to be initialized

Definition at line 61 of file md5.c.

References `md5_context::state`, and `md5_context::total`.

Referenced by `md5()`, `md5_file()`, `md5_hmac_finish()`, `md5_hmac_starts()`, `ssl_calc_finished()`, `ssl_calc_verify()`, `ssl_derive_keys()`, `ssl_init()`, `ssl_mac_md5()`, `ssl_parse_server_key_exchange()`, `ssl_write_server_key_exchange()`, and `x509_des3_decrypt()`.

7.131.2.11 void md5_update (md5_context *ctx, unsigned char *input, int ilen)

MD5 process buffer.

Parameters

ctx MD5 context

input buffer holding the data

ilen length of the input data

Definition at line 198 of file md5.c.

References `md5_context::buffer`, `md5_process()`, and `md5_context::total`.

Referenced by md5(), md5_file(), md5_finish(), md5_hmac_finish(), md5_hmac_starts(), md5_hmac_update(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_client_hello(), ssl_parse_server_key_exchange(), ssl_read_record(), ssl_write_record(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

7.131.3 Variable Documentation

7.131.3.1 **unsigned char md5_hmac_test_buf[7][74]** [static]

Initial value:

```
{ "Test Using Larger Than Block-Size Key and Larger  
    " Than One Block-Size Data" }
```

Definition at line 449 of file md5.c.

Referenced by md5_self_test().

7.131.3.2 const int md5_hmac_test_buflen[7] [static]

Initial value:

```
{  
    8, 28, 50, 50, 20, 54, 73  
}
```

Definition at line 469 of file md5.c.

Referenced by md5 self test().

7.131.3.3 unsigned char md5_hmac_test_key[7][26] [static]

Initial value:

Definition at line 432 of file md5.c.

Referenced by md5_self_test().

7.131.3.4 const int md5_hmac_test_keylen[7] [static]

Initial value:

```
{  
    16, 4, 16, 25, 16, 80, 80  
}
```

Definition at line 444 of file md5.c.

Referenced by md5_self_test().

7.131.3.5 const unsigned char md5_hmac_test_sum[7][16] [static]

Initial value:

```
{
{ 0x92, 0x94, 0x72, 0x7A, 0x36, 0x38, 0xBB, 0x1C,
  0x13, 0xF4, 0x8E, 0xF8, 0x15, 0x8B, 0xFC, 0x9D },
{ 0x75, 0x0C, 0x78, 0x3E, 0x6A, 0xB0, 0xB5, 0x03,
  0xEA, 0xA8, 0x6E, 0x31, 0x0A, 0x5D, 0xB7, 0x38 },
{ 0x56, 0xBE, 0x34, 0x52, 0x1D, 0x14, 0x4C, 0x88,
  0xDB, 0xB8, 0xC7, 0x33, 0xF0, 0xE8, 0xB3, 0xF6 },
{ 0x69, 0x7E, 0xAF, 0x0A, 0xCA, 0x3A, 0x3A, 0xEA,
  0x3A, 0x75, 0x16, 0x47, 0x46, 0xFF, 0xAA, 0x79 },
{ 0x56, 0x46, 0x1E, 0xF2, 0x34, 0x2E, 0xDC, 0x00,
  0xF9, 0xBA, 0xB9, 0x95 },
{ 0x6B, 0x1A, 0xB7, 0xFE, 0x4B, 0xD7, 0xBF, 0x8F,
  0x0B, 0x62, 0xE6, 0xCE, 0x61, 0xB9, 0xD0, 0xCD },
{ 0x6F, 0x63, 0x0F, 0xAD, 0x67, 0xCD, 0xA0, 0xEE,
  0x1F, 0xB1, 0xF5, 0x62, 0xDB, 0x3A, 0xA5, 0x3E }
}
```

Definition at line 474 of file md5.c.

Referenced by md5_self_test().

7.131.3.6 const unsigned char md5_padding[64] [static]

Initial value:

```
{
0x80, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
}
```

Definition at line 239 of file md5.c.

Referenced by md5_finish().

7.131.3.7 unsigned char md5_test_buf[7][81] [static]

Initial value:

```
{
{ "" },
{ "a" },
{ "abc" },
{ "message digest" },
{ "abcdefghijklmnopqrstuvwxyz" },
{ "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789" },
{ "12345678901234567890123456789012345678901234567890123456789012"
  "345678901234567890" }
}
```

Definition at line 394 of file md5.c.

Referenced by md5_self_test().

7.131.3.8 const int md5_test buflen[7] [static]

Initial value:

```
{  
    0, 1, 3, 14, 26, 62, 80  
}
```

Definition at line 406 of file md5.c.

Referenced by md5_self_test().

7.131.3.9 const unsigned char md5_test_sum[7][16] [static]

Initial value:

```
{  
{ 0xD4, 0x1D, 0x8C, 0xD9, 0x8F, 0x00, 0xB2, 0x04,  
 0xE9, 0x80, 0x09, 0x98, 0xEC, 0xF8, 0x42, 0x7E },  
{ 0x0C, 0xC1, 0x75, 0xB9, 0xC0, 0xF1, 0xB6, 0xA8,  
 0x31, 0xC3, 0x99, 0xE2, 0x69, 0x77, 0x26, 0x61 },  
{ 0x90, 0x01, 0x50, 0x98, 0x3C, 0xD2, 0x4F, 0xB0,  
 0xD6, 0x96, 0x3F, 0x7D, 0x28, 0xE1, 0x7F, 0x72 },  
{ 0xF9, 0x6B, 0x69, 0x7D, 0x7C, 0xB7, 0x93, 0x8D,  
 0x52, 0x5A, 0x2F, 0x31, 0xAA, 0xF1, 0x61, 0xD0 },  
{ 0xC3, 0xFC, 0xD3, 0xD7, 0x61, 0x92, 0xE4, 0x00,  
 0x7D, 0xFB, 0x49, 0x6C, 0xCA, 0x67, 0xE1, 0x3B },  
{ 0xD1, 0x74, 0xAB, 0x98, 0xD2, 0x77, 0xD9, 0xF5,  
 0xA5, 0x61, 0x1C, 0x2C, 0x9F, 0x41, 0x9D, 0x9F },  
{ 0x57, 0xED, 0xF4, 0xA2, 0x2B, 0xE3, 0xC9, 0x55,  
 0xAC, 0x49, 0xDA, 0x2E, 0x21, 0x07, 0xB6, 0x7A }  
}
```

Definition at line 411 of file md5.c.

Referenced by md5_self_test().

7.132 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/net.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/net.h"
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <sys/time.h>
#include <unistd.h>
#include <signal.h>
#include <fcntl.h>
#include <netdb.h>
#include <errno.h>
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
```

Functions

- static unsigned short **net_htons** (int **port**)
- int **net_connect** (int *fd, char *host, int **port**)

Initiate a TCP connection with host:port.
- int **net_bind** (int *fd, char *bind_ip, int **port**)

Create a listening socket on bind_ip:port. If bind_ip == NULL, all interfaces are binded.
- static int **net_is_blocking** (void)
- int **net_accept** (int bind_fd, int *client_fd, void *client_ip)

Accept a connection from a remote client.
- int **net_set_block** (int fd)

Set the socket blocking.
- int **net_set_nonblock** (int fd)

Set the socket non-blocking.
- void **net_usleep** (unsigned long usec)

Portable usleep helper.
- int **net_recv** (void *ctx, unsigned char *buf, int len)

Read at most 'len' characters. len is updated to reflect the actual number of characters read.

- int **net_send** (void *ctx, unsigned char *buf, int len)

Write at most 'len' characters. len is updated to reflect the number of characters _not_ written.

- void **net_close** (int fd)

Gracefully shutdown the connection.

7.132.1 Function Documentation

7.132.1.1 int net_accept (int bind_fd, int *client_fd, void *client_ip)

Accept a connection from a remote client.

Returns

0 if successful, XYSSL_ERR_NET_ACCEPT_FAILED, or XYSSL_ERR_NET_WOULD_BLOCK is bind_fd was set to non-blocking and accept() is blocking.

Definition at line 212 of file net.c.

References net_is_blocking(), XYSSL_ERR_NET_ACCEPT_FAILED, and XYSSL_ERR_NET_TRY AGAIN.

Referenced by main(), and ssl_test().

7.132.1.2 int net_bind (int *fd, char *bind_ip, int port)

Create a listening socket on bind_ip:port. If bind_ip == NULL, all interfaces are binded.

Returns

0 if successful, or one of: XYSSL_ERR_NET_SOCKET_FAILED, XYSSL_ERR_NET_BIND_FAILED, XYSSL_ERR_NET_LISTEN_FAILED

Definition at line 126 of file net.c.

References net_htons(), SOCKET_ERROR, XYSSL_ERR_NET_BIND_FAILED, XYSSL_ERR_NET_LISTEN_FAILED, and XYSSL_ERR_NET_SOCKET_FAILED.

Referenced by main(), and ssl_test().

7.132.1.3 void net_close (int fd)

Gracefully shutdown the connection.

Definition at line 338 of file net.c.

Referenced by main(), and ssl_test().

7.132.1.4 int net_connect (int *fd, char *host, int port)

Initiate a TCP connection with host:port.

Returns

0 if successful, or one of: XYSSL_ERR_NET_SOCKET_FAILED, XYSSL_ERR_NET_UNKNOWN_HOST, XYSSL_ERR_NET_CONNECT_FAILED

Definition at line 81 of file net.c.

References net_htons(), SOCKET_ERROR, XYSSL_ERR_NET_CONNECT_FAILED, XYSSL_ERR_NET_SOCKET_FAILED, and XYSSL_ERR_NET_UNKNOWN_HOST.

Referenced by main(), and ssl_test().

7.132.1.5 static unsigned short net_htons (int port) [static]

Definition at line 67 of file net.c.

References buf.

Referenced by net_bind(), and net_connect().

7.132.1.6 static int net_is_blocking (void) [static]

Definition at line 190 of file net.c.

Referenced by net_accept(), net_recv(), and net_send().

7.132.1.7 int net_recv (void *ctx, unsigned char *buf, int len)

Read at most 'len' characters. len is updated to reflect the actual number of characters read.

Returns

This function returns the number of bytes received, or a negative error code; XYSSL_ERR_NET_TRY AGAIN indicates read() is blocking.

Definition at line 277 of file net.c.

References net_is_blocking(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_RECV_FAILED, and XYSSL_ERR_NET_TRY AGAIN.

Referenced by main(), and ssl_test().

7.132.1.8 int net_send (void *ctx, unsigned char *buf, int len)

Write at most 'len' characters. len is updated to reflect the number of characters _not_ written.

Returns

This function returns the number of bytes sent, or a negative error code; XYSSL_ERR_NET_TRY AGAIN indicates write() is blocking.

Definition at line 309 of file net.c.

References net_is_blocking(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_SEND_FAILED, and XYSSL_ERR_NET_TRY AGAIN.

Referenced by main(), and ssl_test().

7.132.1.9 int net_set_block (int *fd*)

Set the socket blocking.

Returns

0 if successful, or a non-zero error code

Definition at line 243 of file net.c.

7.132.1.10 int net_set_nonblock (int *fd*)

Set the socket non-blocking.

Returns

0 if successful, or a non-zero error code

Definition at line 253 of file net.c.

Referenced by ssl_test().

7.132.1.11 void net_usleep (unsigned long *usec*)

Portable usleep helper.

Note

Real amount of time slept will not be less than select()'s timeout granularity (typically, 10ms).

Definition at line 266 of file net.c.

7.133 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/padlock.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/aes.h"
#include "xyssl/padlock.h"
```

7.134 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/rsa.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/rsa.h"
#include <stdlib.h>
#include <string.h>
#include <stdio.h>
#include "xyssl/sha1.h"
```

Defines

- #define KEY_LEN 128
- #define RSA_N
- #define RSA_E "10001"
- #define RSA_D
- #define RSA_P
- #define RSA_Q
- #define RSA_DP
- #define RSA_DQ
- #define RSA_QP
- #define PT_LEN 24
- #define RSA_PT

Functions

- void **rsa_init** (**rsa_context** *ctx, int padding, int hash_id, int(*f_rng)(void *), void *p_rng)
Initialize an RSA context.
- int **rsa_gen_key** (**rsa_context** *ctx, int nbits, int exponent)
Generate an RSA keypair.
- int **rsa_check_pubkey** (**rsa_context** *ctx)
Check a public RSA key.
- int **rsa_check_privkey** (**rsa_context** *ctx)
Check a private RSA key.
- int **rsa_public** (**rsa_context** *ctx, unsigned char *input, unsigned char *output)
Do an RSA public key operation.
- int **rsa_private** (**rsa_context** *ctx, unsigned char *input, unsigned char *output)
Do an RSA private key operation.
- int **rsa_pkcs1_encrypt** (**rsa_context** *ctx, int mode, int ilen, unsigned char *input, unsigned char *output)
Add the message padding, then do an RSA operation.

- int `rsa_pkcs1_decrypt` (`rsa_context` *ctx, int mode, int *olen, unsigned char *input, unsigned char *output)

Do an RSA operation, then remove the message padding.

- int `rsa_pkcs1_sign` (`rsa_context` *ctx, int mode, int hash_id, int hashlen, unsigned char *hash, unsigned char *sig)

Do a private RSA to sign a message digest.

- int `rsa_pkcs1_verify` (`rsa_context` *ctx, int mode, int hash_id, int hashlen, unsigned char *hash, unsigned char *sig)

Do a public RSA and check the message digest.

- void `rsa_free` (`rsa_context` *ctx)

Free the components of an RSA key.

- int `rsa_self_test` (int verbose)

Checkup routine.

7.134.1 Define Documentation

7.134.1.1 #define KEY_LEN 128

Definition at line 573 of file rsa.c.

Referenced by `rsa_self_test()`.

7.134.1.2 #define PT_LEN 24

Definition at line 620 of file rsa.c.

Referenced by `rsa_self_test()`.

7.134.1.3 #define RSA_D

Value:

```
"24BF6185468786FDD303083D25E64EFC" \
    "66CA472BC44D253102F8B4A9D3BFA750" \
    "91386C0077937FE33FA3252D28855837" \
    "AE1B484A8A9A45F7EE8C0C634F99E8CD" \
    "DF79C5CE07EE72C7F123142198164234" \
    "CABB724CF78B8173B9F880FC86322407" \
    "AF1FEDFDDE2BEB674CA15F3E81A1521E" \
    "071513A1E85B5DFA031F21ECAE91A34D"
```

Definition at line 586 of file rsa.c.

Referenced by `rsa_self_test()`.

7.134.1.4 #define RSA_DP

Value:

```
"C1ACF567564274FB07A0BBAD5D26E298" \
    "3C94D22288ACD763FD8E5600ED4A702D" \
    "F84198A5F06C2E72236AE490C93F07F8" \
    "3CC559CD27BC2D1CA488811730BB5725"
```

Definition at line 605 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.5 #define RSA_DQ

Value:

```
"4959CBF6F8FEF750AEE6977C155579C7" \
    "D8AAEA56749EA28623272E4F7D0592AF" \
    "7C1F1313CAC9471B5C523BFE592F517B" \
    "407A1BD76C164B93DA2D32A383E58357"
```

Definition at line 610 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.6 #define RSA_E "10001"

Definition at line 584 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.7 #define RSA_N

Value:

```
"9292758453063D803DD603D5E777D788" \
    "8ED1D5BF35786190FA2F23EBC0848AEA" \
    "DDA92CA6C3D80B32C4D109BE0F36D6AE" \
    "7130B9CED7ACDF54CFC7555AC14EEBAB" \
    "93A89813FBF3C4F806D2D800F7C38A8" \
    "1AE31942917403FF4946B0A83D3D3E05" \
    "EE57C6F5F5606FB5D4BC6CD34EE0801A" \
    "5E94BB77B07507233A0BC7BAC8F90F79"
```

Definition at line 575 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.8 #define RSA_P

Value:

```
"C36D0EB7FCD285223CFB5AABA5BDA3D8" \
    "2C01CAD19EA484A87EA4377637E75500" \
    "FCB2005C5C7DD6EC4AC023CDA285D796" \
    "C3D9E75E1EFC42488BB4F1D13AC30A57"
```

Definition at line 595 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.9 #define RSA_PT

Value:

```
"\xAA\xBB\xCC\x03\x02\x01\x00\xFF\xFF\xFF\xFF\xFF\xFF" \
"\x11\x22\x33\x0A\x0B\x0C\xCC\xDD\xDD\xDD\xDD"
```

Definition at line 621 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.10 #define RSA_Q

Value:

```
"C000DF51A7C77AE8D7C7370C1FF55B69" \
"E211C2B9E5DB1ED0BF61D0D9899620F4" \
"910E4168387E3C30AA1E00C339A79508" \
"8452DD96A9A5EA5D9DCA68DA636032AF"
```

Definition at line 600 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.11 #define RSA_QP

Value:

```
"9AE7FBC99546432DF71896FC239EADAE" \
"F38D18D2B2F0E2DD275AA977E2BF4411" \
"F5A3B2A5D33605AEBBCCBA7FEB9F2D2F" \
"A74206CEC169D74BF5A8C50D6F48EA08"
```

Definition at line 615 of file rsa.c.

Referenced by rsa_self_test().

7.134.2 Function Documentation

7.134.2.1 int rsa_check_privkey (rsa_context *ctx)

Check a private RSA key.

Parameters

ctx RSA context to be checked

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 152 of file rsa.c.

References rsa_context::D, rsa_context::E, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_free(), mpi_gcd(), mpi_init(), mpi_mod_mpi(), mpi_mul_mpi(), mpi_sub_int(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_check_pubkey(), and XYSSL_ERR_RSA_KEY_CHECK_FAILED.

Referenced by rsa_decryption(), rsa_self_test(), and x509parse_key().

7.134.2.2 int rsa_check_pubkey (rsa_context * *ctx*)

Check a public RSA key.

Parameters

ctx RSA context to be checked

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 132 of file rsa.c.

References rsa_context::E, mpi_msb(), rsa_context::N, mpi::p, and XYSSL_ERR_RSA_KEY_CHECK_FAILED.

Referenced by rsa_check_privkey(), rsa_encryption(), rsa_self_test(), and x509parse_crt().

7.134.2.3 void rsa_free (rsa_context * *ctx*)

Free the components of an RSA key.

Definition at line 558 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, mpi_free(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_context::RN, rsa_context::RP, and rsa_context::RQ.

Referenced by main(), rsa_gen_key(), rsa_self_test(), ssl_test(), x509_free(), x509_self_test(), and x509parse_key().

7.134.2.4 int rsa_gen_key (rsa_context * *ctx*, int *nbits*, int *exponent*)

Generate an RSA keypair.

Parameters

ctx RSA context that will hold the key

nbits size of the public key in bits

exponent public exponent (e.g., 65537)

Note

[rsa_init\(\)](#) must be called beforehand to setup the RSA context (especially f_rng and p_rng).

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 60 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, rsa_context::f_rng, rsa_context::len, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_free(), mpi_gcd(), mpi_gen_prime(), mpi_init(), mpi_inv_mod(), mpi_lset(), mpi_mod_mpi(), mpi_msb(), mpi_mul_mpi(), mpi_sub_int(), mpi_swap(), rsa_context::N, rsa_context::P, rsa_context::p_rng, rsa_context::Q, rsa_context::QP, rsa_free(), XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_KEY_GEN_FAILED.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

7.134.2.5 void rsa_init (rsa_context * ctx, int padding, int hash_id, int(*)(void *)f_rng, void * p_rng)

Initialize an RSA context.

Parameters

ctx RSA context to be initialized
padding RSA_PKCS_V15 or RSA_PKCS_V21
hash_id RSA_PKCS_V21 hash identifier
f_rng RNG function
p_rng RNG parameter

Note

The hash_id parameter is actually ignored when using RSA_PKCS_V15 padding.
Currently (xyssl-0.8), RSA_PKCS_V21 padding is not supported.

Definition at line 40 of file rsa.c.

References rsa_context::f_rng, rsa_context::hash_id, rsa_context::p_rng, and rsa_context::padding.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_decryption(), and rsa_encryption().

7.134.2.6 int rsa_pkcs1_decrypt (rsa_context * ctx, int mode, int * olen, unsigned char * input, unsigned char * output)

Do an RSA operation, then remove the message padding.

Parameters

ctx RSA context
mode RSA_PUBLIC or RSA_PRIVATE
input buffer holding the encrypted data
output buffer that will hold the plaintext
olen will contain the plaintext length

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The output buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 326 of file rsa.c.

References buf, rsa_context::len, rsa_context::padding, RSA_CRYPT, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_INVALID_PADDING.

Referenced by rsa_decryption(), RSA_private_decrypt(), RSA_public_decrypt(), rsa_self_test(), and ssl_parse_client_key_exchange().

7.134.2.7 int rsa_pkcs1_encrypt (rsa_context * *ctx*, int *mode*, int *ilen*, unsigned char * *input*, unsigned char * *output*)

Add the message padding, then do an RSA operation.

Parameters

ctx RSA context

mode RSA_PUBLIC or RSA_PRIVATE

ilen contains the the plaintext length

input buffer holding the data to be encrypted

output buffer that will hold the ciphertext

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The output buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 280 of file rsa.c.

References rsa_context::len, rsa_context::padding, RSA_CRYPT, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_INVALID_PADDING.

Referenced by rsa_encryption(), RSA_private_encrypt(), RSA_public_encrypt(), rsa_self_test(), and ssl_write_client_key_exchange().

7.134.2.8 int rsa_pkcs1_sign (rsa_context * *ctx*, int *mode*, int *hash_id*, int *hashlen*, unsigned char * *hash*, unsigned char * *sig*)

Do a private RSA to sign a message digest.

Parameters

ctx RSA context

mode RSA_PUBLIC or RSA_PRIVATE

hash_id RSA_RAW, RSA_MD{2,4,5} or RSA_SHA{1,256}

hashlen message digest length (for RSA_RAW only)

hash buffer holding the message digest

sig buffer that will hold the ciphertext

Returns

0 if the signing operation was successful, or an XYSSL_ERR_RSA_XXX error code

Note

The "sig" buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 379 of file rsa.c.

References ASN1_HASH_MDX, ASN1_HASH_SHA1, rsa_context::len, rsa_context::padding, RSA_MD2, RSA_MD4, RSA_MD5, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, RSA_RAW, RSA_SHA1, RSA_SIGN, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_INVALID_PADDING.

Referenced by main(), rsa_self_test(), ssl_write_certificate_verify(), and ssl_write_server_key_exchange().

7.134.2.9 int rsa_pkcs1_verify (rsa_context * *ctx*, int *mode*, int *hash_id*, int *hashlen*, unsigned char * *hash*, unsigned char * *sig*)

Do a public RSA and check the message digest.

Parameters

ctx points to an RSA public key

mode RSA_PUBLIC or RSA_PRIVATE

hash_id RSA_RAW, RSA_MD{2,4,5} or RSA_SHA{1,256}

hashlen message digest length (for RSA_RAW only)

hash buffer holding the message digest

sig buffer holding the ciphertext

Returns

0 if the verify operation was successful, or an XYSSL_ERR_RSA_XXX error code

Note

The "sig" buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 468 of file rsa.c.

References ASN1_HASH_MDX, ASN1_HASH_SHA1, buf, rsa_context::len, rsa_context::padding, RSA_MD2, RSA_MD4, RSA_MD5, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, RSA_RAW, RSA_SHA1, RSA_SIGN, XYSSL_ERR_RSA_BAD_INPUT_DATA, XYSSL_ERR_RSA_INVALID_PADDING, and XYSSL_ERR_RSA_VERIFY_FAILED.

Referenced by main(), rsa_self_test(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), and x509parse_verify().

7.134.2.10 int rsa_private (rsa_context * *ctx*, unsigned char * *input*, unsigned char * *output*)

Do an RSA private key operation.

Parameters

ctx RSA context
input input buffer
output output buffer

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The input and output buffers must be large enough (eg. 128 bytes if RSA-1024 is used).

Definition at line 221 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::len, mpi_add_mpi(), MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_mod_mpi(), mpi_mul_mpi(), mpi_read_binary(), mpi_sub_mpi(), mpi_write_binary(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_context::RN, rsa_context::RP, rsa_context::RQ, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_PRIVATE_FAILED.

Referenced by main(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.134.2.11 int rsa_public (rsa_context * *ctx*, unsigned char * *input*, unsigned char * *output*)

Do an RSA public key operation.

Parameters

ctx RSA context
input input buffer
output output buffer

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

This function does NOT take care of message padding. Also, be sure to set input[0] = 0.

The input and output buffers must be large enough (eg. 128 bytes if RSA-1024 is used).

Definition at line 187 of file rsa.c.

References rsa_context::E, rsa_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_read_binary(), mpi_write_binary(), rsa_context::N, rsa_context::RN, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_PUBLIC_FAILED.

Referenced by main(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.134.2.12 int rsa_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 627 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, KEY_LEN, rsa_context::len, mpi_read_string(), rsa_context::N, rsa_context::P, PT_LEN, rsa_context::Q, rsa_context::QP, rsa_check_privkey(), rsa_check_pubkey(), RSA_D, RSA_DP, RSA_DQ, RSA_E, rsa_free(), RSA_N, RSA_P, rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), RSA_PRIVATE, RSA_PT, RSA_PUBLIC, RSA_Q, RSA_QP, RSA_SHA1, and sha1().

Referenced by main().

7.135 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha1.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/sha1.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define GET ULONG_BE(n, b, i)
- #define PUT ULONG_BE(n, b, i)
- #define S(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))
- #define R(t)
- #define P(a, b, c, d, e, x)
- #define F(x, y, z) (z ^ (x & (y ^ z)))
- #define K 0x5A827999
- #define F(x, y, z) (x ^ y ^ z)
- #define K 0x6ED9EBA1
- #define F(x, y, z) ((x & y) | (z & (x | y)))
- #define K 0x8F1BBCDC
- #define F(x, y, z) (x ^ y ^ z)
- #define K 0xCA62C1D6

Functions

- void sha1_starts (sha1_context *ctx)
 SHA-1 context setup.
- static void sha1_process (sha1_context *ctx, unsigned char data[64])
 SHA-1 process buffer.
- void sha1_update (sha1_context *ctx, unsigned char *input, int ilen)
 SHA-1 final digest.
- void sha1 (unsigned char *input, int ilen, unsigned char output[20])
 Output = SHA-1(input buffer).
- int sha1_file (char *path, unsigned char output[20])
 Output = SHA-1(file contents).
- void sha1_hmac_starts (sha1_context *ctx, unsigned char *key, int keylen)
 SHA-1 HMAC context setup.
- void sha1_hmac_update (sha1_context *ctx, unsigned char *input, int ilen)
 SHA-1 HMAC process buffer.

- void `sha1_hmac_finish` (`sha1_context` *ctx, unsigned char output[20])
SHA-1 HMAC final digest.
- void `sha1_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[20])
Output = HMAC-SHA-1(hmac key, input buffer).
- int `sha1_self_test` (int verbose)
Checkup routine.

Variables

- static const unsigned char `sha1_padding` [64]
- static unsigned char `sha1_test_buf` [3][57]
- static const int `sha1_test buflen` [3]
- static const unsigned char `sha1_test sum` [3][20]
- static unsigned char `sha1_hmac_test_key` [7][26]
- static const int `sha1_hmac_test_keylen` [7]
- static unsigned char `sha1_hmac_test_buf` [7][74]
- static const int `sha1_hmac_test buflen` [7]
- static const unsigned char `sha1_hmac_test sum` [7][20]

7.135.1 Define Documentation

7.135.1.1 #define F(x, y, z) (x ^ y ^ z)

7.135.1.2 #define F(x, y, z) ((x & y) | (z & (x | y)))

7.135.1.3 #define F(x, y, z) (x ^ y ^ z)

7.135.1.4 #define F(x, y, z) (z ^ (x & (y ^ z)))

7.135.1.5 #define GET ULONG BE(n, b, i)

Value:

```
{
    (n) = ( (unsigned long) (b) [(i)] << 24 ) \
          | ( (unsigned long) (b) [(i) + 1] << 16 ) \
          | ( (unsigned long) (b) [(i) + 2] << 8 ) \
          | ( (unsigned long) (b) [(i) + 3] ); \
}
```

Definition at line 39 of file sha1.c.

7.135.1.6 #define K 0xCA62C1D6**7.135.1.7 #define K 0x8F1BBCDC****7.135.1.8 #define K 0x6ED9EBA1****7.135.1.9 #define K 0x5A827999**

Referenced by sha4_process().

7.135.1.10 #define P(a, b, c, d, e, x)**Value:**

```
{
    e += S(a, 5) + F(b, c, d) + K + x; b = S(b, 30); \
}
```

7.135.1.11 #define PUT ULONG_BE(n, b, i)**Value:**

```
{
    (b)[(i)] = (unsigned char)((n) >> 24); \
    (b)[(i)+1] = (unsigned char)((n) >> 16); \
    (b)[(i)+2] = (unsigned char)((n) >> 8); \
    (b)[(i)+3] = (unsigned char)(n); \
}
```

Definition at line 49 of file sha1.c.

7.135.1.12 #define R(t)**Value:**

```
(
    temp = W[(t - 3) & 0x0F] ^ W[(t - 8) & 0x0F] ^
           W[(t - 14) & 0x0F] ^ W[t & 0x0F], \
    (W[t & 0x0F] = S(temp, 1)) \
)
```

Referenced by mpi_is_prime(), sha1_process(), and sha2_process().

7.135.1.13 #define S(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))**7.135.2 Function Documentation****7.135.2.1 void sha1 (unsigned char * *input*, int *ilen*, unsigned char *output*[20])**

Output = SHA-1(input buffer).

Parameters

input buffer holding the data

ilen length of the input data
output SHA-1 checksum result

Definition at line 313 of file sha1.c.

References sha1_finish(), sha1_starts(), and sha1_update().

Referenced by main(), rsa_self_test(), sha1_hmac_starts(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_finished(), ssl_parse_server_key_exchange(), ssl_write_finished(), ssl_write_server_key_exchange(), and x509_hash().

7.135.2.2 int sha1_file (char **path*, unsigned char *output*[20])

Output = SHA-1(file contents).

Parameters

path input file name
output SHA-1 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 327 of file sha1.c.

References buf, f, sha1_finish(), sha1_starts(), and sha1_update().

Referenced by main(), and sha1_wrapper().

7.135.2.3 void sha1_finish (sha1_context **ctx*, unsigned char *output*[20])

SHA-1 final digest.

Parameters

ctx SHA-1 context
output SHA-1 checksum result

Definition at line 284 of file sha1.c.

References PUT ULONG_BE, sha1_padding, sha1_update(), sha1_context::state, and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_hmac_finish(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

7.135.2.4 void sha1_hmac (unsigned char **key*, int *keylen*, unsigned char **input*, int *ilen*, unsigned char *output*[20])

Output = HMAC-SHA-1(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-SHA-1 result

Definition at line 413 of file sha1.c.

References sha1_hmac_finish(), sha1_hmac_starts(), and sha1_hmac_update().

Referenced by ssl_decrypt_buf(), ssl_encrypt_buf(), and tls1_prf().

7.135.2.5 void sha1_hmac_finish (sha1_context * *ctx*, unsigned char *output*[20])

SHA-1 HMAC final digest.

Parameters

ctx HMAC context

output SHA-1 HMAC checksum result

Definition at line 397 of file sha1.c.

References sha1_context::opad, sha1_finish(), sha1_starts(), and sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

7.135.2.6 void sha1_hmac_starts (sha1_context * *ctx*, unsigned char * *key*, int *keylen*)

SHA-1 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

Definition at line 359 of file sha1.c.

References sha1_context::ipad, sha1_context::opad, sha1(), sha1_starts(), and sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

7.135.2.7 void sha1_hmac_update (sha1_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-1 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 389 of file sha1.c.

References sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

7.135.2.8 static void sha1_process (sha1_context * *ctx*, unsigned char *data*[64]) [static]

Definition at line 73 of file sha1.c.

References GET ULONG_BE, P, R, and sha1_context::state.

Referenced by sha1_update().

7.135.2.9 int sha1_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 521 of file sha1.c.

References buf, sha1_finish(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_hmac_test_buf, sha1_hmac_test buflen, sha1_hmac_test_key, sha1_hmac_test_keylen, sha1_hmac_test_sum, sha1_hmac_update(), sha1_starts(), sha1_test_buf, sha1_test buflen, sha1_test_sum, and sha1_update().

Referenced by main().

7.135.2.10 void sha1_starts (sha1_context * *ctx*)

SHA-1 context setup.

Parameters

ctx context to be initialized

Definition at line 61 of file sha1.c.

References sha1_context::state, and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_init(), ssl_mac_sha1(), ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

7.135.2.11 void sha1_update (sha1_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-1 process buffer.

Parameters

ctx SHA-1 context

input buffer holding the data

ilen length of the input data

Definition at line 232 of file sha1.c.

References sha1_context::buffer, sha1_process(), and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_finish(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_hmac_update(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_client_hello(), ssl_parse_server_key_exchange(), ssl_read_record(), ssl_write_record(), and ssl_write_server_key_exchange().

7.135.3 Variable Documentation

7.135.3.1 unsigned char sha1_hmac_test_buf[7][74] [static]

Initial value:

Definition at line 475 of file sha1.c.

Referenced by sha1_self_test().

7.135.3.2 const int sha1_hmac_test_buflen[7] [static]

Initial value:

```
{  
    8, 28, 50, 50, 20, 54, 73  
}
```

Definition at line 495 of file sha1.c.

Referenced by sha1 self test().

7.135.3.3 unsigned char sha1_hmac_test_key[7][26] [static]

Initial value:

Definition at line 455 of file sha1.c.

Referenced by sha1_self_test().

7.135.3.4 const int sha1_hmac_test_keylen[7] [static]

Initial value:

```
{
    20, 4, 20, 25, 20, 80, 80
}
```

Definition at line 470 of file sha1.c.

Referenced by sha1_self_test().

7.135.3.5 const unsigned char sha1_hmac_test_sum[7][20] [static]

Initial value:

```
{
{ 0xB6, 0x17, 0x31, 0x86, 0x55, 0x05, 0x72, 0x64, 0xE2, 0x8B,
  0xC0, 0xB6, 0xFB, 0x37, 0x8C, 0x8E, 0xF1, 0x46, 0xBE, 0x00 },
{ 0xEF, 0xFC, 0xDF, 0x6A, 0xE5, 0xEB, 0x2F, 0xA2, 0xD2, 0x74,
  0x16, 0xD5, 0xF1, 0x84, 0xDF, 0x9C, 0x25, 0x9A, 0x7C, 0x79 },
{ 0x12, 0x5D, 0x73, 0x42, 0xB9, 0xAC, 0x11, 0xCD, 0x91, 0xA3,
  0x9A, 0xF4, 0x8A, 0xA1, 0x7B, 0x4F, 0x63, 0xF1, 0x75, 0xD3 },
{ 0x4C, 0x90, 0x07, 0xF4, 0x02, 0x62, 0x50, 0xC6, 0xBC, 0x84,
  0x14, 0xF9, 0xBF, 0x50, 0xC8, 0x6C, 0x2D, 0x72, 0x35, 0xDA },
{ 0x4C, 0x1A, 0x03, 0x42, 0x4B, 0x55, 0xE0, 0x7F, 0xE7, 0xF2,
  0x7B, 0xE1 },
{ 0xAA, 0x4A, 0xE5, 0xE1, 0x52, 0x72, 0xD0, 0x0E, 0x95, 0x70,
  0x56, 0x37, 0xCE, 0x8A, 0x3B, 0x55, 0xED, 0x40, 0x21, 0x12 },
{ 0xE8, 0xE9, 0x9D, 0x0F, 0x45, 0x23, 0x7D, 0x78, 0x6D, 0x6B,
  0xBA, 0xA7, 0x96, 0x5C, 0x78, 0x08, 0xBB, 0xFF, 0x1A, 0x91 }
}
```

Definition at line 500 of file sha1.c.

Referenced by sha1_self_test().

7.135.3.6 const unsigned char sha1_padding[64] [static]

Initial value:

```
{
0x80, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
}
```

Definition at line 273 of file sha1.c.

Referenced by sha1_finish().

7.135.3.7 unsigned char sha1_test_buf[3][57] [static]**Initial value:**

```
{  
    { "abc" },  
    { "abcdbcdecdecdedefgefghfghighijhijkljklmklmnlnomnopnopq" },  
    { "" }  
}
```

Definition at line 430 of file sha1.c.

Referenced by sha1_self_test().

7.135.3.8 const int sha1_test buflen[3] [static]**Initial value:**

```
{  
    3, 56, 1000  
}
```

Definition at line 437 of file sha1.c.

Referenced by sha1_self_test().

7.135.3.9 const unsigned char sha1_test_sum[3][20] [static]**Initial value:**

```
{  
    { 0xA9, 0x99, 0x3E, 0x36, 0x47, 0x06, 0x81, 0x6A, 0xBA, 0x3E,  
     0x25, 0x71, 0x78, 0x50, 0xC2, 0x6C, 0x9C, 0xD0, 0xD8, 0x9D },  
    { 0x84, 0x98, 0x3E, 0x44, 0x1C, 0x3B, 0xD2, 0x6E, 0xBA, 0xAE,  
     0x4A, 0xA1, 0xF9, 0x51, 0x29, 0xE5, 0xE5, 0x46, 0x70, 0xF1 },  
    { 0x34, 0xAA, 0x97, 0x3C, 0xD4, 0xC4, 0xDA, 0xA4, 0xF6, 0x1E,  
     0xEB, 0x2B, 0xDB, 0xAD, 0x27, 0x31, 0x65, 0x34, 0x01, 0x6F }  
}
```

Definition at line 442 of file sha1.c.

Referenced by sha1_self_test().

7.136 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha2.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/sha2.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define **GET ULONG BE**(n, b, i)
- #define **PUT ULONG BE**(n, b, i)
- #define **SHR**(x, n) ((x & 0xFFFFFFFF) >> n)
- #define **ROTR**(x, n) (SHR(x,n) | (x << (32 - n)))
- #define **S0**(x) (ROTR(x, 7) ^ ROTR(x,18) ^ SHR(x, 3))
- #define **S1**(x) (ROTR(x,17) ^ ROTR(x,19) ^ SHR(x,10))
- #define **S2**(x) (ROTR(x, 2) ^ ROTR(x,13) ^ ROTR(x,22))
- #define **S3**(x) (ROTR(x, 6) ^ ROTR(x,11) ^ ROTR(x,25))
- #define **F0**(x, y, z) ((x & y) | (z & (x | y)))
- #define **F1**(x, y, z) (z ^ (x & (y ^ z)))
- #define **R**(t)
- #define **P**(a, b, c, d, e, **f**, g, h, x, **K**)

Functions

- void **sha2_starts** (**sha2_context** *ctx, int is224)

SHA-256 context setup.
- static void **sha2_process** (**sha2_context** *ctx, unsigned char data[64])
- void **sha2_update** (**sha2_context** *ctx, unsigned char *input, int ilen)

SHA-256 process buffer.
- void **sha2_finish** (**sha2_context** *ctx, unsigned char output[32])

SHA-256 final digest.
- void **sha2** (unsigned char *input, int ilen, unsigned char output[32], int is224)

Output = SHA-256(input buffer).
- int **sha2_file** (char *path, unsigned char output[32], int is224)

Output = SHA-256(file contents).
- void **sha2_hmac_starts** (**sha2_context** *ctx, unsigned char *key, int keylen, int is224)

SHA-256 HMAC context setup.
- void **sha2_hmac_update** (**sha2_context** *ctx, unsigned char *input, int ilen)

SHA-256 HMAC process buffer.

- void `sha2_hmac_finish` (`sha2_context` *ctx, unsigned char output[32])
SHA-256 HMAC final digest.
- void `sha2_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[32], int is224)
Output = HMAC-SHA-256(hmac key, input buffer).
- int `sha2_self_test` (int verbose)
Checkup routine.

Variables

- static const unsigned char `sha2_padding` [64]
- static unsigned char `sha2_test_buf` [3][57]
- static const int `sha2_test buflen` [3]
- static const unsigned char `sha2_test_sum` [6][32]
- static unsigned char `sha2_hmac_test_key` [7][26]
- static const int `sha2_hmac_test_keylen` [7]
- static unsigned char `sha2_hmac_test_buf` [7][153]
- static const int `sha2_hmac_test buflen` [7]
- static const unsigned char `sha2_hmac_test_sum` [14][32]

7.136.1 Define Documentation

7.136.1.1 #define F0(x, y, z) ((x & y) | (z & (x | y)))

7.136.1.2 #define F1(x, y, z) (z ^ (x & (y ^ z)))

7.136.1.3 #define GET ULONG_BE(n, b, i)

Value:

```
{
    (n) = ( (unsigned long) (b)[(i)] << 24 )           \
          | ( (unsigned long) (b)[(i) + 1] << 16 )       \
          | ( (unsigned long) (b)[(i) + 2] << 8 )        \
          | ( (unsigned long) (b)[(i) + 3] );             \
}
```

Definition at line 39 of file sha2.c.

7.136.1.4 #define P(a, b, c, d, e, f, g, h, x, K)

Value:

```
{
    temp1 = h + S3(e) + F1(e,f,g) + K + x;           \
    temp2 = S2(a) + F0(a,b,c);                         \
    d += temp1; h = temp1 + temp2;                      \
}
```

7.136.1.5 #define PUT ULONG BE(n, b, i)

Value:

```
{
    (b)[(i)] = (unsigned char) ((n) >> 24);
    (b)[(i) + 1] = (unsigned char) ((n) >> 16);
    (b)[(i) + 2] = (unsigned char) ((n) >> 8);
    (b)[(i) + 3] = (unsigned char) ((n));
}
```

Definition at line 49 of file sha2.c.

7.136.1.6 #define R(t)

Value:

```
{
    W[t] = S1(W[t - 2]) + W[t - 7] +
           S0(W[t - 15]) + W[t - 16];
}
```

7.136.1.7 #define ROTR(x, n) (SHR(x,n) | (x << (32 - n)))

7.136.1.8 #define S0(x) (ROTR(x, 7) ^ ROTR(x,18) ^ SHR(x, 3))

Referenced by sha4_process().

7.136.1.9 #define S1(x) (ROTR(x,17) ^ ROTR(x,19) ^ SHR(x,10))

Referenced by sha4_process(), and tls1_prf().

7.136.1.10 #define S2(x) (ROTR(x, 2) ^ ROTR(x,13) ^ ROTR(x,22))

Referenced by tls1_prf().

7.136.1.11 #define S3(x) (ROTR(x, 6) ^ ROTR(x,11) ^ ROTR(x,25))

7.136.1.12 #define SHR(x, n) ((x & 0xFFFFFFFF) >> n)

7.136.2 Function Documentation

7.136.2.1 void sha2 (unsigned char * *input*, int *ilen*, unsigned char *output*[32], int *is224*)

Output = SHA-256(*input* buffer).

Parameters

input buffer holding the data

ilen length of the input data

output SHA-224/256 checksum result

is224 0 = use SHA256, 1 = use SHA224

Definition at line 314 of file sha2.c.

References sha2_finish(), sha2_starts(), and sha2_update().

Referenced by main(), and sha2_hmac_starts().

7.136.2.2 int sha2_file (char **path*, unsigned char *output*[32], int *is224*)

Output = SHA-256(file contents).

Parameters

path input file name

output SHA-224/256 checksum result

is224 0 = use SHA256, 1 = use SHA224

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 329 of file sha2.c.

References buf, f, sha2_finish(), sha2_starts(), and sha2_update().

Referenced by sha2_wrapper().

7.136.2.3 void sha2_finish (sha2_context **ctx*, unsigned char *output*[32])

SHA-256 final digest.

Parameters

ctx SHA-256 context

output SHA-224/256 checksum result

Definition at line 280 of file sha2.c.

References sha2_context::is224, PUT ULONG_BE, sha2_padding, sha2_update(), sha2_context::state, and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_hmac_finish(), and sha2_self_test().

7.136.2.4 void sha2_hmac (unsigned char **key*, int *keylen*, unsigned char **input*, int *ilen*, unsigned char *output*[32], int *is224*)

Output = HMAC-SHA-256(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data
output HMAC-SHA-224/256 result
is224 0 = use SHA256, 1 = use SHA224

Definition at line 420 of file sha2.c.

References sha2_hmac_finish(), sha2_hmac_starts(), and sha2_hmac_update().

7.136.2.5 void sha2_hmac_finish (sha2_context * *ctx*, unsigned char *output*[32])

SHA-256 HMAC final digest.

Parameters

ctx HMAC context
output SHA-224/256 HMAC checksum result

Definition at line 400 of file sha2.c.

References sha2_context::is224, sha2_context::opad, sha2_finish(), sha2_starts(), and sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

7.136.2.6 void sha2_hmac_starts (sha2_context * *ctx*, unsigned char * *key*, int *keylen*, int *is224*)

SHA-256 HMAC context setup.

Parameters

ctx HMAC context to be initialized
key HMAC secret key
keylen length of the HMAC key
is224 0 = use SHA256, 1 = use SHA224

Definition at line 361 of file sha2.c.

References sha2_context::ipad, sha2_context::opad, sha2(), sha2_starts(), and sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

7.136.2.7 void sha2_hmac_update (sha2_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-256 HMAC process buffer.

Parameters

ctx HMAC context
input buffer holding the data
ilen length of the input data

Definition at line 392 of file sha2.c.

References sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

7.136.2.8 static void sha2_process (sha2_context * *ctx*, unsigned char *data*[64]) [static]

Definition at line 94 of file sha2.c.

References F, GET ULONG_BE, P, R, and sha2_context::state.

Referenced by sha2_update().

7.136.2.9 int sha2_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 599 of file sha2.c.

References buf, sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_test_buf, sha2_hmac_test buflen, sha2_hmac_test_key, sha2_hmac_test_keylen, sha2_hmac_test_sum, sha2_hmac_update(), sha2_starts(), sha2_test_buf, sha2_test buflen, sha2_test_sum, and sha2_update().

Referenced by main().

7.136.2.10 void sha2_starts (sha2_context * *ctx*, int *is224*)

SHA-256 context setup.

Parameters

ctx context to be initialized

is224 0 = use SHA256, 1 = use SHA224

Definition at line 61 of file sha2.c.

References sha2_context::is224, sha2_context::state, and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_hmac_finish(), sha2_hmac_starts(), and sha2_self_test().

7.136.2.11 void sha2_update (sha2_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-256 process buffer.

Parameters

ctx SHA-256 context

input buffer holding the data

ilen length of the input data

Definition at line 228 of file sha2.c.

References sha2_context::buffer, sha2_process(), and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_update(), and sha2_self_test().

7.136.3 Variable Documentation

7.136.3.1 unsigned char sha2_hmac_test_buf[7][153] [static]

Initial value:

Definition at line 507 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.2 const int sha2_hmac_test_buflen[7] [static]

Initial value:

```
{  
    8, 28, 50, 50, 20, 54, 152  
}
```

Definition at line 528 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.3 `unsigned char sha2_hmac_test_key[7][26]` [static]

Initial value:

Definition at line 487 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.4 const int sha2_hmac_test_keylen[7] [static]

Initial value:

```
{  
    20, 4, 20, 25, 20, 131, 131  
}
```

Definition at line 502 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.5 const unsigned char sha2_hmac_test_sum[14][32] [static]

Definition at line 533 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.6 const unsigned char sha2_padding[64] [static]

Initial value:

```
{  
0x80, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,  
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,  
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,  
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0  
}
```

Definition at line 269 of file sha2.c.

Referenced by sha2_finish().

7.136.3.7 unsigned char sha2_test_buf[3][57] [static]

Initial value:

```
{  
    { "abc" },  
    { "abcdefghijklmnopqrstuvwxyz" },  
    { "" }  
}
```

Definition at line 437 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.8 const int sha2_test buflen[3] [static]

Initial value:

```
{
    3, 56, 1000
}
```

Definition at line 444 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.9 const unsigned char sha2_test_sum[6][32] [static]

Initial value:

```
{
    {
        { 0x23, 0x09, 0x7D, 0x22, 0x34, 0x05, 0xD8, 0x22,
            0x86, 0x42, 0xA4, 0x77, 0xBD, 0xA2, 0x55, 0xB3,
            0x2A, 0xAD, 0xBC, 0xE4, 0xBD, 0xA0, 0xB3, 0xF7,
            0xE3, 0x6C, 0x9D, 0xA7 },
        { 0x75, 0x38, 0x8B, 0x16, 0x51, 0x27, 0x76, 0xCC,
            0x5D, 0xBA, 0x5D, 0xA1, 0xFD, 0x89, 0x01, 0x50,
            0xB0, 0xC6, 0x45, 0x5C, 0xB4, 0xF5, 0x8B, 0x19,
            0x52, 0x52, 0x25, 0x25 },
        { 0x20, 0x79, 0x46, 0x55, 0x98, 0x0C, 0x91, 0xD8,
            0xBB, 0xB4, 0xC1, 0xEA, 0x97, 0x61, 0x8A, 0x4B,
            0xF0, 0x3F, 0x42, 0x58, 0x19, 0x48, 0xB2, 0xEE,
            0x4E, 0xE7, 0xAD, 0x67 },
        { 0xBA, 0x78, 0x16, 0xBF, 0x8F, 0x01, 0xCF, 0xEA,
            0x41, 0x41, 0x40, 0xDE, 0x5D, 0xAE, 0x22, 0x23,
            0xB0, 0x03, 0x61, 0xA3, 0x96, 0x17, 0x7A, 0x9C,
            0xB4, 0x10, 0xFF, 0x61, 0xF2, 0x00, 0x15, 0xAD },
        { 0x24, 0x8D, 0x6A, 0x61, 0xD2, 0x06, 0x38, 0xB8,
            0xE5, 0xC0, 0x26, 0x93, 0x0C, 0x3E, 0x60, 0x39,
            0xA3, 0x3C, 0xE4, 0x59, 0x64, 0xFF, 0x21, 0x67,
            0xF6, 0xEC, 0xED, 0xD4, 0x19, 0xDB, 0x06, 0xC1 },
        { 0xCD, 0xC7, 0x6E, 0x5C, 0x99, 0x14, 0xFB, 0x92,
            0x81, 0xA1, 0xC7, 0xE2, 0x84, 0xD7, 0x3E, 0x67,
            0xF1, 0x80, 0x9A, 0x48, 0xA4, 0x97, 0x20, 0x0E,
            0x04, 0x6D, 0x39, 0xCC, 0xC7, 0x11, 0x2C, 0xD0 }
    }
}
```

Definition at line 449 of file sha2.c.

Referenced by sha2_self_test().

7.137 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha4.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/sha4.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define GET_UINT64_BE(n, b, i)
- #define PUT_UINT64_BE(n, b, i)
- #define SHR(x, n) (x >> n)
- #define ROTR(x, n) (SHR(x,n) | (x << (64 - n)))
- #define S0(x) (ROTR(x, 1) ^ ROTR(x, 8) ^ SHR(x, 7))
- #define S1(x) (ROTR(x,19) ^ ROTR(x,61) ^ SHR(x, 6))
- #define S2(x) (ROTR(x,28) ^ ROTR(x,34) ^ ROTR(x,39))
- #define S3(x) (ROTR(x,14) ^ ROTR(x,18) ^ ROTR(x,41))
- #define F0(x, y, z) ((x & y) | (z & (x | y)))
- #define F1(x, y, z) (z ^ (x & (y ^ z)))
- #define P(a, b, c, d, e, f, g, h, x, K)

Functions

- void sha4_starts (sha4_context *ctx, int is384)

SHA-512 context setup.
- static void sha4_process (sha4_context *ctx, unsigned char data[128])

SHA-512 process buffer.
- void sha4_update (sha4_context *ctx, unsigned char *input, int ilen)

SHA-512 final digest.
- void sha4 (unsigned char *input, int ilen, unsigned char output[64], int is384)

Output = SHA-512(input buffer).
- int sha4_file (char *path, unsigned char output[64], int is384)

Output = SHA-512(file contents).
- void sha4_hmac_starts (sha4_context *ctx, unsigned char *key, int keylen, int is384)

SHA-512 HMAC context setup.
- void sha4_hmac_update (sha4_context *ctx, unsigned char *input, int ilen)

SHA-512 HMAC process buffer.
- void sha4_hmac_finish (sha4_context *ctx, unsigned char output[64])

SHA-512 HMAC final digest.

- void **sha4_hmac** (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[64], int is384)

Output = HMAC-SHA-512(hmac key, input buffer).

- int **sha4_self_test** (int verbose)

Checkup routine.

Variables

- static const unsigned int64 **K** [80]
- static const unsigned char **sha4_padding** [128]
- static unsigned char **sha4_test_buf** [3][113]
- static const int **sha4_test buflen** [3]
- static const unsigned char **sha4_test_sum** [6][64]
- static unsigned char **sha4_hmac_test_key** [7][26]
- static const int **sha4_hmac_test_keylen** [7]
- static unsigned char **sha4_hmac_test_buf** [7][153]
- static const int **sha4_hmac_test buflen** [7]
- static const unsigned char **sha4_hmac_test_sum** [14][64]

7.137.1 Define Documentation

7.137.1.1 #define F0(x, y, z) ((x & y) | (z & (x | y)))

7.137.1.2 #define F1(x, y, z) (z ^ (x & (y ^ z)))

7.137.1.3 #define GET_UINT64_BE(n, b, i)

Value:

```
{
    (n) = ( (unsigned int64) (b) [ (i) ] << 56 ) \
          | ( (unsigned int64) (b) [ (i) + 1] << 48 ) \
          | ( (unsigned int64) (b) [ (i) + 2] << 40 ) \
          | ( (unsigned int64) (b) [ (i) + 3] << 32 ) \
          | ( (unsigned int64) (b) [ (i) + 4] << 24 ) \
          | ( (unsigned int64) (b) [ (i) + 5] << 16 ) \
          | ( (unsigned int64) (b) [ (i) + 6] << 8 ) \
          | ( (unsigned int64) (b) [ (i) + 7] ) ; \
}
```

Definition at line 39 of file sha4.c.

Referenced by sha4_process().

7.137.1.4 #define P(a, b, c, d, e, f, g, h, x, K)

Value:

```
{
    temp1 = h + S3(e) + F1(e,f,g) + K + x;           \
    temp2 = S2(a) + F0(a,b,c);                         \
    d += temp1; h = temp1 + temp2;                      \
}
```

7.137.1.5 #define PUT_UINT64_BE(n, b, i)

Value:

```
{
    (b)[(i)] = (unsigned char)( (n) >> 56 );          \
    (b)[(i)+1] = (unsigned char)( (n) >> 48 );          \
    (b)[(i)+2] = (unsigned char)( (n) >> 40 );          \
    (b)[(i)+3] = (unsigned char)( (n) >> 32 );          \
    (b)[(i)+4] = (unsigned char)( (n) >> 24 );          \
    (b)[(i)+5] = (unsigned char)( (n) >> 16 );          \
    (b)[(i)+6] = (unsigned char)( (n) >>  8 );          \
    (b)[(i)+7] = (unsigned char)( (n)           );          \
}
```

Definition at line 53 of file sha4.c.

Referenced by sha4_finish().

7.137.1.6 #define ROTR(x, n) (SHR(x,n) | (x << (64 - n)))

7.137.1.7 #define S0(x) (ROTR(x, 1) ^ ROTR(x, 8) ^ SHR(x, 7))

7.137.1.8 #define S1(x) (ROTR(x,19) ^ ROTR(x,61) ^ SHR(x, 6))

7.137.1.9 #define S2(x) (ROTR(x,28) ^ ROTR(x,34) ^ ROTR(x,39))

7.137.1.10 #define S3(x) (ROTR(x,14) ^ ROTR(x,18) ^ ROTR(x,41))

7.137.1.11 #define SHR(x, n) (x >> n)

7.137.2 Function Documentation

7.137.2.1 void sha4 (unsigned char * *input*, int *ilen*, unsigned char *output*[64], int *is384*)

Output = SHA-512(*input* buffer).

Parameters

input buffer holding the data
ilen length of the input data
output SHA-384/512 checksum result
is384 0 = use SHA512, 1 = use SHA384

Definition at line 312 of file sha4.c.

References sha4_finish(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac_starts().

7.137.2.2 int sha4_file (char *path, unsigned char output[64], int is384)

Output = SHA-512(file contents).

Parameters

path input file name

output SHA-384/512 checksum result

is384 0 = use SHA512, 1 = use SHA384

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 327 of file sha4.c.

References buf, f, sha4_finish(), sha4_starts(), and sha4_update().

7.137.2.3 void sha4_finish (sha4_context *ctx, unsigned char output[64])

SHA-512 final digest.

Parameters

ctx SHA-512 context

output SHA-384/512 checksum result

Definition at line 276 of file sha4.c.

References int64, sha4_context::is384, PUT_UINT64_BE, sha4_padding, sha4_update(), sha4_context::state, and sha4_context::total.

Referenced by sha4(), sha4_file(), sha4_hmac_finish(), and sha4_self_test().

7.137.2.4 void sha4_hmac (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[64], int is384)

Output = HMAC-SHA-512(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-SHA-384/512 result

is384 0 = use SHA512, 1 = use SHA384

Definition at line 419 of file sha4.c.

References sha4_hmac_finish(), sha4_hmac_starts(), and sha4_hmac_update().

7.137.2.5 void sha4_hmac_finish (sha4_context * *ctx*, unsigned char *output*[64])

SHA-512 HMAC final digest.

Parameters

ctx HMAC context

output SHA-384/512 HMAC checksum result

Definition at line 399 of file sha4.c.

References sha4_context::is384, sha4_context::opad, sha4_finish(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

7.137.2.6 void sha4_hmac_starts (sha4_context * *ctx*, unsigned char * *key*, int *keylen*, int *is384*)

SHA-512 HMAC context setup.

Parameters

ctx HMAC context to be initialized

is384 0 = use SHA512, 1 = use SHA384

key HMAC secret key

keylen length of the HMAC key

Definition at line 359 of file sha4.c.

References sha4_context::ipad, sha4_context::opad, sha4(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

7.137.2.7 void sha4_hmac_update (sha4_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-512 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 390 of file sha4.c.

References sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

7.137.2.8 static void sha4_process (sha4_context * *ctx*, unsigned char *data*[128]) [static]

Definition at line 149 of file sha4.c.

References F, GET_UINT64_BE, int64, K, P, S0, S1, and sha4_context::state.

Referenced by sha4_update().

7.137.2.9 int sha4_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 654 of file sha4.c.

References buf, sha4_finish(), sha4_hmac_finish(), sha4_hmac_starts(), sha4_hmac_test_buf, sha4_hmac_test buflen, sha4_hmac_test_key, sha4_hmac_test_keylen, sha4_hmac_test_sum, sha4_hmac_update(), sha4_starts(), sha4_test_buf, sha4_test buflen, sha4_test_sum, and sha4_update().

Referenced by main().

7.137.2.10 void sha4_starts (sha4_context * *ctx*, int *is384*)

SHA-512 context setup.

Parameters

ctx context to be initialized

is384 0 = use SHA512, 1 = use SHA384

Definition at line 116 of file sha4.c.

References sha4_context::is384, sha4_context::state, sha4_context::total, and UL64.

Referenced by sha4(), sha4_file(), sha4_hmac_finish(), sha4_hmac_starts(), and sha4_self_test().

7.137.2.11 void sha4_update (sha4_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-512 process buffer.

Parameters

ctx SHA-512 context

input buffer holding the data

ilen length of the input data

Definition at line 221 of file sha4.c.

References sha4_context::buffer, int64, sha4_process(), and sha4_context::total.

Referenced by sha4(), sha4_file(), sha4_finish(), sha4_hmac_finish(), sha4_hmac_starts(), sha4_hmac_update(), and sha4_self_test().

7.137.3 Variable Documentation

7.137.3.1 const unsigned int64 K[80] [static]

Definition at line 69 of file sha4.c.

7.137.3.2 unsigned char sha4_hmac_test_buf[7][153] [static]

Initial value:

Definition at line 526 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.3 const int sha4_hmac_test_buflen[7] [static]

Initial value:

```
{  
    8, 28, 50, 50, 20, 54, 152  
}
```

Definition at line 547 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.4 unsigned char sha4_hmac_test_key[7][26] [static]

Initial value:

Definition at line 506 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.5 const int sha4_hmac_test_keylen[7] [static]

Initial value:

```
{
    20, 4, 20, 25, 20, 131, 131
}
```

Definition at line 521 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.6 const unsigned char sha4_hmac_test_sum[14][64] [static]

Definition at line 552 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.7 const unsigned char sha4_padding[128] [static]

Initial value:

```
{
0x80, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
}
```

Definition at line 261 of file sha4.c.

Referenced by sha4_finish().

7.137.3.8 unsigned char sha4_test_buf[3][113] [static]

Initial value:

```
{
{ "abc" },
{ "abcdefghijklmnopqrstuvwxyz" },
{ " " }
}
```

Definition at line 437 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.9 const int sha4_test buflen[3] [static]**Initial value:**

```
{  
    3, 112, 1000  
}
```

Definition at line 445 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.10 const unsigned char sha4_test sum[6][64] [static]

Definition at line 450 of file sha4.c.

Referenced by sha4_self_test().

7.138 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_cli.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/debug.h"
#include "xyssl/ssl.h"
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
```

Functions

- static int [ssl_write_client_hello \(ssl_context *ssl\)](#)
- static int [ssl_parse_server_hello \(ssl_context *ssl\)](#)
- static int [ssl_parse_server_key_exchange \(ssl_context *ssl\)](#)
- static int [ssl_parse_certificate_request \(ssl_context *ssl\)](#)
- static int [ssl_parse_server_hello_done \(ssl_context *ssl\)](#)
- static int [ssl_write_client_key_exchange \(ssl_context *ssl\)](#)
- static int [ssl_write_certificate_verify \(ssl_context *ssl\)](#)
- int [ssl_handshake_client \(ssl_context *ssl\)](#)

7.138.1 Function Documentation

7.138.1.1 int ssl_handshake_client (ssl_context * *ssl*)

Definition at line 660 of file [ssl_cli.c](#).

References [SSL_CERTIFICATE_REQUEST](#), [SSL_CERTIFICATE_VERIFY](#), [SSL_CLIENT_CERTIFICATE](#), [SSL_CLIENT_CHANGE_CIPHER_SPEC](#), [SSL_CLIENT_FINISHED](#), [SSL_CLIENT_HELLO](#), [SSL_CLIENT_KEY_EXCHANGE](#), [SSL_DEBUG_MSG](#), [SSL_FLUSH_BUFFERS](#), [ssl_flush_output\(\)](#), [SSL_HANDSHAKE_OVER](#), [SSL_HELLO_REQUEST](#), [ssl_parse_certificate\(\)](#), [ssl_parse_certificate_request\(\)](#), [ssl_parse_change_cipher_spec\(\)](#), [ssl_parse_finished\(\)](#), [ssl_parse_server_hello\(\)](#), [ssl_parse_server_hello_done\(\)](#), [ssl_parse_server_key_exchange\(\)](#), [SSL_SERVER_CERTIFICATE](#), [SSL_SERVER_CHANGE_CIPHER_SPEC](#), [SSL_SERVER_FINISHED](#), [SSL_SERVER_HELLO](#), [SSL_SERVER_HELLO_DONE](#), [SSL_SERVER_KEY_EXCHANGE](#), [ssl_write_certificate\(\)](#), [ssl_write_certificate_verify\(\)](#), [ssl_write_change_cipher_spec\(\)](#), [ssl_write_client_hello\(\)](#), [ssl_write_client_key_exchange\(\)](#), [ssl_write_finished\(\)](#), [_ssl_context::state](#), and [XYSSL_ERR_SSL_BAD_INPUT_DATA](#).

Referenced by [ssl_handshake\(\)](#).

7.138.1.2 static int ssl_parse_certificate_request (ssl_context * *ssl*) [static]

Definition at line 428 of file [ssl_cli.c](#).

References [_ssl_context::client_auth](#), [_ssl_context::in_msg](#), [_ssl_context::in_msctype](#), [SSL_DEBUG_MSG](#), [SSL_DEBUG_RET](#), [SSL_HS_CERTIFICATE_REQUEST](#), [SSL_MSG_HANDSHAKE](#), [ssl_read_record\(\)](#), [_ssl_context::state](#), and [XYSSL_ERR_SSL_UNEXPECTED_MESSAGE](#).

Referenced by [ssl_handshake_client\(\)](#).

7.138.1.3 static int ssl_parse_server_hello (ssl_context *ssl) [static]

Definition at line 168 of file ssl_cli.c.

References `buf`, `_ssl_session::cipher`, `_ssl_context::ciphers`, `_ssl_session::id`, `_ssl_context::in_hflen`, `_ssl_context::in_msg`, `_ssl_context::in_msghash`, `_ssl_session::length`, `_ssl_context::minor_ver`, `_ssl_context::randbytes`, `_ssl_context::resume`, `_ssl_context::session`, `SSL_COMPRESS_NULL`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_derive_keys()`, `SSL_HS_SERVER_HELLO`, `SSL_MAJOR_VERSION_3`, `SSL_MINOR_VERSION_0`, `SSL_MINOR_VERSION_1`, `SSL_MSG_HANDSHAKE`, `ssl_read_record()`, `SSL_SERVER_CHANGE_CIPHER_SPEC`, `_ssl_session::start`, `_ssl_context::state`, `XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `ssl_handshake_client()`.

7.138.1.4 static int ssl_parse_server_hello_done (ssl_context *ssl) [static]

Definition at line 471 of file ssl_cli.c.

References `_ssl_context::client_auth`, `_ssl_context::in_hflen`, `_ssl_context::in_msg`, `_ssl_context::in_msghash`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_SERVER_HELLO_DONE`, `SSL_MSG_HANDSHAKE`, `ssl_read_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO_DONE`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `ssl_handshake_client()`.

7.138.1.5 static int ssl_parse_server_key_exchange (ssl_context *ssl) [static]

Definition at line 312 of file ssl_cli.c.

References `_ssl_session::cipher`, `_ssl_context::dhm_ctx`, `dhm_read_params()`, `dhm_context::G`, `dhm_context::GY`, `_ssl_context::in_hflen`, `_ssl_context::in_msg`, `_ssl_context::in_msghash`, `dhm_context::len`, `rsa_context::len`, `md5()`, `md5_finish()`, `md5_starts()`, `md5_update()`, `dhm_context::P`, `_ssl_context::peer_cert`, `_ssl_context::randbytes`, `_x509_cert::rsa`, `rsa_pkcs1_verify()`, `RSA_PUBLIC`, `RSA_RAW`, `_ssl_context::session`, `sha1()`, `sha1_finish()`, `sha1_starts()`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MPI`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_EDH_RSA_AES_256_SHA`, `SSL_EDH_RSA_DES_168_SHA`, `SSL_HS_SERVER_KEY_EXCHANGE`, `SSL_MSG_HANDSHAKE`, `ssl_read_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_EXCHANGE`, `XYSSL_ERR_SSL_FEATURE_UNAVAILABLE`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `ssl_handshake_client()`.

7.138.1.6 static int ssl_write_certificate_verify (ssl_context *ssl) [static]

Definition at line 604 of file ssl_cli.c.

References `_ssl_context::client_auth`, `rsa_context::len`, `_ssl_context::out_msg`, `_ssl_context::out_msghash`, `_ssl_context::out_msghash`, `_ssl_context::rsa_key`, `rsa_pkcs1_sign()`, `RSA_PRIVATE`, `RSA_RAW`, `ssl_calc_verify()`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_CERTIFICATE_VERIFY`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED`.

Referenced by `ssl_handshake_client()`.

7.138.1.7 static int ssl_write_client_hello (ssl_context *ssl) [static]

Definition at line 33 of file ssl_cli.c.

References buf, _ssl_context::ciphers, _ssl_context::f_rng, _ssl_context::hostname, _ssl_context::hostname_len, _ssl_session::id, _ssl_session::length, _ssl_context::major_ver, _ssl_context::max_major_ver, _ssl_context::max_minor_ver, _ssl_context::minor_ver, _ssl_context::out_msg, _ssl_context::out_msrlen, _ssl_context::out_msctype, _ssl_context::p_rng, _ssl_context::randbytes, _ssl_context::resume, _ssl_context::session, SSL_COMPRESS_NULL, SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HS_CLIENT_HELLO, SSL_MAJOR_VERSION_3, SSL_MINOR_VERSION_0, SSL_MINOR_VERSION_1, SSL_MSG_HANDSHAKE, ssl_write_record(), _ssl_session::start, _ssl_context::state, _ssl_context::timeout, TLS_EXT_SERVERNAME, and TLS_EXT_SERVERNAME_HOSTNAME.

Referenced by ssl_handshake_client().

7.138.1.8 static int ssl_write_client_key_exchange (ssl_context *ssl) [static]

Definition at line 506 of file ssl_cli.c.

References _ssl_session::cipher, dhm_calc_secret(), _ssl_context::dhm_ctx, dhm_make_public(), _ssl_context::f_rng, dhm_context::GX, dhm_context::K, rsa_context::len, dhm_context::len, _ssl_context::max_major_ver, _ssl_context::max_minor_ver, _ssl_context::minor_ver, _ssl_context::out_msg, _ssl_context::out_msrlen, _ssl_context::out_msctype, _ssl_context::p_rng, _ssl_context::peer_cert, _ssl_context::pmslen, _ssl_context::premaster, _x509_cert::rsa, rsa_pkcs1_encrypt(), RSA_PUBLIC, _ssl_context::session, SSL_DEBUG_MPI, SSL_DEBUG_MSG, SSL_DEBUG_RET, ssl_derive_keys(), SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA DES_168_SHA, SSL_HS_CLIENT_KEY_EXCHANGE, SSL_MINOR_VERSION_0, SSL_MSG_HANDSHAKE, ssl_write_record(), _ssl_context::state, dhm_context::X, and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_handshake_client().

7.139 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_srv.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/debug.h"
#include "xyssl/ssl.h"
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
```

Functions

- static int `ssl_parse_client_hello (ssl_context *ssl)`
- static int `ssl_write_server_hello (ssl_context *ssl)`
- static int `ssl_write_certificate_request (ssl_context *ssl)`
- static int `ssl_write_server_key_exchange (ssl_context *ssl)`
- static int `ssl_write_server_hello_done (ssl_context *ssl)`
- static int `ssl_parse_client_key_exchange (ssl_context *ssl)`
- static int `ssl_parse_certificate_verify (ssl_context *ssl)`
- int `ssl_handshake_server (ssl_context *ssl)`

7.139.1 Function Documentation

7.139.1.1 int ssl_handshake_server (ssl_context * *ssl*)

Definition at line 819 of file ssl_srv.c.

References `SSL_CERTIFICATE_REQUEST`, `SSL_CERTIFICATE_VERIFY`, `SSL_CLIENT_CERTIFICATE`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_CLIENT_FINISHED`, `SSL_CLIENT_HELLO`, `SSL_CLIENT_KEY_EXCHANGE`, `SSL_DEBUG_MSG`, `SSL_FLUSH_BUFFERS`, `ssl_flush_output()`, `SSL_HANDSHAKE_OVER`, `SSL_HELLO_REQUEST`, `ssl_parse_certificate()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `SSL_SERVER_CERTIFICATE`, `SSL_SERVER_CHANGE_CIPHER_SPEC`, `SSL_SERVER_FINISHED`, `SSL_SERVER_HELLO`, `SSL_SERVER_HELLO_DONE`, `SSL_SERVER_KEY_EXCHANGE`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_change_cipher_spec()`, `ssl_write_finished()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, `ssl_write_server_key_exchange()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_BAD_INPUT_DATA`.

Referenced by `ssl_handshake()`.

7.139.1.2 static int ssl_parse_certificate_verify (ssl_context * *ssl*) [static]

Definition at line 758 of file ssl_srv.c.

References `_ssl_context::in_hflen`, `_ssl_context::in_msg`, `_ssl_context::in_msctype`, `rsa_context::len`, `_ssl_context::peer_cert`, `_x509_cert::rsa`, `rsa_pkcs1_verify()`, `RSA_PUBLIC`, `RSA_RAW`, `ssl_calc_verify()`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_CERTIFICATE_VERIFY`, `SSL_`

MSG_HANDSHAKE, `ssl_read_record()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY`.

Referenced by `ssl_handshake_server()`.

7.139.1.3 static int ssl_parse_client_hello (ssl_context * *ssl*) [static]

Definition at line 33 of file `ssl_srv.c`.

References `buf`, `_ssl_session::cipher`, `_ssl_context::ciphers`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_session::id`, `_ssl_context::in_hdr`, `_ssl_context::in_left`, `_ssl_context::in_msg`, `_ssl_session::length`, `_ssl_context::major_ver`, `_ssl_context::max_major_ver`, `_ssl_context::max_minor_ver`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::randbytes`, `_ssl_context::session`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_fetch_input()`, `SSL_HS_CLIENT_HELLO`, `SSL_MAJOR_VERSION_3`, `SSL_MINOR_VERSION_1`, `SSL_MSG_HANDSHAKE`, `_ssl_context::state`, `XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO`, and `XYSSL_ERR_SSL_NO_CIPHER_CHOSEN`.

Referenced by `ssl_handshake_server()`.

7.139.1.4 static int ssl_parse_client_key_exchange (ssl_context * *ssl*) [static]

Definition at line 634 of file `ssl_srv.c`.

References `_ssl_session::cipher`, `dhm_calc_secret()`, `_ssl_context::dhm_ctx`, `dhm_read_public()`, `_ssl_context::f_rng`, `dhm_context::GY`, `_ssl_context::in_hrlen`, `_ssl_context::in_msg`, `_ssl_context::in_msctype`, `dhm_context::K`, `rsa_context::len`, `dhm_context::len`, `_ssl_context::max_major_ver`, `_ssl_context::max_minor_ver`, `_ssl_context::minor_ver`, `_ssl_context::p_rng`, `_ssl_context::pmslen`, `_ssl_context::premaster`, `_ssl_context::rsa_key`, `rsa_pkcs1_decrypt()`, `RSA_PRIVATE`, `_ssl_context::s_set`, `_ssl_context::session`, `SSL_DEBUG_MPI`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_derive_keys()`, `SSL_EDH_RSA_AES_256_SHA`, `SSL_EDH_RSA DES_168_SHA`, `SSL_HS_CLIENT_KEY_EXCHANGE`, `SSL_MINOR_VERSION_0`, `SSL_MSG_HANDSHAKE`, `ssl_read_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_EXCHANGE`, and `XYSSL_ERR_SSL_FEATURE_UNAVAILABLE`.

Referenced by `ssl_handshake_server()`.

7.139.1.5 static int ssl_write_certificate_request (ssl_context * *ssl*) [static]

Definition at line 447 of file `ssl_srv.c`.

References `_ssl_context::authmode`, `buf`, `_ssl_context::ca_chain`, `_x509_buf::len`, `_x509_cert::next`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msctype`, `_x509_buf::p`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_HS_CERTIFICATE_REQUEST`, `SSL_MSG_HANDSHAKE`, `SSL_VERIFY_NONE`, `ssl_write_record()`, `_ssl_context::state`, and `_x509_cert::subject_raw`.

Referenced by `ssl_handshake_server()`.

7.139.1.6 static int ssl_write_server_hello (ssl_context * *ssl*) [static]

Definition at line 349 of file `ssl_srv.c`.

References `buf`, `_ssl_session::cipher`, `_ssl_context::f_rng`, `_ssl_session::id`, `_ssl_session::length`, `_ssl_context::major_ver`, `_ssl_context::minor_ver`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msctype`, `_ssl_context::p_rng`, `_ssl_context::randbytes`, `_ssl_context::resume`, `_ssl_context::s_get`, `_ssl_context::session`, `SSL_COMPRESS_NULL`, `SSL_DEBUG_BUF`, `SSL_DEBUG_-`

MSG, ssl_derive_keys(), SSL_HS_SERVER_HELLO, SSL_MSG_HANDSHAKE, SSL_SERVER_-
CHANGE_CIPHER_SPEC, ssl_write_record(), and _ssl_context::state.

Referenced by ssl_handshake_server().

7.139.1.7 static int ssl_write_server_hello_done (ssl_context *ssl) [static]

Definition at line 611 of file ssl_srv.c.

References _ssl_context::out_msg, _ssl_context::out_msflen, _ssl_context::out_msftype, SSL_DEBUG_-
MSG, SSL_DEBUG_RET, SSL_HS_SERVER_HELLO_DONE, SSL_MSG_HANDSHAKE, ssl_write_-
record(), and _ssl_context::state.

Referenced by ssl_handshake_server().

7.139.1.8 static int ssl_write_server_key_exchange (ssl_context *ssl) [static]

Definition at line 512 of file ssl_srv.c.

References _ssl_session::cipher, _ssl_context::dhm_ctx, dhm_make_params(), _ssl_context::f_rng,
dhm_context::G, dhm_context::GX, rsa_context::len, md5(), md5_finish(), md5_starts(), md5_update(),
_ssl_context::out_msg, _ssl_context::out_msflen, _ssl_context::out_msftype, dhm_context::P, _ssl_-
context::p_rng, _ssl_context::randbytes, _ssl_context::rsa_key, rsa_pkcs1_sign(), RSA_PRIVATE,
RSA_RAW, _ssl_context::session, sha1(), sha1_finish(), sha1_starts(), sha1_update(), SSL_DEBUG_-
BUF, SSL_DEBUG_MPI, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_EDH_RSA_AES_256_SHA,
SSL_EDH_RSA DES_168_SHA, SSL_HS_SERVER_KEY_EXCHANGE, SSL_MSG_HANDSHAKE,
ssl_write_record(), _ssl_context::state, dhm_context::X, and XYSSL_ERR_SSL_FEATURE_-
UNAVAILABLE.

Referenced by ssl_handshake_server().

7.140 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_tls.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/aes.h"
#include "xyssl/arc4.h"
#include "xyssl/des.h"
#include "xyssl/debug.h"
#include "xyssl/ssl.h"
#include <string.h>
#include <stdlib.h>
#include <time.h>
```

Functions

- static int `tls1_prf` (unsigned char *secret, int slen, char *label, unsigned char *random, int rlen, unsigned char *dstbuf, int dlen)
- int `ssl_derive_keys` (`ssl_context` **ssl)
- void `ssl_calc_verify` (`ssl_context` *ssl, unsigned char hash[36])
- static void `ssl_mac_md5` (unsigned char *secret, unsigned char *buf, int len, unsigned char *ctr, int type)
- static void `ssl_mac_sha1` (unsigned char *secret, unsigned char *buf, int len, unsigned char *ctr, int type)
- static int `ssl_encrypt_buf` (`ssl_context` *ssl)
- static int `ssl_decrypt_buf` (`ssl_context` *ssl)
- int `ssl_fetch_input` (`ssl_context` *ssl, int nb_want)
- int `ssl_flush_output` (`ssl_context` **ssl)
- int `ssl_write_record` (`ssl_context` *ssl)
- int `ssl_read_record` (`ssl_context` *ssl)
- int `ssl_write_certificate` (`ssl_context` *ssl)
- int `ssl_parse_certificate` (`ssl_context` *ssl)
- int `ssl_write_change_cipher_spec` (`ssl_context` *ssl)
- int `ssl_parse_change_cipher_spec` (`ssl_context` *ssl)
- static void `ssl_calc_finished` (`ssl_context` *ssl, unsigned char *buf, int from, `md5_context` *md5, `sha1_context` *sha1)
- int `ssl_write_finished` (`ssl_context` *ssl)
- int `ssl_parse_finished` (`ssl_context` *ssl)
- int `ssl_init` (`ssl_context` *ssl)

Initialize an SSL context.

- void `ssl_set_endpoint` (`ssl_context` *ssl, int endpoint)

Set the current endpoint type.

- void `ssl_set_authmode` (`ssl_context` *ssl, int authmode)

Set the certificate verification mode.

- void `ssl_set_rng` (`ssl_context` *ssl, int(*`f_rng`)(void *), void *`p_rng`)
Set the random number generator callback.
- void `ssl_set_dbg` (`ssl_context` *ssl, void(*`f_dbg`)(void *, int, char *), void *`p_dbg`)
Set the debug callback.
- void `ssl_set_bio` (`ssl_context` *ssl, int(*`f_recv`)(void *, unsigned char *, int), void *`p_recv`, int(*`f_send`)(void *, unsigned char *, int), void *`p_send`)
Set the underlying BIO read and write callbacks.
- void `ssl_set_scb` (`ssl_context` *ssl, int(*`s_get`)(`ssl_context` *), int(*`s_set`)(`ssl_context` *))
Set the session callbacks (server-side only).
- void `ssl_set_session` (`ssl_context` *ssl, int resume, int timeout, `ssl_session` *session)
Set the session resuming flag, timeout and data.
- void `ssl_set_ciphers` (`ssl_context` *ssl, int *ciphers)
Set the list of allowed ciphersuites.
- void `ssl_set_ca_chain` (`ssl_context` *ssl, `x509_cert` *ca_chain, char *peer_cn)
Set the data required to verify peer certificate.
- void `ssl_set_own_cert` (`ssl_context` *ssl, `x509_cert` *own_cert, `rsa_context` *rsa_key)
Set own certificate and private key.
- int `ssl_set_dh_param` (`ssl_context` *ssl, char *`dhm_P`, char *`dhm_G`)
Set the Diffie-Hellman public P and G values, read as hexadecimal strings (server-side only).
- int `ssl_set_hostname` (`ssl_context` *ssl, char *hostname)
Set hostname for ServerName TLS Extension.
- int `ssl_get_bytes_avail` (`ssl_context` *ssl)
Return the number of data bytes available to read.
- int `ssl_get_verify_result` (`ssl_context` *ssl)
Return the result of the certificate verification.
- char * `ssl_get_cipher` (`ssl_context` *ssl)
Return the name of the current cipher.
- int `ssl_handshake` (`ssl_context` *ssl)
Perform the SSL handshake.
- int `ssl_read` (`ssl_context` *ssl, unsigned char *`buf`, int len)
Read at most 'len' application data bytes.
- int `ssl_write` (`ssl_context` *ssl, unsigned char *`buf`, int len)
Write exactly 'len' application data bytes.
- int `ssl_close_notify` (`ssl_context` *ssl)

Notify the peer that the connection is being closed.

- `void ssl_free (ssl_context *ssl)`

Free an SSL context.

Variables

- `int ssl_default_ciphers []`

7.140.1 Function Documentation

7.140.1.1 static void ssl_calc_finished (ssl_context * *ssl*, unsigned char * *buf*, int *from*, md5_context * *md5*, sha1_context * *sha1*) [static]

Definition at line 1344 of file ssl_tls.c.

References `_ssl_session::master`, `md5_finish()`, `md5_starts()`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::session`, `sha1_finish()`, `sha1_starts()`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_IS_CLIENT`, `SSL_MINOR_VERSION_0`, `sha1_context::state`, `md5_context::state`, and `tls1_prf()`.

Referenced by `ssl_parse_finished()`, and `ssl_write_finished()`.

7.140.1.2 void ssl_calc_verify (ssl_context * *ssl*, unsigned char *hash*[36])

Definition at line 335 of file ssl_tls.c.

References `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_session::master`, `md5()`, `md5_finish()`, `md5_starts()`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::session`, `sha1()`, `sha1_finish()`, `sha1_starts()`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, and `SSL_MINOR_VERSION_0`.

Referenced by `ssl_parse_certificate_verify()`, and `ssl_write_certificate_verify()`.

7.140.1.3 int ssl_close_notify (ssl_context * *ssl*)

Notify the peer that the connection is being closed.

Definition at line 1904 of file ssl_tls.c.

References `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `SSL_ALERT_CLOSE_NOTIFY`, `SSL_ALERT_WARNING`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_flush_output()`, `SSL_HANDSHAKE_OVER`, `SSL_MSG_ALERT`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `main()`, and `ssl_test()`.

7.140.1.4 static int ssl_decrypt_buf (ssl_context * *ssl*) [static]

Definition at line 555 of file ssl_tls.c.

References `aes_crypt_cbc()`, `AES_DECRYPT`, `arc4_crypt()`, `_ssl_context::ctx_dec`, `des3_crypt_cbc()`, `DES_DECRYPT`, `_ssl_context::in_ctr`, `_ssl_context::in_hdr`, `_ssl_context::in_msg`, `_ssl_context::in_msflen`, `_ssl_context::in_msftype`, `_ssl_context::iv_dec`, `_ssl_context::ivlen`, `_ssl_context::mac_dec`, `_ssl_context::maclen`, `md5_hmac()`, `_ssl_context::minlen`, `_ssl_context::minor_ver`, `_ssl_context::nb`,

zero, sha1_hmac(), SSL_DEBUG_BUF, SSL_DEBUG_MSG, ssl_mac_md5(), ssl_mac_sha1(), SSL_MINUS_MINOR_VERSION_0, XYSSL_ERR_SSL_FEATURE_UNAVAILABLE, and XYSSL_ERR_SSL_INVALID_MAC.

Referenced by ssl_read_record().

7.140.1.5 int ssl_derive_keys (ssl_context *ssl)

Definition at line 106 of file ssl_tls.c.

References aes_setkey_dec(), aes_setkey_enc(), arc4_setup(), _ssl_session::cipher, _ssl_context::ctx_dec, _ssl_context::ctx_enc, des3_set3key_dec(), des3_set3key_enc(), _ssl_context::endpoint, _ssl_context::iv_dec, _ssl_context::iv_enc, _ssl_context::ivlen, _ssl_context::keylen, _ssl_context::mac_dec, _ssl_context::mac_enc, _ssl_context::maclen, _ssl_session::master, md5(), md5_finish(), md5_starts(), md5_update(), _ssl_context::minlen, _ssl_context::minor_ver, _ssl_context::pmslen, _ssl_context::premaster, _ssl_context::randbytes, _ssl_context::resume, _ssl_context::session, sha1(), sha1_finish(), sha1_starts(), sha1_update(), SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA_DES_168_SHA, ssl_get_cipher(), SSL_IS_CLIENT, SSL_MINUS_MINOR_VERSION_0, SSL_RSA_AES_128_SHA, SSL_RSA_AES_256_SHA, SSL_RSA_DES_168_SHA, SSL_RSA_RC4_128_MD5, SSL_RSA_RC4_128_SHA, tls1_prf(), and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_parse_client_key_exchange(), ssl_parse_server_hello(), ssl_write_client_key_exchange(), and ssl_write_server_hello().

7.140.1.6 static int ssl_encrypt_buf (ssl_context *ssl) [static]

Definition at line 448 of file ssl_tls.c.

References aes_crypt_cbc(), AES_ENCRYPT, arc4_crypt(), _ssl_context::ctx_enc, des3_crypt_cbc(), DES_ENCRYPT, _ssl_context::iv_enc, _ssl_context::ivlen, _ssl_context::mac_enc, _ssl_context::maclen, md5_hmac(), _ssl_context::minor_ver, _ssl_context::out_ctr, _ssl_context::out_msg, _ssl_context::out_msrlen, _ssl_context::out_msctype, sha1_hmac(), SSL_DEBUG_BUF, SSL_DEBUG_MSG, ssl_mac_md5(), ssl_mac_sha1(), SSL_MINUS_MINOR_VERSION_0, and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_write_record().

7.140.1.7 int ssl_fetch_input (ssl_context *ssl, int nb_want)

Definition at line 727 of file ssl_tls.c.

References _ssl_context::f_recv, _ssl_context::in_hdr, _ssl_context::in_left, _ssl_context::p_recv, SSL_DEBUG_MSG, and SSL_DEBUG_RET.

Referenced by ssl_parse_client_hello(), and ssl_read_record().

7.140.1.8 int ssl_flush_output (ssl_context *ssl)

Definition at line 756 of file ssl_tls.c.

References buf, _ssl_context::f_send, _ssl_context::out_hdr, _ssl_context::out_left, _ssl_context::out_msrlen, _ssl_context::p_send, SSL_DEBUG_MSG, and SSL_DEBUG_RET.

Referenced by ssl_close_notify(), ssl_handshake_client(), ssl_handshake_server(), ssl_write(), and ssl_write_record().

7.140.1.9 void ssl_free (ssl_context * *ssl*)

Free an SSL context.

Definition at line 1938 of file ssl_tls.c.

References `_ssl_context::dhm_ctx`, `dhm_free()`, `_ssl_context::hostname`, `_ssl_context::hostname_len`, `_ssl_context::in_ctr`, `_ssl_context::out_ctr`, `_ssl_context::peer_cert`, `SSL_BUFFER_LEN`, `SSL_DEBUG_MSG`, and `x509_free()`.

Referenced by `main()`, and `ssl_test()`.

7.140.1.10 int ssl_get_bytes_avail (ssl_context * *ssl*)

Return the number of data bytes available to read.

Parameters

ssl SSL context

Returns

how many bytes are available in the read buffer

Definition at line 1691 of file ssl_tls.c.

References `_ssl_context::in_msrlen`, and `_ssl_context::in_offt`.

7.140.1.11 char* ssl_get_cipher (ssl_context * *ssl*)

Return the name of the current cipher.

Parameters

ssl SSL context

Returns

a string containing the cipher name

Definition at line 1701 of file ssl_tls.c.

References `_ssl_session::cipher`, `_ssl_context::session`, `SSL_EDH_RSA_AES_256_SHA`, `SSL_EDH_RSA_DES_168_SHA`, `SSL_RSA_AES_128_SHA`, `SSL_RSA_AES_256_SHA`, `SSL_RSA_DES_168_SHA`, `SSL_RSA_RC4_128_MD5`, and `SSL_RSA_RC4_128_SHA`.

Referenced by `main()`, and `ssl_derive_keys()`.

7.140.1.12 int ssl_get_verify_result (ssl_context * *ssl*)

Return the result of the certificate verification.

Parameters

ssl SSL context

Returns

0 if successful, or a combination of: BADCERT_EXPIRED BADCERT_REVOKED BADCERT_-CN_MISMATCH BADCERT_NOT_TRUSTED

Definition at line 1696 of file ssl_tls.c.

References _ssl_context::verify_result.

Referenced by main().

7.140.1.13 int ssl_handshake (ssl_context * *ssl*)

Perform the SSL handshake.

Parameters

ssl SSL context

Returns

0 if successful, XYSSL_ERR_NET_TRY AGAIN, or a specific SSL error code.

Definition at line 1767 of file ssl_tls.c.

References _ssl_context::endpoint, SSL_DEBUG_MSG, ssl_handshake_client(), ssl_handshake_server(), SSL_IS_CLIENT, SSL_IS_SERVER, and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by main(), ssl_read(), and ssl_write().

7.140.1.14 int ssl_init (ssl_context * *ssl*)

Initialize an SSL context.

Parameters

ssl SSL context

Returns

0 if successful, or 1 if memory allocation failed

Definition at line 1542 of file ssl_tls.c.

References _ssl_context::fin_md5, _ssl_context::fin_sha1, _ssl_context::hostname, _ssl_-context::hostname_len, _ssl_context::in_ctr, _ssl_context::in_hdr, _ssl_context::in_msg, md5_starts(), _ssl_context::out_ctr, _ssl_context::out_hdr, _ssl_context::out_msg, sha1_starts(), SSL_BUFFER_LEN, and SSL_DEBUG_MSG.

Referenced by main(), and ssl_test().

7.140.1.15 static void ssl_mac_md5 (unsigned char * *secret*, unsigned char * *buf*, int *len*, unsigned char * *ctr*, int *type*) [static]

Definition at line 387 of file ssl_tls.c.

References md5(), md5_finish(), md5_starts(), and md5_update().

Referenced by ssl_decrypt_buf(), and ssl_encrypt_buf().

7.140.1.16 static void ssl_mac_sha1 (unsigned char * secret, unsigned char * buf, int len, unsigned char * ctr, int type) [static]

Definition at line 416 of file ssl_tls.c.

References sha1(), sha1_finish(), sha1_starts(), and sha1_update().

Referenced by ssl_decrypt_buf(), and ssl_encrypt_buf().

7.140.1.17 int ssl_parse_certificate (ssl_context * ssl)

Definition at line 1140 of file ssl_tls.c.

References _ssl_context::authmode, _ssl_context::ca_chain, _ssl_context::endpoint, _ssl_context::in_hrlen, _ssl_context::in_msg, _ssl_context::in_msflen, _ssl_context::in_msctype, _ssl_context::minor_ver, _ssl_context::peer_cert, _ssl_context::peer_cn, SSL_ALERT_NO_CERTIFICATE, SSL_ALERT_WARNING, SSL_DEBUG_CRT, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HS_CERTIFICATE, SSL_IS_SERVER, SSL_MINOR_VERSION_0, SSL_MSG_ALERT, SSL_MSG_HANDSHAKE, ssl_read_record(), SSL_VERIFY_NONE, SSL_VERIFY_OPTIONAL, SSL_VERIFY_REQUIRED, _ssl_context::state, _ssl_context::verify_result, x509parse_crt(), x509parse_verify(), XYSSL_ERR_SSL_BAD_HS_CERTIFICATE, XYSSL_ERR_SSL_CA_CHAIN_REQUIRED, XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client(), and ssl_handshake_server().

7.140.1.18 int ssl_parse_change_cipher_spec (ssl_context * ssl)

Definition at line 1311 of file ssl_tls.c.

References _ssl_context::do_crypt, _ssl_context::in_msg, _ssl_context::in_msflen, _ssl_context::in_msctype, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_MSG_CHANGE_CIPHER_SPEC, ssl_read_record(), _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client(), and ssl_handshake_server().

7.140.1.19 int ssl_parse_finished (ssl_context * ssl)

Definition at line 1480 of file ssl_tls.c.

References buf, _ssl_context::do_crypt, _ssl_context::endpoint, _ssl_context::fin_md5, _ssl_context::fin_sha1, _ssl_context::in_hrlen, _ssl_context::in_msg, _ssl_context::in_msctype, md5(), _ssl_context::minor_ver, _ssl_context::resume, sha1(), ssl_calc_finished(), SSL_CLIENT_CHANGE_CIPHER_SPEC, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HANDSHAKE_OVER, SSL_HS_FINISHED, SSL_IS_CLIENT, SSL_IS_SERVER, SSL_MINOR_VERSION_0, SSL_MSG_HANDSHAKE, ssl_read_record(), _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_FINISHED, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client(), and ssl_handshake_server().

7.140.1.20 int ssl_read (ssl_context * ssl, unsigned char * buf, int len)

Read at most 'len' application data bytes.

Parameters

ssl SSL context
buf buffer that will hold the data
len how many bytes must be read

Returns

This function returns the number of bytes read, or a negative error code.

Definition at line 1791 of file ssl_tls.c.

References `_ssl_context::in_msg`, `_ssl_context::in_msrlen`, `_ssl_context::in_msatype`, `_ssl_context::in_inofft`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_handshake()`, `SSL_HANDSHAKE_OVER`, `SSL_MSG_APPLICATION_DATA`, `ssl_read_record()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `main()`, and `ssl_test()`.

7.140.1.21 int ssl_read_record (ssl_context * *ssl*)

Definition at line 842 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::in_hdr`, `_ssl_context::in_hstrlen`, `_ssl_context::in_left`, `_ssl_context::in_msg`, `_ssl_context::in_msrlen`, `_ssl_context::in_msatype`, `_ssl_context::major_ver`, `md5_update()`, `_ssl_context::minlen`, `_ssl_context::minor_ver`, `sha1_update()`, `SSL_ALERT_CLOSE_NOTIFY`, `SSL_ALERT_FATAL`, `SSL_ALERT_WARNING`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_decrypt_buf()`, `ssl_fetch_input()`, `SSL_MAX_CONTENT_LEN`, `SSL_MINOR_VERSION_0`, `SSL_MINOR_VERSION_1`, `SSL_MSG_ALERT`, `SSL_MSG_HANDSHAKE`, `XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE`, `XYSSL_ERR_SSL_INVALID_RECORD`, and `XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY`.

Referenced by `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, and `ssl_read()`.

7.140.1.22 void ssl_set_authmode (ssl_context * *ssl*, int *authmode*)

Set the certificate verification mode.

Parameters

ssl SSL context
mode can be:

`SSL_VERIFY_NONE`: peer certificate is not checked (default), this is insecure and SHOULD be avoided.

`SSL_VERIFY_OPTIONAL`: peer certificate is checked, however the handshake continues even if verification failed; [ssl_get_verify_result\(\)](#) can be called after the handshake is complete.

`SSL_VERIFY_REQUIRED`: peer *must* present a valid certificate, handshake is aborted if verification failed.

Definition at line 1589 of file ssl_tls.c.

References `_ssl_context::authmode`.

Referenced by `main()`, and `ssl_test()`.

7.140.1.23 void ssl_set_bio (ssl_context * *ssl*, int(*)(void *, unsigned char *, int) *f_recv*, void * *p_recv*, int(*)(void *, unsigned char *, int) *f_send*, void * *p_send*)

Set the underlying BIO read and write callbacks.

Parameters

ssl SSL context
f_recv read callback
p_recv read parameter
f_send write callback
p_send write parameter

Definition at line 1610 of file ssl_tls.c.

References _ssl_context::f_recv, _ssl_context::f_send, _ssl_context::p_recv, and _ssl_context::p_send.

Referenced by main(), and ssl_test().

7.140.1.24 void ssl_set_ca_chain (ssl_context * *ssl*, x509_cert * *ca_chain*, char * *peer_cn*)

Set the data required to verify peer certificate.

Parameters

ssl SSL context
ca_chain trusted CA chain
peer_cn expected peer CommonName (or NULL)

Note

TODO: add two more parameters: depth and crl

Definition at line 1641 of file ssl_tls.c.

References _ssl_context::ca_chain, and _ssl_context::peer_cn.

Referenced by main(), and ssl_test().

7.140.1.25 void ssl_set_ciphers (ssl_context * *ssl*, int * *ciphers*)

Set the list of allowed ciphersuites.

Parameters

ssl SSL context
ciphers 0-terminated list of allowed ciphers

Definition at line 1636 of file ssl_tls.c.

References _ssl_context::ciphers.

Referenced by main(), and ssl_test().

7.140.1.26 void ssl_set_dbg (ssl_context * *ssl*, void(*)(void *, int, char *) *f_dbg*, void * *p_dbg*)

Set the debug callback.

Parameters

ssl SSL context

f_dbg debug function

p_dbg debug parameter

Definition at line 1602 of file ssl_tls.c.

References _ssl_context::f_dbg, and _ssl_context::p_dbg.

Referenced by main(), and ssl_test().

7.140.1.27 int ssl_set_dh_param (ssl_context * *ssl*, char * *dhm_P*, char * *dhm_G*)

Set the Diffie-Hellman public P and G values, read as hexadecimal strings (server-side only).

Parameters

ssl SSL context

dhm_P Diffie-Hellman-Merkle modulus

dhm_G Diffie-Hellman-Merkle generator

Returns

0 if successful

Definition at line 1655 of file ssl_tls.c.

References _ssl_context::dhm_ctx, dhm_context::G, mpi_read_string(), dhm_context::P, and SSL_DEBUG_RET.

Referenced by main(), and ssl_test().

7.140.1.28 void ssl_set_endpoint (ssl_context * *ssl*, int *endpoint*)

Set the current endpoint type.

Parameters

ssl SSL context

endpoint must be SSL_IS_CLIENT or SSL_IS_SERVER

Definition at line 1584 of file ssl_tls.c.

References _ssl_context::endpoint.

Referenced by main(), and ssl_test().

7.140.1.29 int ssl_set_hostname (ssl_context * *ssl*, char * *hostname*)

Set hostname for ServerName TLS Extension.

Parameters

ssl SSL context

hostname the server hostname

Returns

0 if successful

Definition at line 1674 of file ssl_tls.c.

References _ssl_context::hostname, _ssl_context::hostname_len, and XYSSL_ERR_SSL_BAD_INPUT_DATA.

Referenced by main().

7.140.1.30 void ssl_set_own_cert (ssl_context * *ssl*, x509_cert * *own_cert*, rsa_context * *rsa_key*)

Set own certificate and private key.

Parameters

ssl SSL context

own_cert own public certificate

rsa_key own private RSA key

Definition at line 1648 of file ssl_tls.c.

References _ssl_context::own_cert, and _ssl_context::rsa_key.

Referenced by main(), and ssl_test().

7.140.1.31 void ssl_set_rng (ssl_context * *ssl*, int(*)(void *) *f_rng*, void * *p_rng*)

Set the random number generator callback.

Parameters

ssl SSL context

f_rng RNG function

p_rng RNG parameter

Definition at line 1594 of file ssl_tls.c.

References _ssl_context::f_rng, and _ssl_context::p_rng.

Referenced by main(), and ssl_test().

7.140.1.32 void ssl_set_scb (ssl_context * *ssl*, int(*)(ssl_context *) *s_get*, int(*)(ssl_context *) *s_set*)

Set the session callbacks (server-side only).

Parameters

ssl SSL context
s_get session get callback
s_set session set callback

Definition at line 1620 of file ssl_tls.c.

References _ssl_context::s_get, and _ssl_context::s_set.

Referenced by main().

7.140.1.33 void ssl_set_session (ssl_context * *ssl*, int *resume*, int *timeout*, ssl_session * *session*)

Set the session resuming flag, timeout and data.

Parameters

ssl SSL context
resume if 0 (default), the session will not be resumed
timeout session timeout in seconds, or 0 (no timeout)
session session context

Definition at line 1628 of file ssl_tls.c.

References _ssl_context::resume, _ssl_context::session, and _ssl_context::timeout.

Referenced by main(), and ssl_test().

7.140.1.34 int ssl_write (ssl_context * *ssl*, unsigned char * *buf*, int *len*)

Write exactly 'len' application data bytes.

Parameters

ssl SSL context
buf buffer holding the data
len how many bytes must be written

Returns

This function returns the number of bytes written, or a negative error code.

Note

When this function returns XYSSL_ERR_NET_TRY AGAIN, it must be called later with the *same* arguments, until it returns a positive value.

Definition at line 1857 of file ssl_tls.c.

References `_ssl_context::out_left`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_flush_output()`, `ssl_handshake()`, `SSL_HANDSHAKE_OVER`, `SSL_MAX_CONTENT_LEN`, `SSL_MSG_APPLICATION_DATA`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `main()`, and `ssl_test()`.

7.140.1.35 int ssl_write_certificate (ssl_context * *ssl*)

Definition at line 1044 of file ssl_tls.c.

References `_ssl_context::client_auth`, `_ssl_context::endpoint`, `_x509_buf::len`, `_ssl_context::minor_ver`, `_x509_cert::next`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `_ssl_context::own_cert`, `_x509_buf::p`, `_x509_cert::raw`, `SSL_ALERT_NO_CERTIFICATE`, `SSL_ALERT_WARNING`, `SSL_DEBUG_CRT`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_CERTIFICATE`, `SSL_IS_CLIENT`, `SSL_MAX_CONTENT_LEN`, `SSL_MINOR_VERSION_0`, `SSL_MSG_ALERT`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_CERTIFICATE_REQUIRED`, and `XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

7.140.1.36 int ssl_write_change_cipher_spec (ssl_context * *ssl*)

Definition at line 1287 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_MSG_CHANGE_CIPHER_SPEC`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

7.140.1.37 int ssl_write_finished (ssl_context * *ssl*)

Definition at line 1433 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::endpoint`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `md5()`, `_ssl_context::minor_ver`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `_ssl_context::resume`, `sha1()`, `ssl_calc_finished()`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HANDSHAKE_OVER`, `SSL_HS_FINISHED`, `SSL_IS_CLIENT`, `SSL_MINOR_VERSION_0`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

7.140.1.38 int ssl_write_record (ssl_context * *ssl*)

Definition at line 786 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::major_ver`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::out_hdr`, `_ssl_context::out_left`, `_ssl_context::out_msg`, `_ssl_context::out_msflen`, `_ssl_context::out_msftype`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_encrypt_buf()`, `ssl_flush_output()`, and `SSL_MSG_HANDSHAKE`.

Referenced by ssl_close_notify(), ssl_write(), ssl_write_certificate(), ssl_write_certificate_request(), ssl_write_certificate_verify(), ssl_write_change_cipher_spec(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_finished(), ssl_write_server_hello(), ssl_write_server_hello_done(), and ssl_write_server_key_exchange().

7.140.1.39 static int tls1_prf (unsigned char * secret, int slen, char * label, unsigned char * random, int rlen, unsigned char * dstbuf, int dlen) [static]

Definition at line 46 of file ssl_tls.c.

References md5_hmac(), S1, S2, sha1_hmac(), and XYSSL_ERR_SSL_BAD_INPUT_DATA.

Referenced by ssl_calc_finished(), and ssl_derive_keys().

7.140.2 Variable Documentation

7.140.2.1 int ssl_default_ciphers[]

Initial value:

```
{  
  
    SSL_EDH_RSA_AES_256_SHA,  
  
    SSL_EDH_RSA_DES_168_SHA,  
  
    SSL_RSA_AES_128_SHA,  
    SSL_RSA_AES_256_SHA,  
  
    SSL_RSA_DES_168_SHA,  
  
    SSL_RSA_RC4_128_SHA,  
    SSL_RSA_RC4_128_MD5,  
  
    0  
}
```

Definition at line 1739 of file ssl_tls.c.

Referenced by main(), and ssl_test().

7.141 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/timing.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/timing.h"
#include <unistd.h>
#include <sys/types.h>
#include <sys/time.h>
#include <signal.h>
#include <time.h>
```

Data Structures

- struct [_hr_time](#)

Functions

- unsigned long [hardclock](#) (void)
Return the CPU cycle counter value.
- unsigned long [get_timer](#) (struct [hr_time](#) *val, int reset)
Return the elapsed time in milliseconds.
 - static void [sighandler](#) (int signum)
 - void [set_alarm](#) (int seconds)
Setup an alarm clock.
 - void [m_sleep](#) (int milliseconds)
Sleep for a certain amount of time.

Variables

- static int [hardclock_init](#) = 0
- static struct timeval [tv_init](#)
- int [alarmed](#) = 0

7.141.1 Function Documentation

7.141.1.1 unsigned long [get_timer](#) (struct [hr_time](#) * *val*, int *reset*)

Return the elapsed time in milliseconds.

Parameters

val points to a timer structure

reset if set to 1, the timer is restarted

Definition at line 225 of file timing.c.

References `_hr_time::start`.

Referenced by `ssl_test()`.

7.141.1.2 **unsigned long hardclock (void)**

Return the CPU cycle counter value.

Definition at line 155 of file timing.c.

References `tv_init`.

Referenced by `main()`.

7.141.1.3 **void m_sleep (int milliseconds)**

Sleep for a certain amount of time.

Definition at line 258 of file timing.c.

7.141.1.4 **void set_alarm (int seconds)**

Setup an alarm clock.

Parameters

seconds delay before the "alarmed" flag is set

Definition at line 251 of file timing.c.

References `sighandler()`.

Referenced by `main()`.

7.141.1.5 **static void sighandler (int signum) [static]**

Definition at line 245 of file timing.c.

Referenced by `set_alarm()`.

7.141.2 Variable Documentation

7.141.2.1 **int alarmed = 0**

Definition at line 179 of file timing.c.

Referenced by `main()`.

7.141.2.2 **int hardclock_init = 0 [static]**

Definition at line 152 of file timing.c.

7.141.2.3 struct timeval tv_init [static]

Definition at line 153 of file timing.c.

Referenced by hardclock().

7.142 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/x509parse.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/x509.h"
#include "xyssl/base64.h"
#include "xyssl/des.h"
#include "xyssl/md2.h"
#include "xyssl/md4.h"
#include "xyssl/md5.h"
#include "xyssl/sha1.h"
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
#include "xyssl/certs.h"
```

Functions

- static int [asn1_get_len](#) (unsigned char **p, unsigned char *end, int *len)
- static int [asn1_get_tag](#) (unsigned char **p, unsigned char *end, int *len, int tag)
- static int [asn1_get_bool](#) (unsigned char **p, unsigned char *end, int *val)
- static int [asn1_get_int](#) (unsigned char **p, unsigned char *end, int *val)
- static int [asn1_get_mpi](#) (unsigned char **p, unsigned char *end, [mpi](#) *X)
- static int [x509_get_version](#) (unsigned char **p, unsigned char *end, int *ver)
- static int [x509_get_serial](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *serial)
- static int [x509_get_alg](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *alg)
- static int [x509_get_name](#) (unsigned char **p, unsigned char *end, [x509_name](#) *cur)
- static int [x509_get_dates](#) (unsigned char **p, unsigned char *end, [x509_time](#) *from, [x509_time](#) *to)
- static int [x509_get_pubkey](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *pk_alg_oid, [mpi](#) *N, [mpi](#) *E)
- static int [x509_get_sig](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *sig)
- static int [x509_get_uid](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *uid, int n)
- static int [x509_get_ext](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *ext, int *ca_istrue, int *max_pathlen)
- int [x509parse_crt](#) ([x509_cert](#) *chain, unsigned char *buf, int buflen)

Parse one or more certificates and add them to the chained list.

- int [x509parse_crtfile](#) ([x509_cert](#) *chain, char *path)

Load one or more certificates and add them to the chained list.

- static int [x509_get_iv](#) (unsigned char *s, unsigned char iv[8])
- static void [x509_des3_decrypt](#) (unsigned char des3_iv[8], unsigned char *buf, int buflen, unsigned char *pwd, int pwdlen)

- int `x509parse_key` (`rsa_context` *`rsa`, `unsigned char` *`buf`, `int` `buflen`, `unsigned char` *`pwd`, `int` `pwdlen`)
Parse a private RSA key.
- int `x509parse_keyfile` (`rsa_context` *`rsa`, `char` *`path`, `char` *`pwd`)
Load and parse a private RSA key.
- int `x509parse_dn_gets` (`char` *`buf`, `char` *`end`, `x509_name` *`dn`)
Store the certificate DN in printable form into buf; no more than (end - buf) characters will be written.
- `char` * `x509parse_cert_info` (`char` *`prefix`, `x509_cert` *`crt`)
Returns an informational string about the certificate.
- int `x509parse_expired` (`x509_cert` *`crt`)
Return 0 if the certificate is still valid, or BADCERT_EXPIRED.
- static void `x509_hash` (`unsigned char` *`in`, `int` `len`, `int` `alg`, `unsigned char` *`out`)
- int `x509parse_verify` (`x509_cert` *`crt`, `x509_cert` *`trust_ca`, `char` *`cn`, `int` *`flags`)
Verify the certificate signature.
- void `x509_free` (`x509_cert` *`crt`)
Unallocate all certificate data.
- int `x509_self_test` (`int` `verbose`)
Checkup routine.

7.142.1 Function Documentation

7.142.1.1 static int asn1_get_bool (`unsigned char` **`p`, `unsigned char` *`end`, `int` *`val`) [static]

Definition at line 108 of file x509parse.c.

References ASN1_BOOLEAN, `asn1_get_tag()`, and XYSSL_ERR ASN1_INVALID_LENGTH.

Referenced by `x509_get_ext()`.

7.142.1.2 static int asn1_get_int (`unsigned char` **`p`, `unsigned char` *`end`, `int` *`val`) [static]

Definition at line 126 of file x509parse.c.

References `asn1_get_tag()`, ASN1_INTEGER, and XYSSL_ERR ASN1_INVALID_LENGTH.

Referenced by `x509_get_ext()`, `x509_get_version()`, and `x509parse_key()`.

7.142.1.3 static int asn1_get_len (`unsigned char` **`p`, `unsigned char` *`end`, `int` *`len`) [static]

Definition at line 52 of file x509parse.c.

References XYSSL_ERR ASN1_INVALID_LENGTH, and XYSSL_ERR ASN1_OUT_OF_DATA.

Referenced by `asn1_get_tag()`, `x509_get_name()`, and `x509_get_serial()`.

7.142.1.4 static int asn1_get_mpi (unsigned char *p*, unsigned char **end*, mpi **X*) [static]**

Definition at line 149 of file x509parse.c.

References asn1_get_tag(), ASN1_INTEGER, and mpi_read_binary().

Referenced by x509_get_pubkey(), and x509parse_key().

7.142.1.5 static int asn1_get_tag (unsigned char *p*, unsigned char **end*, int **len*, int *tag*) [static]**

Definition at line 93 of file x509parse.c.

References asn1_get_len(), XYSSL_ERR ASN1_OUT_OF_DATA, and XYSSL_ERR ASN1_UNEXPECTED_TAG.

Referenced by asn1_get_bool(), asn1_get_int(), asn1_get_mpi(), x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509_get_sig(), x509_get_uid(), x509_get_version(), x509parse_crt(), and x509parse_key().

7.142.1.6 static void x509_des3_decrypt (unsigned char *des3_iv*[8], unsigned char **buf*, int *buflen*, unsigned char **pwd*, int *pwdlen*) [static]

Definition at line 1042 of file x509parse.c.

References des3_crypt_cbc(), des3_set3key_dec(), DES_DECRYPT, md5_finish(), md5_starts(), and md5_update().

Referenced by x509parse_key().

7.142.1.7 void x509_free (x509_cert **crt*)

Unallocate all certificate data.

Definition at line 1613 of file x509parse.c.

References _x509_cert::issuer, _x509_buf::len, _x509_cert::next, _x509_name::next, _x509_buf::p, _x509_cert::raw, _x509_cert::rsa, rsa_free(), and _x509_cert::subject.

Referenced by main(), ssl_free(), ssl_test(), x509_self_test(), and x509parse_crt().

7.142.1.8 static int x509_get_alg (unsigned char *p*, unsigned char **end*, x509_buf **alg*) [static]**

Definition at line 229 of file x509parse.c.

References ASN1_CONSTRUCTED, asn1_get_tag(), ASN1_NULL, ASN1_OID, ASN1_SEQUENCE, _x509_buf::len, _x509_buf::p, _x509_buf::tag, XYSSL_ERR ASN1_LENGTH_MISMATCH, and XYSSL_ERR_X509_CERT_INVALID_ALG.

Referenced by x509_get_pubkey(), and x509parse_crt().

7.142.1.9 static int x509_get_dates (unsigned char *p*, unsigned char **end*, x509_time **from*, x509_time **to*) [static]**

Definition at line 358 of file x509parse.c.

References ASN1_CONSTRUCTED, asn1_get_tag(), ASN1_SEQUENCE, ASN1_UTCTIME, _x509_time::day, _x509_time::hour, _x509_time::min, _x509_time::mon, _x509_time::sec, XYSSL_ERR ASN1_LENGTH_MISMATCH, XYSSL_ERR_X509_CERT_INVALID_DATE, and _x509_time::year.

Referenced by x509parse_crt().

7.142.1.10 static int x509_get_ext (unsigned char *p*, unsigned char **end*, x509_buf **ext*, int **ca_istrue*, int **max_pathlen*) [static]**

Definition at line 530 of file x509parse.c.

References ASN1_CONSTRUCTED, ASN1_CONTEXT_SPECIFIC, asn1_get_bool(), asn1_get_int(), asn1_get_tag(), ASN1_OCTET_STRING, ASN1_SEQUENCE, _x509_buf::len, _x509_buf::p, _x509_buf::tag, XYSSL_ERR ASN1_LENGTH_MISMATCH, XYSSL_ERR ASN1_UNEXPECTED_TAG, and XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS.

Referenced by x509parse_crt().

7.142.1.11 static int x509_get_iv (unsigned char **s*, unsigned char *iv*[8]) [static]

Definition at line 1018 of file x509parse.c.

References XYSSL_ERR_X509_KEY_INVALID_ENC_IV.

Referenced by x509parse_key().

7.142.1.12 static int x509_get_name (unsigned char *p*, unsigned char **end*, x509_name **cur*) [static]**

Definition at line 276 of file x509parse.c.

References ASN1_BMP_STRING, ASN1_CONSTRUCTED, asn1_get_len(), asn1_get_tag(), ASN1_IA5_STRING, ASN1_OID, ASN1_PRINTABLE_STRING, ASN1_SEQUENCE, ASN1_SET, ASN1_T61_STRING, ASN1_UNIVERSAL_STRING, ASN1_UTF8_STRING, _x509_buf::len, _x509_name::next, _x509_name::oid, _x509_buf::p, _x509_buf::tag, _x509_name::val, XYSSL_ERR ASN1_LENGTH_MISMATCH, XYSSL_ERR ASN1_OUT_OF_DATA, XYSSL_ERR ASN1_UNEXPECTED_TAG, and XYSSL_ERR_X509_CERT_INVALID_NAME.

Referenced by x509parse_crt().

7.142.1.13 static int x509_get_pubkey (unsigned char *p*, unsigned char **end*, x509_buf **pk_alg_oid*, mpi **N*, mpi **E*) [static]**

Definition at line 421 of file x509parse.c.

References ASN1_BIT_STRING, ASN1_CONSTRUCTED, asn1_get_mpi(), asn1_get_tag(), ASN1_SEQUENCE, _x509_buf::len, OID_PKCS1_RSA, _x509_buf::p, x509_get_alg(), XYSSL_ERR ASN1_LENGTH_MISMATCH, XYSSL_ERR ASN1_OUT_OF_DATA, XYSSL_ERR_X509_CERT_INVALID_PUBKEY, and XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG.

Referenced by x509parse_crt().

7.142.1.14 static int x509_get_serial (unsigned char *p*, unsigned char **end*, x509_buf **serial*) [static]**

Definition at line 198 of file x509parse.c.

References ASN1_CONTEXT_SPECIFIC, asn1_get_len(), ASN1_INTEGER, ASN1_PRIMITIVE, _x509_buf::len, _x509_buf::p, _x509_buf::tag, XYSSL_ERR ASN1_OUT_OF_DATA, XYSSL_ERR ASN1_UNEXPECTED_TAG, and XYSSL_ERR_X509_CERT_INVALID_SERIAL.

Referenced by x509parse_crt().

7.142.1.15 static int x509_get_sig (unsigned char *p*, unsigned char **end*, x509_buf **sig*) [static]**

Definition at line 476 of file x509parse.c.

References ASN1_BIT_STRING, asn1_get_tag(), _x509_buf::len, _x509_buf::p, _x509_buf::tag, and XYSSL_ERR_X509_CERT_INVALID_SIGNATURE.

Referenced by x509parse_crt().

7.142.1.16 static int x509_get_uid (unsigned char *p*, unsigned char **end*, x509_buf **uid*, int *n*) [static]**

Definition at line 501 of file x509parse.c.

References ASN1_CONSTRUCTED, ASN1_CONTEXT_SPECIFIC, asn1_get_tag(), _x509_buf::len, _x509_buf::p, _x509_buf::tag, and XYSSL_ERR ASN1_UNEXPECTED_TAG.

Referenced by x509parse_crt().

7.142.1.17 static int x509_get_version (unsigned char *p*, unsigned char **end*, int **ver*) [static]**

Definition at line 168 of file x509parse.c.

References ASN1_CONSTRUCTED, ASN1_CONTEXT_SPECIFIC, asn1_get_int(), asn1_get_tag(), XYSSL_ERR ASN1_LENGTH_MISMATCH, XYSSL_ERR ASN1_UNEXPECTED_TAG, and XYSSL_ERR_X509_CERT_INVALID_VERSION.

Referenced by x509parse_crt().

7.142.1.18 static void x509_hash (unsigned char **in*, int *len*, int *alg*, unsigned char **out*) [static]

Definition at line 1481 of file x509parse.c.

References md2(), md4(), md5(), RSA_MD2, RSA_MD4, RSA_MD5, RSA_SHA1, and sha1().

Referenced by x509parse_verify().

7.142.1.19 int x509_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 1675 of file x509parse.c.

References rsa_free(), test_ca_crt, test_ca_key, test_ca_pwd, test_cli_crt, x509_free(), x509parse_crt(), x509parse_key(), and x509parse_verify().

Referenced by main().

7.142.1.20 char* x509parse_cert_info (char * *prefix*, x509_cert * *crt*)

Returns an informational string about the certificate.

Definition at line 1399 of file x509parse.c.

References buf, _x509_time::day, _x509_time::hour, _x509_cert::issuer, _x509_buf::len, _x509_time::min, _x509_time::mon, mpi::n, rsa_context::N, _x509_buf::p, _x509_cert::rsa, RSA_MD2, RSA_MD4, RSA_MD5, RSA_SHA1, _x509_time::sec, _x509_cert::serial, _x509_cert::sig_oid1, _x509_cert::subject, _x509_cert::valid_from, _x509_cert::valid_to, _x509_cert::version, x509parse_dn_gets(), and _x509_time::year.

Referenced by debug_print_crt(), and main().

7.142.1.21 int x509parse_crt (x509_cert * *crt*, unsigned char * *buf*, int *buflen*)

Parse one or more certificates and add them to the chained list.

Parameters

chain points to the start of the chain

buf buffer holding the certificate data

buflen size of the buffer

Returns

0 if successful, or a specific X509 error code

Definition at line 647 of file x509parse.c.

References ASN1_CONSTRUCTED, asn1_get_tag(), ASN1_SEQUENCE, base64_decode(), _x509_cert::ca_istrue, rsa_context::E, _x509_cert::issuer, _x509_cert::issuer_id, _x509_cert::issuer_raw, rsa_context::len, _x509_buf::len, _x509_cert::max_pathlen, mpi_size(), rsa_context::N, _x509_cert::next, OID_PKCS1, _x509_buf::p, _x509_cert::pk_oid, _x509_cert::raw, _x509_cert::rsa, rsa_check_pubkey(), _x509_cert::serial, _x509_cert::sig, _x509_cert::sig_oid1, _x509_cert::sig_oid2, _x509_cert::subject, _x509_cert::subject_id, _x509_cert::subject_raw, _x509_cert::tbs, _x509_cert::v3_ext, _x509_cert::valid_from, _x509_cert::valid_to, _x509_cert::version, x509_free(), x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509_get_serial(), x509_get_sig(), x509_get_uid(), x509_get_version(), x509parse_crt(), XYSSL_ERR ASN1_LENGTH_MISMATCH, XYSSL_ERR_BASE64_INVALID_CHARACTER, XYSSL_ERR_X509_CERT_INVALID_FORMAT, XYSSL_ERR_X509_CERT_INVALID_PEM, XYSSL_ERR_X509_CERT_SIG_MISMATCH, XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG, and XYSSL_ERR_X509_CERT_UNKNOWN_VERSION.

Referenced by main(), ssl_parse_certificate(), ssl_test(), x509_self_test(), x509parse_crt(), and x509parse_crtfile().

7.142.1.22 int x509parse_crtfile (x509_cert * crt, char * path)

Load one or more certificates and add them to the chained list.

Parameters

chain points to the start of the chain

path filename to read the certificates from

Returns

0 if successful, or a specific X509 error code

Definition at line 979 of file x509parse.c.

References buf, f, and x509parse_crt().

7.142.1.23 int x509parse_dn_gets (char * buf, char * end, x509_name * dn)

Store the certificate DN in printable form into buf; no more than (end - buf) characters will be written.

Definition at line 1316 of file x509parse.c.

References _x509_buf::len, _x509_name::next, _x509_name::oid, OID_PKCS9, OID_X520, _x509_buf::p, PKCS9_EMAIL, _x509_name::val, X520_COMMON_NAME, X520_COUNTRY, X520_LOCALITY, X520_ORG_UNIT, X520_ORGANIZATION, and X520_STATE.

Referenced by x509parse_cert_info().

7.142.1.24 int x509parse_expired (x509_cert * crt)

Return 0 if the certificate is still valid, or BADCERT_EXPIRED.

Definition at line 1458 of file x509parse.c.

References BADCERT_EXPIRED, _x509_time::day, _x509_time::mon, _x509_cert::valid_to, and _x509_time::year.

Referenced by x509parse_verify().

7.142.1.25 int x509parse_key (rsa_context * rsa, unsigned char * buf, int buflen, unsigned char * pwd, int pwdlen)

Parse a private RSA key.

Parameters

rsa RSA context to be initialized

buf input buffer

buflen size of the buffer

pwd password for decryption (optional)

pwdlen size of the password

Returns

0 if successful, or a specific X509 error code

Definition at line 1082 of file x509parse.c.

References ASN1_CONSTRUCTED, asn1_get_int(), asn1_get_mpi(), asn1_get_tag(), ASN1_SEQUENCE, base64_decode(), rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, rsa_context::len, mpi_size(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_check_privkey(), rsa_free(), rsa_context::ver, x509_des3_decrypt(), x509_get_iv(), XYSSL_ERR ASN1_LENGTH_MISMATCH, XYSSL_ERR_BASE64_INVALID_CHARACTER, XYSSL_ERR_X509_FEATURE_UNAVAILABLE, XYSSL_ERR_X509_KEY_INVALID_ENC_IV, XYSSL_ERR_X509_KEY_INVALID_FORMAT, XYSSL_ERR_X509_KEY_INVALID_PEM, XYSSL_ERR_X509_KEY_INVALID_VERSION, XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH, XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED, and XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG.

Referenced by main(), ssl_test(), x509_self_test(), and x509parse_keyfile().

7.142.1.26 int x509parse_keyfile (rsa_context *rsa, char *path, char *password)

Load and parse a private RSA key.

Parameters

rsa RSA context to be initialized
path filename to read the private key from
pwd password to decrypt the file (can be NULL)

Returns

0 if successful, or a specific X509 error code

Definition at line 1269 of file x509parse.c.

References buf, f, and x509parse_key().

7.142.1.27 int x509parse_verify (x509_cert *crt, x509_cert *trust_ca, char *cn, int *flags)

Verify the certificate signature.

Parameters

crt a certificate to be verified
trust_ca the trusted CA chain
cn expected Common Name (can be set to NULL if the CN must not be verified)
flags result of the verification

Returns

0 if successful or XYSSL_ERR_X509_SIG_VERIFY_FAILED, in which case *flags will have one or more of the following values set: BADCERT_EXPIRED -- BADCERT_REVOKED -- BADCERT_CN_MISMATCH -- BADCERT_NOT_TRUSTED

Note

TODO: add two arguments, depth and crl

Definition at line 1503 of file x509parse.c.

References BADCERT_CN_MISMATCH, BADCERT_NOT_TRUSTED, _x509_cert::ca_istrued, cur, _x509_cert::issuer_raw, _x509_buf::len, _x509_cert::max_pathlen, _x509_cert::next, _x509_name::next, _x509_name::oid, OID_CN, _x509_buf::p, _x509_cert::rsa, rsa_pkcs1_verify(), RSA_PUBLIC, _x509_cert::sig, _x509_cert::sig_oid1, _x509_cert::subject, _x509_cert::subject_raw, _x509_cert::tbs, _x509_name::val, _x509_cert::version, x509_hash(), x509parse_expired(), and XYSSL_ERR_X509_CERT_VERIFY_FAILED.

Referenced by ssl_parse_certificate(), and x509_self_test().

7.143 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/aes/aescrypt2.c File Reference

```
#include <sys/types.h>
#include <unistd.h>
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
#include "xyssl/aes.h"
#include "xyssl/sha2.h"
```

Defines

- #define MODE_ENCRYPT 0
- #define MODE_DECRYPT 1
- #define USAGE

Functions

- int main (int argc, char *argv[])

7.143.1 Define Documentation

7.143.1.1 #define MODE_DECRYPT 1

Definition at line 42 of file aescrypt2.c.

7.143.1.2 #define MODE_ENCRYPT 0

Definition at line 41 of file aescrypt2.c.

7.143.1.3 #define USAGE

Value:

```
"\n aescrypt2 <mode> <input filename> <output filename> <key>\n" \
"\n   <mode>: 0 = encrypt, 1 = decrypt\n" \
"\n   example: aescrypt2 0 file file.aes hex:E76B2413958B00E193\n" \
"\n"
```

Definition at line 44 of file aescrypt2.c.

Referenced by main().

7.143.2 Function Documentation

7.143.2.1 int main (int *argc*, char * *argv*[])

Definition at line 50 of file aescrypt2.c.

References aes_crypt_ecb(), AES_DECRYPT, AES_ENCRYPT, aes_setkey_dec(), aes_setkey_enc(), MODE_DECRYPT, MODE_ENCRYPT, sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_update(), sha2_starts(), sha2_update(), and USAGE.

7.144 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/hello.c File Reference

```
#include <stdio.h>
#include "xyssl/md5.h"
```

Functions

- int [main \(void\)](#)

7.144.1 Function Documentation

7.144.1.1 int main (void)

Definition at line 29 of file hello.c.

References md5().

7.145 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/md5sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/md5.h"
```

Functions

- static int [md5_wrapper](#) (char *filename, unsigned char *sum)
- static int [md5_print](#) (char *filename)
- static int [md5_check](#) (char *filename)
- int [main](#) (int argc, char *argv[])

7.145.1 Function Documentation

7.145.1.1 int main (int *argc*, char **argv*[])

Definition at line 131 of file md5sum.c.

References [md5_check\(\)](#), and [md5_print\(\)](#).

7.145.1.2 static int md5_check (char **filename*) [static]

Definition at line 58 of file md5sum.c.

References [buf](#), [f](#), and [md5_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.145.1.3 static int md5_print (char **filename*) [static]

Definition at line 43 of file md5sum.c.

References [md5_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.145.1.4 static int md5_wrapper (char **filename*, unsigned char **sum*) [static]

Definition at line 30 of file md5sum.c.

References [md5_file\(\)](#).

Referenced by [md5_check\(\)](#), and [md5_print\(\)](#).

7.146 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha1sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/sha1.h"
```

Functions

- static int [sha1_wrapper](#) (char *filename, unsigned char *sum)
- static int [sha1_print](#) (char *filename)
- static int [sha1_check](#) (char *filename)
- int [main](#) (int argc, char *argv[])

7.146.1 Function Documentation

7.146.1.1 int [main](#) (int *argc*, char **argv*[])

Definition at line 131 of file sha1sum.c.

References [sha1_check\(\)](#), and [sha1_print\(\)](#).

7.146.1.2 static int [sha1_check](#) (char **filename*) [static]

Definition at line 58 of file sha1sum.c.

References [buf](#), [f](#), and [sha1_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.146.1.3 static int [sha1_print](#) (char **filename*) [static]

Definition at line 43 of file sha1sum.c.

References [sha1_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.146.1.4 static int [sha1_wrapper](#) (char **filename*, unsigned char **sum*) [static]

Definition at line 30 of file sha1sum.c.

References [sha1_file\(\)](#).

Referenced by [sha1_check\(\)](#), and [sha1_print\(\)](#).

7.147 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha2sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/sha2.h"
```

Functions

- static int [sha2_wrapper](#) (char *filename, unsigned char *sum)
- static int [sha2_print](#) (char *filename)
- static int [sha2_check](#) (char *filename)
- int [main](#) (int argc, char *argv[])

7.147.1 Function Documentation

7.147.1.1 int main (int argc, char * argv[])

Definition at line 131 of file sha2sum.c.

References sha2_check(), and sha2_print().

7.147.1.2 static int sha2_check (char *filename) [static]

Definition at line 58 of file sha2sum.c.

References buf, f, and sha2_wrapper().

Referenced by main().

7.147.1.3 static int sha2_print (char *filename) [static]

Definition at line 43 of file sha2sum.c.

References sha2_wrapper().

Referenced by main().

7.147.1.4 static int sha2_wrapper (char *filename, unsigned char *sum) [static]

Definition at line 30 of file sha2sum.c.

References sha2_file().

Referenced by sha2_check(), and sha2_print().

7.148 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_client.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/aes.h"
#include "xyssl/dhm.h"
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
#include "xyssl/havege.h"
```

Defines

- #define SERVER_NAME "localhost"
- #define SERVER_PORT 11999

Functions

- int main (void)

7.148.1 Define Documentation

7.148.1.1 #define SERVER_NAME "localhost"

Definition at line 35 of file dh_client.c.

Referenced by main().

7.148.1.2 #define SERVER_PORT 11999

Definition at line 36 of file dh_client.c.

Referenced by main().

7.148.2 Function Documentation

7.148.2.1 int main (void)

Definition at line 38 of file dh_client.c.

References aes_crypt_ecb(), AES_DECRYPT, aes_setkey_dec(), buf, dhm_calc_secret(), dhm_free(), dhm_make_public(), dhm_read_params(), rsa_context::E, f, havege_init(), havege_rand(), dhm_context::len, rsa_context::len, mpi_msb(), mpi_read_file(), rsa_context::N, net_close(), net_connect(), net_recv(), net_send(), rsa_free(), rsa_init(), rsa_pkcs1_verify(), RSA_PKCS_V15, RSA_PUBLIC, RSA_SHA1, server_fd, SERVER_NAME, SERVER_PORT, and sha1().

7.149 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_genprime.c File Reference

```
#include <stdio.h>
#include "xyssl/bignum.h"
#include "xyssl/config.h"
#include "xyssl/havege.h"
```

Defines

- #define **DH_P_SIZE** 1024
- #define **GENERATOR** "4"

Functions

- int **main** (void)

7.149.1 Define Documentation

7.149.1.1 #define DH_P_SIZE 1024

Definition at line 35 of file dh_genprime.c.

Referenced by main().

7.149.1.2 #define GENERATOR "4"

Definition at line 36 of file dh_genprime.c.

Referenced by main().

7.149.2 Function Documentation

7.149.2.1 int main (void)

Definition at line 38 of file dh_genprime.c.

References DH_P_SIZE, GENERATOR, havege_init(), havege_rand(), mpi_div_int(), mpi_free(), mpi_gen_prime(), mpi_init(), mpi_is_prime(), mpi_read_string(), mpi_sub_int(), mpi_write_file(), and P.

7.150 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_server.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/aes.h"
#include "xyssl/dhm.h"
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
#include "xyssl/havege.h"
```

Defines

- #define SERVER_PORT 11999
- #define PLAINTEXT "==Hello there!=="

Functions

- int main (void)

7.150.1 Define Documentation

7.150.1.1 #define PLAINTEXT "==Hello there!=="

Definition at line 36 of file dh_server.c.

Referenced by main().

7.150.1.2 #define SERVER_PORT 11999

Definition at line 35 of file dh_server.c.

7.150.2 Function Documentation

7.150.2.1 int main (void)

Definition at line 38 of file dh_server.c.

References aes_crypt_ecb(), AES_ENCRYPT, aes_setkey_enc(), buf, client_fd, rsa_context::D, dhm_calc_secret(), dhm_free(), dhm_make_params(), dhm_read_public(), rsa_context::DP, rsa_context::DQ, rsa_context::E, f, dhm_context::G, havege_init(), havege_rand(), dhm_context::len, rsa_context::len, mpi_msb(), mpi_read_file(), rsa_context::N, net_accept(), net_bind(), net_close(), net_recv(), net_send(), dhm_context::P, rsa_context::P, PLAINTEXT, rsa_context::Q, rsa_context::QP, rsa_free(), rsa_init(), rsa_pkcs1_sign(), RSA_PKCS_V15, RSA_PRIVATE, RSA_SHA1, SERVER_PORT, and sha1().

7.151 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/mpi_demo.c File Reference

```
#include <stdio.h>
#include "xyssl/bignum.h"
```

Functions

- int **main** (void)

7.151.1 Function Documentation

7.151.1.1 int main (void)

Definition at line 29 of file mpi_demo.c.

References mpi_exp_mod(), mpi_free(), mpi_init(), mpi_inv_mod(), mpi_mul_mpi(), mpi_read_string(), mpi_sub_int(), mpi_write_file(), and P.

7.152 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_genkey.c File Reference

```
#include <stdio.h>
#include "xyssl/havege.h"
#include "xyssl/bignum.h"
#include "xyssl/x509.h"
#include "xyssl/rsa.h"
```

Defines

- #define KEY_SIZE 1024
- #define EXPONENT 65537

Functions

- int main (void)

7.152.1 Define Documentation

7.152.1.1 #define EXPONENT 65537

Definition at line 33 of file rsa_genkey.c.

7.152.1.2 #define KEY_SIZE 1024

Definition at line 32 of file rsa_genkey.c.

7.152.2 Function Documentation

7.152.2.1 int main (void)

Definition at line 35 of file rsa_genkey.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_free(), rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

7.153 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_sign.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
```

Functions

- int **main** (int argc, char *argv[])

7.153.1 Function Documentation

7.153.1.1 int main (int *argc*, char * *argv*[])

Definition at line 31 of file rsa_sign.c.

References buf, rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, f, rsa_context::len, mpi_msб(), mpi_read_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_init(), rsa_pkcs1_sign(), RSA_PKCS_V15, RSA_PRIVATE, RSA_SHA1, and sha1_file().

7.154 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_verify.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
```

Functions

- int **main** (int argc, char *argv[])

7.154.1 Function Documentation

7.154.1.1 int main (int *argc*, char * *argv*[])

Definition at line 31 of file rsa_verify.c.

References buf, rsa_context::E, f, rsa_context::len, mpi_msb(), mpi_read_file(), rsa_context::N, rsa_init(), rsa_pkcs1_verify(), RSA_PKCS_V15, RSA_PUBLIC, RSA_SHA1, and sha1_file().

7.155 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client1.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/ssl.h"
#include "xyssl/havege.h"
```

Defines

- #define SERVER_PORT 443
- #define SERVER_NAME "xyssl.org"
- #define GET_REQUEST
- #define DEBUG_LEVEL 0

Functions

- void my_debug (void *ctx, int level, char *str)
- int main (void)

7.155.1 Define Documentation

7.155.1.1 #define DEBUG_LEVEL 0

Definition at line 42 of file ssl_client1.c.

Referenced by my_debug().

7.155.1.2 #define GET_REQUEST

Value:

```
"GET /hello/ HTTP/1.1\r\n" \
"Host: xyssl.org\r\n\r\n"
```

Definition at line 38 of file ssl_client1.c.

Referenced by main().

7.155.1.3 #define SERVER_NAME "xyssl.org"

Definition at line 37 of file ssl_client1.c.

7.155.1.4 #define SERVER_PORT 443

Definition at line 32 of file ssl_client1.c.

7.155.2 Function Documentation

7.155.2.1 int main (void)

Definition at line 53 of file ssl_client1.c.

References buf, GET_REQUEST, havege_init(), havege_rand(), my_debug(), net_close(), net_connect(), net_recv(), net_send(), server_fd, SERVER_NAME, SERVER_PORT, ssl_close_notify(), ssl_default_ciphers, ssl_free(), ssl_init(), SSL_IS_CLIENT, ssl_read(), ssl_set_authmode(), ssl_set_bio(), ssl_set_ciphers(), ssl_set_dbg(), ssl_set_endpoint(), ssl_set_rng(), ssl_set_session(), SSL_VERIFY_NONE, ssl_write(), XYSSL_ERR_NET_TRY AGAIN, and XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY.

7.155.2.2 void my_debug (void * ctx, int level, char * str)

Definition at line 44 of file ssl_client1.c.

References DEBUG_LEVEL.

Referenced by main(), and ssl_test().

7.156 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client2.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/ssl.h"
#include "xyssl/havege.h"
#include "xyssl/certs.h"
#include "xyssl/x509.h"
```

Defines

- #define SERVER_PORT 443
- #define SERVER_NAME "xyssl.org"
- #define GET_REQUEST
- #define DEBUG_LEVEL 0

Functions

- void my_debug (void *ctx, int level, char *str)
- int main (void)

7.156.1 Define Documentation

7.156.1.1 #define DEBUG_LEVEL 0

Definition at line 44 of file ssl_client2.c.

7.156.1.2 #define GET_REQUEST

Value:

```
"GET /hello/ HTTP/1.1\r\n" \
"Host: xyssl.org\r\n\r\n"
```

Definition at line 40 of file ssl_client2.c.

7.156.1.3 #define SERVER_NAME "xyssl.org"

Definition at line 39 of file ssl_client2.c.

7.156.1.4 #define SERVER_PORT 443

Definition at line 34 of file ssl_client2.c.

7.156.2 Function Documentation

7.156.2.1 int main (void)

Definition at line 55 of file ssl_client2.c.

References BADCERT_CN_MISMATCH, BADCERT_EXPIRED, BADCERT_NOT_TRUSTED, BADCERT_REVOKED, buf, GET_REQUEST, havege_init(), havege_rand(), net_close(), net_connect(), net_recv(), net_send(), _ssl_context::peer_cert, rsa_free(), server_fd, SERVER_NAME, SERVER_PORT, ssl_close_notify(), ssl_default_ciphers, ssl_free(), ssl_get_cipher(), ssl_get_verify_result(), ssl_handshake(), ssl_init(), SSL_IS_CLIENT, ssl_read(), ssl_set_authmode(), ssl_set_bio(), ssl_set_ca_chain(), ssl_set_ciphers(), ssl_set_endpoint(), ssl_set_hostname(), ssl_set_own_cert(), ssl_set_rng(), ssl_set_session(), SSL_VERIFY_OPTIONAL, ssl_write(), test_cli_crt, test_cli_key, x509_free(), x509parse_cert_info(), x509parse_crt(), x509parse_key(), xyssl_ca_crt, XYSSL_ERR_NET_TRY AGAIN, and XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY.

7.156.2.2 void my_debug (void * ctx, int level, char * str)

Definition at line 46 of file ssl_client2.c.

References DEBUG_LEVEL.

7.157 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_server.c File Reference

```
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include "xyssl/havege.h"
#include "xyssl/certs.h"
#include "xyssl/x509.h"
#include "xyssl/ssl.h"
#include "xyssl/net.h"
```

Defines

- #define **HTTP_RESPONSE**
- #define **DEBUG_LEVEL** 0

Functions

- void **my_debug** (void *ctx, int level, char *str)
- static int **my_get_session** (ssl_context *ssl)
- static int **my_set_session** (ssl_context *ssl)
- int **main** (void)

Variables

- char * **my_dhm_P**
- char * **my_dhm_G** = "4"
- int **my_ciphers** []
- ssl_session * **s_list_1st** = NULL
- ssl_session * **cur**
- ssl_session * **prv**

7.157.1 Define Documentation

7.157.1.1 #define DEBUG_LEVEL 0

Definition at line 75 of file `ssl_server.c`.

7.157.1.2 #define HTTP_RESPONSE

Value:

```
"HTTP/1.0 200 OK\r\nContent-Type: text/html\r\n\r\n" \
"<h2><p>Successful connection using: %s\r\n"
```

Definition at line 39 of file ssl_server.c.

Referenced by http_ParseRequest(), main(), and mtp_http_Parse().

7.157.2 Function Documentation

7.157.2.1 int main (void)

Definition at line 160 of file ssl_server.c.

References buf, client_fd, havege_init(), havege_rand(), HTTP_RESPONSE, my_ciphers, my_debug(), my_dhm_G, my_dhm_P, my_get_session(), my_set_session(), net_accept(), net_bind(), net_close(), net_recv(), net_send(), _ssl_session::next, _x509_cert::next, rsa_free(), ssl_close_notify(), ssl_free(), ssl_get_cipher(), ssl_handshake(), ssl_init(), SSL_IS_SERVER, ssl_read(), ssl_set_authmode(), ssl_set_bio(), ssl_set_ca_chain(), ssl_set_ciphers(), ssl_set_dbg(), ssl_set_dh_param(), ssl_set_endpoint(), ssl_set_own_cert(), ssl_set_rng(), ssl_set_scb(), ssl_set_session(), SSL_VERIFY_NONE, ssl_write(), test_ca_crt, test_srv_crt, test_srv_key, x509_free(), x509parse_crt(), x509parse_key(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_TRY AGAIN, and XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY.

7.157.2.2 void my_debug (void * ctx, int level, char * str)

Definition at line 77 of file ssl_server.c.

References DEBUG_LEVEL.

7.157.2.3 static int my_get_session (ssl_context * ssl) [static]

Definition at line 93 of file ssl_server.c.

References _ssl_session::cipher, _ssl_session::id, _ssl_session::length, _ssl_session::master, _ssl_session::next, _ssl_context::resume, _ssl_context::session, _ssl_session::start, and _ssl_context::timeout.

Referenced by main().

7.157.2.4 static int my_set_session (ssl_context * ssl) [static]

Definition at line 125 of file ssl_server.c.

References _ssl_session::id, _ssl_session::length, _ssl_session::next, _ssl_context::session, _ssl_session::start, and _ssl_context::timeout.

Referenced by main().

7.157.3 Variable Documentation

7.157.3.1 ssl_session* cur

Definition at line 91 of file ssl_server.c.

Referenced by http_GetToken(), http_ParseRequest(), and x509parse_verify().

7.157.3.2 int my_ciphers[]

Initial value:

```
{  
    SSL_EDH_RSA_AES_256_SHA,  
    SSL_EDH_RSA_DES_168_SHA,  
    SSL_RSA_AES_256_SHA,  
    SSL_RSA_AES_128_SHA,  
    SSL_RSA_DES_168_SHA,  
    SSL_RSA_RC4_128_SHA,  
    SSL_RSA_RC4_128_MD5,  
    0  
}
```

Definition at line 63 of file ssl_server.c.

Referenced by main().

7.157.3.3 char* my_dhm_G = "4"

Definition at line 58 of file ssl_server.c.

Referenced by main().

7.157.3.4 char* my_dhm_P

Initial value:

```
"E4004C1F94182000103D883A448B3F80"  
"2CE4B44A83301270002C20D0321CFD00"  
"11CCEF784C26A400F43DFB901BCA7538"  
"F2C6B176001CF5A0FD16D2C48B1DOC1C"  
"F6AC8E1DA6BCC3B4E1F96B0564965300"  
"FFA1D0B601EB2800F489AA512C4B248C"  
"01F76949A60BB7F00A40B1EAB64BD48"  
"E8A700D60B7F1200FA8E77B0A979DABF"
```

Definition at line 48 of file ssl_server.c.

Referenced by main().

7.157.3.5 ssl_session * prv

Definition at line 91 of file ssl_server.c.

Referenced by aes_self_test(), and des_self_test().

7.157.3.6 ssl_session* s_list_1st = NULL

Definition at line 90 of file ssl_server.c.

7.158 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/benchmark.c File Reference

```
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include "xyssl/config.h"
#include "xyssl/md4.h"
#include "xyssl/md5.h"
#include "xyssl/sha1.h"
#include "xyssl/sha2.h"
#include "xyssl/arc4.h"
#include "xyssl/des.h"
#include "xyssl/aes.h"
#include "xyssl/rsa.h"
#include "xyssl/timing.h"
```

Defines

- #define BUFSIZE 1024

Functions

- static int myrand (void *rng_state)
- int main (void)

Variables

- unsigned char buf [BUFSIZE]

7.158.1 Define Documentation

7.158.1.1 #define BUFSIZE 1024

Definition at line 41 of file benchmark.c.

Referenced by main().

7.158.2 Function Documentation

7.158.2.1 int main (void)

Definition at line 53 of file benchmark.c.

References aes_crypt_cbc(), AES_ENCRYPT, aes_setkey_enc(), alarmed, arc4_crypt(), arc4_setup(), buf, BUFSIZE, des3_crypt_cbc(), des3_set3key_enc(), des_crypt_cbc(), DES_ENCRYPT, des_setkey_enc(), hardclock(), md4(), md5(), myrand(), rsa_free(), rsa_gen_key(), rsa_init(), RSA_PKCS_V15, rsa_private(), rsa_public(), set_alarm(), sha1(), and sha2().

7.158.2.2 static int myrand (void *rng_state) [static]

Definition at line 43 of file benchmark.c.

Referenced by main().

7.158.3 Variable Documentation

7.158.3.1 unsigned char buf[BUFSIZE]

Definition at line 51 of file benchmark.c.

Referenced by aes_self_test(), agent_xml_compose__create_row_nodes(), agent_xml_compose__data(), agent_xml_compose__task(), agent_xml_compose__tasks(), agent_xml_parse__fill_row_data(), agent_xml_parse__tasks(), arc4_self_test(), cmd_prompt_Thread(), des_self_test(), fipa_DateTime_Compose(), fipa_datetime_Parse(), fipa_envelope_Compose__date(), fipa_envelope_Compose__from(), fipa_envelope_HandleParams(), main(), MC_End(), MC_Initialize(), MC_LoadAgentFromFile(), MC_RetrieveAgentCode(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), md5_check(), md5_file(), md5_self_test(), message_InitializeFromAgent(), message_send_Thread(), message_xml_parse__message(), mtp_http_ComposeMessage(), mtp_http_CreateMessage(), mxml_fd_getc(), mxml_fd_putc(), mxmlLoadFd(), mxmlSaveFd(), net_htons(), rsa_pkcs1_decrypt(), rsa_pkcs1_verify(), sha1_check(), sha1_file(), sha1_self_test(), sha2_check(), sha2_file(), sha2_self_test(), sha4_file(), sha4_self_test(), ssl_flush_output(), ssl_parse_client_hello(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_write_certificate_request(), ssl_write_client_hello(), ssl_write_server_hello(), udplisten_Thread(), x509parse_cert_info(), x509parse_crtfile(), x509parse_keyfile(), and xml_get_cdata().

7.159 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/selftest.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/config.h"
#include "xyssl/md2.h"
#include "xyssl/md4.h"
#include "xyssl/md5.h"
#include "xyssl/sha1.h"
#include "xyssl/sha2.h"
#include "xyssl/sha4.h"
#include "xyssl/arc4.h"
#include "xyssl/des.h"
#include "xyssl/aes.h"
#include "xyssl/base64.h"
#include "xyssl/bignum.h"
#include "xyssl/rsa.h"
#include "xyssl/x509.h"
```

Functions

- int **main** (int argc, char *argv[])

7.159.1 Function Documentation

7.159.1.1 int main (int *argc*, char **argv*[])

Definition at line 44 of file selftest.c.

References aes_self_test(), arc4_self_test(), base64_self_test(), des_self_test(), md2_self_test(), md4_self_test(), md5_self_test(), mpi_self_test(), rsa_self_test(), sha1_self_test(), sha2_self_test(), sha4_self_test(), and x509_self_test().

7.160 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c File Reference

```
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/ssl.h"
#include "xyssl/havege.h"
#include "xyssl/timing.h"
#include "xyssl/certs.h"
```

Data Structures

- struct [options](#)

Defines

- #define [OPMODE_NONE](#) 0
- #define [OPMODE_CLIENT](#) 1
- #define [OPMODE_SERVER](#) 2
- #define [IOMODE_BLOCK](#) 0
- #define [IOMODE_NONBLOCK](#) 1
- #define [COMMAND_READ](#) 1
- #define [COMMAND_WRITE](#) 2
- #define [COMMAND_BOTH](#) 3
- #define [DFL_OPMODE](#) OPMODE_NONE
- #define [DFL_IOMODE](#) IOMODE_BLOCK
- #define [DFL_SERVER_NAME](#) "localhost"
- #define [DFL_SERVER_PORT](#) 4433
- #define [DFL_COMMAND](#) COMMAND_READ
- #define [DFL_BUFFER_SIZE](#) 1024
- #define [DFL_MAX_BYTES](#) 0
- #define [DFL_DEBUG_LEVEL](#) 0
- #define [DFL_CONN_TIMEOUT](#) 0
- #define [DFL_MAX_CONNECTIONS](#) 0
- #define [DFL_SESSION_REUSE](#) 1
- #define [DFL_SESSION_LIFETIME](#) 86400
- #define [DFL_FORCE_CIPHER](#) 0
- #define [USAGE](#)

Functions

- unsigned long int [lcppm5](#) (unsigned long int *state)
- void [my_debug](#) (void *ctx, int level, char *str)
- static int [ssl_test](#) (struct [options](#) *opt)
- int [main](#) (int argc, char *argv[])

Variables

- `char * dhm_G = "4"`
- `char * dhm_P`
- `int server_fd = -1`

7.160.1 Define Documentation

7.160.1.1 `#define COMMAND_BOTH 3`

Definition at line 44 of file ssl_test.c.

Referenced by `main()`.

7.160.1.2 `#define COMMAND_READ 1`

Definition at line 42 of file ssl_test.c.

Referenced by `main()`, and `ssl_test()`.

7.160.1.3 `#define COMMAND_WRITE 2`

Definition at line 43 of file ssl_test.c.

Referenced by `main()`, and `ssl_test()`.

7.160.1.4 `#define DFL_BUFFER_SIZE 1024`

Definition at line 51 of file ssl_test.c.

Referenced by `main()`.

7.160.1.5 `#define DFL_COMMAND COMMAND_READ`

Definition at line 50 of file ssl_test.c.

Referenced by `main()`.

7.160.1.6 `#define DFL_CONN_TIMEOUT 0`

Definition at line 54 of file ssl_test.c.

Referenced by `main()`.

7.160.1.7 `#define DFL_DEBUG_LEVEL 0`

Definition at line 53 of file ssl_test.c.

Referenced by `main()`.

7.160.1.8 #define DFL_FORCE_CIPHER 0

Definition at line 58 of file ssl_test.c.

Referenced by main(), and ssl_test().

7.160.1.9 #define DFL_IOMODE_IOMODE_BLOCK

Definition at line 47 of file ssl_test.c.

Referenced by main().

7.160.1.10 #define DFL_MAX_BYTES 0

Definition at line 52 of file ssl_test.c.

Referenced by main().

7.160.1.11 #define DFL_MAX_CONNECTIONS 0

Definition at line 55 of file ssl_test.c.

Referenced by main().

7.160.1.12 #define DFL_OPMODE_OPMODE_NONE

Definition at line 46 of file ssl_test.c.

Referenced by main().

7.160.1.13 #define DFL_SERVER_NAME "localhost"

Definition at line 48 of file ssl_test.c.

Referenced by main().

7.160.1.14 #define DFL_SERVER_PORT 4433

Definition at line 49 of file ssl_test.c.

Referenced by main().

7.160.1.15 #define DFL_SESSION_LIFETIME 86400

Definition at line 57 of file ssl_test.c.

Referenced by main().

7.160.1.16 #define DFL_SESSION_REUSE 1

Definition at line 56 of file ssl_test.c.

Referenced by main().

7.160.1.17 #define IOMODE_BLOCK 0

Definition at line 39 of file ssl_test.c.

Referenced by main().

7.160.1.18 #define IOMODE_NONBLOCK 1

Definition at line 40 of file ssl_test.c.

Referenced by main(), and ssl_test().

7.160.1.19 #define OPMODE_CLIENT 1

Definition at line 36 of file ssl_test.c.

Referenced by main(), and ssl_test().

7.160.1.20 #define OPMODE_NONE 0

Definition at line 35 of file ssl_test.c.

7.160.1.21 #define OPMODE_SERVER 2

Definition at line 37 of file ssl_test.c.

Referenced by main(), and ssl_test().

7.160.1.22 #define USAGE**Value:**

```
"\n usage: ssl_test opmode=<> command=<>...\n"
  "\n acceptable parameters:\n"
  "  opmode=client/server           default: <none>\n"
  "  iomode=block/nonblock          default: block\n"
  "  server_name=%s                default: localhost\n"
  "  server_port=%d                default: 4433\n"
  "  command=read/write/both       default: read\n"
  "  buffer_size=%d (bytes)        default: 1024\n"
  "  max_bytes=%d (bytes)         default: 0 (no limit)\n"
  "  debug_level=%d                default: 0 (disabled)\n"
  "  conn_timeout=%d (ms)          default: 0 (no timeout)\n"
  "  max_connections=%d            default: 0 (no limit)\n"
  "  session_reuse=on/off          default: on (enabled)\n"
  "  session_lifetime=%d (s)       default: 86400\n"
  "  force_cipher=<name>          default: all enabled\n"
  "  acceptable cipher names:\n"
  "    SSL_RSA_RC4_128_MD5          SSL_RSA_RC4_128_SHA\n"
  "    SSL_RSA_DES_168_SHA          SSL_EDH_RSA_DES_168_SHA\n"
  "    SSL_RSA_AES_128_SHA          SSL_EDH_RSA_AES_256_SHA\n"
  "    SSL_RSA_AES_256_SHA\n\n"
```

Definition at line 372 of file ssl_test.c.

7.160.2 Function Documentation

7.160.2.1 **unsigned long int lc ppm5 (unsigned long int * state)**

Definition at line 96 of file ssl_test.c.

Referenced by ssl_test().

7.160.2.2 **int main (int argc, char * argv[])**

Definition at line 394 of file ssl_test.c.

References options::buffer_size, options::command, COMMAND_BOTH, COMMAND_READ, COMMAND_WRITE, options::conn_timeout, options::debug_level, DFL_BUFFER_SIZE, DFL_COMMAND, DFL_CONN_TIMEOUT, DFL_DEBUG_LEVEL, DFL_FORCE_CIPHER, DFL_IOMODE, DFL_MAX_BYT ES, DFL_MAX_CONNECTIONS, DFL_OPMODE, DFL_SERVER_NAME, DFL_SERVER_PORT, DFL_SESSION_LIFETIME, DFL_SESSION_REUSE, options::force_cipher, options::iomode, IOMODE_BLOCK, IOMODE_NONBLOCK, options::max_bytes, options::max_connections, options::opmode, OPMODE_CLIENT, OPMODE_SERVER, options::server_name, options::server_port, options::session_lifetime, options::session_reuse, SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA DES_168_SHA, SSL_RSA_AES_128_SHA, SSL_RSA_AES_256_SHA, SSL_RSA DES_168_SHA, SSL_RSA_RC4_128_MD5, SSL_RSA_RC4_128_SHA, ssl_test(), USAGE, and usage().

7.160.2.3 **void my_debug (void * ctx, int level, char * str)**

Definition at line 113 of file ssl_test.c.

7.160.2.4 **static int ssl_test (struct options * opt) [static]**

Definition at line 122 of file ssl_test.c.

References options::buffer_size, client_fd, options::command, COMMAND_READ, COMMAND_WRITE, options::conn_timeout, DFL_FORCE_CIPHER, dhm_G, dhm_P, options::force_cipher, get_timer(), havege_init(), havege_rand(), options::iomode, IOMODE_NONBLOCK, lc ppm5(), options::max_bytes, my_debug(), net_accept(), net bind(), net_close(), net_connect(), net_recv(), net_send(), net_set_nonblock(), _x509_cert::next, options::opmode, OPMODE_CLIENT, OPMODE_SERVER, rsa_free(), server_fd, options::server_name, options::server_port, options::session_lifetime, options::session_reuse, ssl_close_notify(), ssl_default_ciphers, ssl_free(), ssl_init(), SSL_IS_CLIENT, SSL_IS_SERVER, ssl_read(), ssl_set_authmode(), ssl_set_bio(), ssl_set_ca_chain(), ssl_set_ciphers(), ssl_set_dbg(), ssl_set_dh_param(), ssl_set_endpoint(), ssl_set_own_cert(), ssl_set_rng(), ssl_set_session(), SSL_VERIFY_NONE, ssl_write(), test_ca_crt, test_srv_crt, test_srv_key, x509_free(), x509parse_crt(), x509parse_key(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_TRY AGAIN, and XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY.

Referenced by main().

7.160.3 Variable Documentation

7.160.3.1 **char* dhm_G = "4"**

Definition at line 63 of file ssl_test.c.

Referenced by ssl_test().

7.160.3.2 char* dhm_P

Initial value:

```
"E4004C1F94182000103D883A448B3F802CE4B44A83301270002C20D0321CFD00"  
"11CCEF784C26A400F43DFB901BCA7538F2C6B176001CF5A0FD16D2C48B1D0C1C"  
"F6AC8E1DA6BCC3B4E1F96B0564965300FFA1D0B601EB2800F489AA512C4B248C"  
"01F76949A60BB7F00A40B1EAB64BDD48E8A700D60B7F1200FA8E77B0A979DABF"
```

Definition at line 64 of file ssl_test.c.

Referenced by ssl_test().

7.160.3.3 int server_fd = -1

Definition at line 70 of file ssl_test.c.

7.161 /home/dko/Projects/mobilec/src/util/mc_genkey.c File Reference

```
#include "../security/interface.h"
```

Functions

- void [print_usage\(\)](#)
- int [main\(int argc, char *argv\[\]\)](#)

7.161.1 Function Documentation

7.161.1.1 int main (int *argc*, char * *argv*[])

Definition at line 19 of file mc_genkey.c.

References generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and print_usage().

7.161.1.2 void print_usage ()

Definition at line 11 of file mc_genkey.c.

Referenced by main().

7.162 /home/dko/Projects/mobilec/src/xml_compose.c File Reference

```
#include "config.h"
#include <mxml.h>
#include "include/agent.h"
#include "include/xml_compose.h"
#include "include/xml_helper.h"
```

Functions

- `mxml_node_t * agent_xml_compose (agent_p agent)`
- `mxml_node_t * agent_xml_compose_gaf_message (agent_p agent)`
- `mxml_node_t * agent_xml_compose_message (agent_p agent)`
- `mxml_node_t * agent_xml_compose_mobile_agent (agent_p agent)`
- `mxml_node_t * agent_xml_compose_agent_data (agent_p agent)`
- `mxml_node_t * agent_xml_compose_name (agent_p agent)`
- `mxml_node_t * agent_xml_compose_owner (agent_p agent)`
- `mxml_node_t * agent_xml_compose_home (agent_p agent)`
- `mxml_node_t * agent_xml_compose_wg_code (agent_p agent)`
- `mxml_node_t * agent_xml_compose_tasks (agent_p agent)`
- `mxml_node_t * agent_xml_compose_task (agent_p agent, int index)`
- `mxml_node_t * agent_xml_compose_data (agent_p agent, int index, interpreter_variable_data_t *interp_variable)`
- `mxml_node_t * agent_xml_compose_file (agent_p agent, int index, agent_file_data_t *agent_file_data)`
- `mxml_node_t * agent_xml_compose_agent_code (agent_p agent, int index)`
- `mxml_node_t * agent_xml_compose_row (interpreter_variable_data_t *interp_variable, int index)`
- `mxml_node_t * agent_xml_compose_create_row_nodes (void *data, int index, int *extent, ChType_t type, int dim, int extent_index)`

7.162.1 Function Documentation

7.162.1.1 `mxml_node_t* agent_xml_compose (agent_p agent)`

Definition at line 46 of file xml_compose.c.

References `agent_xml_compose_gaf_message()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmlAdd()`, and `mxmlLoadString()`.

Referenced by `message_InitializeFromAgent()`.

7.162.1.2 `mxml_node_t* agent_xml_compose_agent_code (agent_p agent, int index)`

Definition at line 571 of file xml_compose.c.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_s::datastate`, `MXML_NO_PARENT`, `mxmlElementSetAttr()`, `mxmlNewElement()`, and `xml_new_cdata()`.

Referenced by `agent_xml_compose_tasks()`.

7.162.1.3 mxml_node_t* agent_xml_compose__agent_data (agent_p *agent*)

Definition at line 150 of file xml_compose.c.

References agent_xml_compose__home(), agent_xml_compose__name(), agent_xml_compose__owner(), agent_xml_compose__tasks(), agent_xml_compose__wg_code(), MXML_ADD_AFTER, mxmlAdd(), and mxmlNewElement().

Referenced by agent_xml_compose__mobile_agent().

7.162.1.4 mxml_node_t* agent_xml_compose__create_row_nodes (void * *data*, int *index*, int * *extent*, ChType_t *type*, int *dim*, int *extent_index*)

Definition at line 622 of file xml_compose.c.

References agent_xml_compose__create_row_nodes(), buf, CH_DATATYPE_SIZE, CH_DATATYPE_VALUE_STRING, MXML_ADD_AFTER, MXML_ADD_TO_PARENT, MXML_NO_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and mxmlNewText().

Referenced by agent_xml_compose__create_row_nodes(), and agent_xml_compose__row().

7.162.1.5 mxml_node_t* agent_xml_compose__data (agent_p *agent*, int *index*, interpreter_variable_data_t * *interp_variable*)

Definition at line 478 of file xml_compose.c.

References agent_xml_compose__row(), interpreter_variable_data_s::array_dim, buf, CH_DATATYPE_STRING, CH_DATATYPE_VALUE_STRING, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, MXML_ADD_AFTER, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and interpreter_variable_data_s::name.

Referenced by agent_xml_compose__task().

7.162.1.6 mxml_node_t* agent_xml_compose__file (agent_p *agent*, int *index*, agent_file_data_t * *agent_file_data*)

Definition at line 552 of file xml_compose.c.

References agent_file_data_s::data, MXML_NO_PARENT, mxmlElementSetAttr(), mxmlNewElement(), mxmlNewText(), and agent_file_data_s::name.

Referenced by agent_xml_compose__task().

7.162.1.7 mxml_node_t* agent_xml_compose__gaf_message (agent_p *agent*)

Definition at line 66 of file xml_compose.c.

References agent_xml_compose__message(), MXML_ADD_AFTER, mxmlAdd(), and mxmlNewElement().

Referenced by agent_xml_compose().

7.162.1.8 mxml_node_t* agent_xml_compose__home (agent_p *agent*)

Definition at line 253 of file xml_compose.c.

References `agent_s::home`, `mxmlNewElement()`, and `mxmlNewText()`.

Referenced by `agent_xml_compose__agent_data()`.

7.162.1.9 `mxml_node_t* agent_xml_compose__message (agent_p agent)`

Definition at line 85 of file `xml_compose.c`.

References `agent_s::agent_type`, `agent_xml_compose__mobile_agent()`, `MC_LOCAL_AGENT`, `MC_REMOTE_AGENT`, `MC_RETURN_AGENT`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, and `mxmlNewElement()`.

Referenced by `agent_xml_compose__gaf_message()`.

7.162.1.10 `mxml_node_t* agent_xml_compose__mobile_agent (agent_p agent)`

Definition at line 129 of file `xml_compose.c`.

References `agent_xml_compose__agent_data()`, `MXML_ADD_AFTER`, `mxmlAdd()`, and `mxmlNewElement()`.

Referenced by `agent_xml_compose__message()`.

7.162.1.11 `mxml_node_t* agent_xml_compose__name (agent_p agent)`

Definition at line 221 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::name`.

Referenced by `agent_xml_compose__agent_data()`.

7.162.1.12 `mxml_node_t* agent_xml_compose__owner (agent_p agent)`

Definition at line 237 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::owner`.

Referenced by `agent_xml_compose__agent_data()`.

7.162.1.13 `mxml_node_t* agent_xml_compose__row (interpreter_variable_data_t * interp_variable, int index)`

Definition at line 599 of file `xml_compose.c`.

References `agent_xml_compose__create_row_nodes()`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, and `interpreter_variable_data_s::data_type`.

Referenced by `agent_xml_compose__data()`.

7.162.1.14 `mxml_node_t* agent_xml_compose__task (agent_p agent, int index)`

Definition at line 342 of file `xml_compose.c`.

References `agent_file_data_Destroy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_compose_data()`, `agent_xml_compose_file()`, `buf`, `agent_task_s::code_id`, `agent_s::datastate`, `ListPop()`, `ListWRLock()`, `ListWRUnlock()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `agent_task_s::persistent`, `agent_datastate_s::persistent`, `agent_task_s::server_name`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `agent_xml_compose_tasks()`.

7.162.1.15 `mxml_node_t* agent_xml_compose_tasks (agent_p agent)`

Definition at line 285 of file `xml_compose.c`.

References `agent_xml_compose_agent_code()`, `agent_xml_compose_task()`, `buf`, `agent_s::datastate`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::task_progress`.

Referenced by `agent_xml_compose_agent_data()`.

7.162.1.16 `mxml_node_t* agent_xml_compose_wg_code (agent_p agent)`

Definition at line 269 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::wg_code`.

Referenced by `agent_xml_compose_agent_data()`.

7.163 /home/dko/Projects/mobilec/src/xml_helper.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <mxml.h>
#include "include/xml_helper.h"
#include "include/macros.h"
```

Functions

- [mxml_node_t * xml_find_sibling \(const mxml_node_t *node, const char *sibling_name\)](#)
- [char * xml_get_cdata \(const mxml_node_t *node\)](#)
- [mxml_node_t * xml_get_child \(const mxml_node_t *node, const char *child_name, int descend\)](#)
- [mxml_node_t * xml_get_deep_child \(const mxml_node_t *parent, const char **child_path\)](#)
- [mxml_node_t * xml_get_next_element \(const mxml_node_t *node\)](#)
- [char * xml_get_text \(const mxml_node_t *node\)](#)
- [char * xml_get_element_name \(const mxml_node_t *node\)](#)
- [mxml_node_t * xml_new_cdata \(mxml_node_t *parent, const char *text\)](#)
- [const char * whitespace_cb \(mxml_node_t *node, int where\)](#)

7.163.1 Function Documentation

7.163.1.1 const char* whitespace_cb (mxml_node_t * *node*, int *where*)

Definition at line 254 of file xml_helper.c.

References MXML_WS_AFTER_CLOSE, and MXML_WS_BEFORE_OPEN.

Referenced by main().

7.163.1.2 mxml_node_t* xml_find_sibling (const mxml_node_t * *node*, const char * *sibling_name*)

Definition at line 54 of file xml_helper.c.

References MXML_NO_DESCEND, mxmlFindElement(), mxml_node_s::parent, and xml_get_element_name().

7.163.1.3 char* xml_get_cdata (const mxml_node_t * *node*)

Definition at line 76 of file xml_helper.c.

References buf, CHECK_NULL, MXML_ELEMENT, mxml_node_s::type, and xml_get_element_name().

Referenced by xml_get_text().

7.163.1.4 mxml_node_t* xml_get_child (const mxml_node_t * *node*, const char * *child_name*, int *descend*)

Definition at line 109 of file xml_helper.c.

References mxmlFindElement().

Referenced by agent_return_xml_parse(), agent_xml_parse_agent_data(), agent_xml_parse_data(), agent_xml_parse_mobile_agent(), message_xml_parse(), message_xml_parse_message(), and xml_get_deep_child().

7.163.1.5 mxml_node_t* xml_get_deep_child (const mxml_node_t * *parent*, const char ** *child_path*)

Definition at line 128 of file xml_helper.c.

References MXML_NO_DESCEND, and xml_get_child().

7.163.1.6 char* xml_get_element_name (const mxml_node_t * *node*)

Definition at line 222 of file xml_helper.c.

References mxml_value_u::element, MXML_ELEMENT, mxml_value_s::name, mxml_node_s::type, and mxml_node_s::value.

Referenced by agent_xml_parse_data(), agent_xml_parse_mobile_agent(), agent_xml_parse_row(), message_xml_parse(), xml_find_sibling(), and xml_get_cdata().

7.163.1.7 mxml_node_t* xml_get_next_element (const mxml_node_t * *node*)

Definition at line 142 of file xml_helper.c.

References MXML_ELEMENT, mxml_node_s::next, and mxml_node_s::type.

7.163.1.8 char* xml_get_text (const mxml_node_t * *node*)

Definition at line 160 of file xml_helper.c.

References CHECK_NULL, mxml_node_s::child, mxml_value_u::element, MXML_ELEMENT, MXML_TEXT, mxml_value_s::name, mxml_node_s::next, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and xml_get_cdata().

Referenced by agent_xml_parse_agent_code(), agent_xml_parse_file(), agent_xml_parse_home(), agent_xml_parse_name(), agent_xml_parse_owner(), agent_xml_parse_sender(), and agent_xml_parse_wg_code().

7.163.1.9 mxml_node_t* xml_new_cdata (mxml_node_t * *parent*, const char * *text*)

Definition at line 235 of file xml_helper.c.

References CHECK_NULL, and mxmlNewElement().

Referenced by agent_xml_compose_agent_code().

7.164 /home/dko/Projects/mobilec/src/xml_parser.c File Reference

```
#include <mxmxml.h>
#include <string.h>
#include <stdlib.h>
#include "config.h"
#include "include/agent_file_data.h"
#include "include/interpreter_variable_data.h"
#include "include/message.h"
#include "include/xml_parser.h"
#include "include/xml_helper.h"
```

Defines

- `#define _XOPEN_SOURCE 600`

Functions

- `error_code_t agent_xml_parse (agent_p agent)`
- `error_code_t agent_xml_parse_mobile_agent (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse_agent_data (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse_name (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse_owner (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse_home (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse_sender (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse_wg_code (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse_tasks (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse_task (agent_p agent, xml_parser_p xml_parser, int index)`
- `error_code_t agent_xml_parse_data (agent_p agent, xml_parser_p xml_parser, int index)`
- `error_code_t agent_xml_parse_file (agent_p agent, xml_parser_p xml_parser, int index)`
- `error_code_t agent_xml_parse_row (interpreter_variable_data_t *interp_variable, xml_parser_p xml_parser, int index)`
- `void agent_xml_parse_fill_row_data (void *data, ChType_t type, int *extent, const mxml_node_t *node, int *index)`
- `error_code_t agent_xml_parse_agent_code (agent_p agent, int index, xml_parser_p xml_parser)`
- `error_code_t agent_return_xml_parse (agent_p agent)`
- `error_code_t message_xml_parse (message_p message)`
- `error_code_t message_xml_parse_message (message_p message, xml_parser_p xml_parser)`

7.164.1 Define Documentation

7.164.1.1 #define _XOPEN_SOURCE 600

Definition at line 38 of file `xml_parser.c`.

7.164.2 Function Documentation

7.164.2.1 error_code_t agent_return_xml_parse (agent_p *agent*)

Definition at line 973 of file xml_parser.c.

References agent_xml_parse__home(), agent_xml_parse__name(), agent_xml_parse__owner(), agent_xml_parse__tasks(), agent_s::datastate, MC_SUCCESS, xml_get_child(), and agent_datastate_s::xml_root.

7.164.2.2 error_code_t agent_xml_parse (agent_p *agent*)

Definition at line 53 of file xml_parser.c.

References agent_xml_parse__mobile_agent(), agent_s::datastate, MC_SUCCESS, and agent_datastate_s::xml_agent_root.

Referenced by agent_Initialize().

7.164.2.3 error_code_t agent_xml_parse__agent_code (agent_p *agent*, int *index*, xml_parser_p *xml_parser*)

Definition at line 932 of file xml_parser.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_task_s::code_id, agent_s::datastate, MC_SUCCESS, mxmlelementGetAttr(), agent_datastate_s::number_of_tasks, agent_datastate_s::task_progress, agent_datastate_s::tasks, and xml_get_text().

Referenced by agent_xml_parse__tasks().

7.164.2.4 error_code_t agent_xml_parse__agent_data (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 94 of file xml_parser.c.

References agent_xml_parse__home(), agent_xml_parse__name(), agent_xml_parse__owner(), agent_xml_parse__sender(), agent_xml_parse__tasks(), agent_xml_parse__wg_code(), MC_ERR_PARSE, MC_SUCCESS, and xml_get_child().

Referenced by agent_xml_parse__mobile_agent().

7.164.2.5 error_code_t agent_xml_parse__data (agent_p *agent*, xml_parser_p *xml_parser*, int *index*)

Definition at line 561 of file xml_parser.c.

References agent_task_s::agent_return_data, agent_task_s::agent_variable_list, agent_xml_parse__row(), interpreter_variable_data_s::array_dim, CH_DATATYPE_SIZE, CH_DATATYPE_STR_TO_VAL, CH_STRING_DATATYPE, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, interpreter_variable_data_New(), ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR_PARSE, MC_SUCCESS, mxmlelementGetAttr(), interpreter_variable_data_s::name, mxmle_node_s::parent, agent_task_s::persistent, agent_datastate_s::tasks, xml_get_child(), and xml_get_element_name().

Referenced by agent_xml_parse__task().

7.164.2.6 error_code_t agent_xml_parse_file (agent_p *agent*, xml_parser_p *xml_parser*, int *index*)

Definition at line 709 of file xml_parser.c.

References agent_file_data_NewWithData(), agent_task_s::agent_file_list, CHECK_NULL, agent_s::datastate, ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR_PARSE, MC_SUCCESS, mxmlelementGetAttr(), agent_datastate_s::tasks, and xml_get_text().

Referenced by agent_xml_parse_task().

7.164.2.7 void agent_xml_parse_fill_row_data (void * *data*, ChType_t *type*, int * *extent*, const mxml_node_t * *node*, int * *index*)

Definition at line 811 of file xml_parser.c.

References agent_xml_parse_fill_row_data(), buf, CH_DATATYPE_SIZE, mxml_node_s::child, MXML_DESCEND_FIRST, MXML_ELEMENT, MXML_TEXT, mxmlelementFindElement(), mxmlelementText_s::string, strtok_r, mxmlelementValue_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by agent_xml_parse_fill_row_data(), and agent_xml_parse_row().

7.164.2.8 error_code_t agent_xml_parse_home (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 220 of file xml_parser.c.

References CHECK_NULL, agent_s::home, MC_SUCCESS, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse_agent_data().

7.164.2.9 error_code_t agent_xml_parse_mobile_agent (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 66 of file xml_parser.c.

References agent_xml_parse_agent_data(), MC_ERR_PARSE, xml_get_child(), and xml_get_element_name().

Referenced by agent_xml_parse().

7.164.2.10 error_code_t agent_xml_parse_name (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 167 of file xml_parser.c.

References CHECK_NULL, MC_ERR_PARSE, MC_SUCCESS, agent_s::name, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse_agent_data().

7.164.2.11 error_code_t agent_xml_parse_owner (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 193 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::owner, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse_agent_data().

7.164.2.12 error_code_t agent_xml_parse__row (interpreter_variable_data_t * *interp_variable*, xml_parser_p *xml_parser*, int *index*)

Definition at line 744 of file xml_parser.c.

References agent_xml_parse_fill_row_data(), interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, MC_SUCCESS, and xml_get_element_name().

Referenced by agent_xml_parse__data().

7.164.2.13 error_code_t agent_xml_parse__sender (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 246 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::sender, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

7.164.2.14 error_code_t agent_xml_parse__task (agent_p *agent*, xml_parser_p *xml_parser*, int *index*)

Definition at line 443 of file xml_parser.c.

References agent_xml_parse__data(), agent_xml_parse__file(), CHECK_NULL, agent_task_s::code_id, agent_s::datastate, MC_ERR_PARSE, MC_SUCCESS, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlelementGetAttr(), mxmlelementFindElement(), agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, and agent_task_s::var_name.

Referenced by agent_xml_parse__tasks().

7.164.2.15 error_code_t agent_xml_parse__tasks (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 305 of file xml_parser.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_task_New(), agent_xml_parse__agent_code(), agent_xml_parse__task(), buf, agent_s::datastate, MC_ERR_PARSE, MXML_DESCEND, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlelementGetAttr(), mxmlelementFindElement(), agent_datastate_s::number_of_tasks, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

7.164.2.16 error_code_t agent_xml_parse__wg_code (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 274 of file xml_parser.c.

References MC_SUCCESS, agent_s::wg_code, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

7.164.2.17 error_code_t message_xml_parse (message_p *message*)

Definition at line 1008 of file xml_parser.c.

References MC_ERR_PARSE, message_xml_parse__message(), MXML_DESCEND, MXML_NO_-DESCEND, mxmlFindElement(), xml_get_child(), xml_get_element_name(), and message_s::xml_root.

Referenced by acc_connection_Thread(), message_InitializeFromConnection(), and message_InitializeFromString().

7.164.2.18 `error_code_t message_xml_parse__message (message_p message, xml_parser_p xml_parser)`

Definition at line 1063 of file xml_parser.c.

References message_s::addr, buf, CHECK_NULL, ENCRYPTED_DATA, ENCRYPTION_INITIALIZE, FIPA_ACL, message_s::from_address, MC_ERR_PARSE, MC_SUCCESS, message_s::message_type, MOBILE_AGENT, mxmlElementGetAttr(), port, REQUEST_ENCRYPTION_INITIALIZE, RETURN_-MSG, strtok_r, xml_get_child(), and message_s::xml_payload.

Referenced by message_xml_parse().

Index

~foo_c
 foo_c, 112
~foo_s
 foo_s, 115
/home/dko/Projects/mobilec/src/acc.c, 183
/home/dko/Projects/mobilec/src/agent.c, 188
/home/dko/Projects/mobilec/src/agent_datastate.c,
 192
/home/dko/Projects/mobilec/src/agent_file_data.c,
 193
/home/dko/Projects/mobilec/src/agent_return_-
 data.c, 195
/home/dko/Projects/mobilec/src/agent_task.c, 197
/home/dko/Projects/mobilec/src/ams.c, 199
/home/dko/Projects/mobilec/src/barrier.c, 201
/home/dko/Projects/mobilec/src/cmd_prompt.c,
 202
/home/dko/Projects/mobilec/src/connection.c, 205
/home/dko/Projects/mobilec/src/df.c, 206
/home/dko/Projects/mobilec/src/dynstring.c, 210
/home/dko/Projects/mobilec/src/fipa_acl.c, 211
/home/dko/Projects/mobilec/src/fipa_envelope.c,
 224
/home/dko/Projects/mobilec/src/include/acc.h, 232
/home/dko/Projects/mobilec/src/include/agent.h,
 235
/home/dko/Projects/mobilec/src/include/agent_-
 datastate.h, 239
/home/dko/Projects/mobilec/src/include/agent_-
 file_data.h, 241
/home/dko/Projects/mobilec/src/include/agent_-
 lib.h, 243
/home/dko/Projects/mobilec/src/include/agent_-
 task.h, 255
/home/dko/Projects/mobilec/src/include/ams.h, 257
/home/dko/Projects/mobilec/src/include/barrier.h,
 259
/home/dko/Projects/mobilec/src/include/cmd_-
 prompt.h, 261
/home/dko/Projects/mobilec/src/include/commands.h, /home/dko/Projects/mobilec/src/libb64-
 1.2/base64/base64.cc, 415
/home/dko/Projects/mobilec/src/include/commands.x, /home/dko/Projects/mobilec/src/libb64-
 1.2/include/b64/cdecode.h, 416
/home/dko/Projects/mobilec/src/include/connection.h, /home/dko/Projects/mobilec/src/libb64-
 1.2/include/b64/cencode.h, 418

/home/dko/Projects/mobilec/src/libb64-
1.2/include/b64/decode.h, 420
 /home/dko/Projects/mobilec/src/libb64-
1.2/include/b64/encode.h, 421
 /home/dko/Projects/mobilec/src/libb64-
1.2/src/cdecode.c, 422
 /home/dko/Projects/mobilec/src/libb64-
1.2/src/cencode.c, 423
 /home/dko/Projects/mobilec/src/libmc.c, 425
 /home/dko/Projects/mobilec/src/mc_list/list.c, 488
 /home/dko/Projects/mobilec/src/mc_list/list.h, 494
 /home/dko/Projects/mobilec/src/mc_platform.c,
501
 /home/dko/Projects/mobilec/src/mc_rwlock.c, 503
 /home/dko/Projects/mobilec/src/mc_sync-sync_-
list.c, 505
 /home/dko/Projects/mobilec/src/mc_sync-sync_-
list.h, 507
 /home/dko/Projects/mobilec/src/message.c, 510
 /home/dko/Projects/mobilec/src/message_queue.c,
515
 /home/dko/Projects/mobilec/src/mtp_http.c, 516
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/config.h, 521
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
attr.c, 525
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
entity.c, 526
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
file.c, 528
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
index.c, 535
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
node.c, 537
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
private.c, 540
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
search.c, 542
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
set.c, 543
 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-
string.c, 545
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/mxml.h, 546
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/mxmldoc.c, 558
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/test/class.hxx, 562
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/test/enum.hxx, 563
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/test/function.hxx, 564
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/test/struct.hxx, 565
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/testmxml.c, 566
 /home/dko/Projects/mobilec/src/mxml-
2.2.2/winconfig.h, 567
 /home/dko/Projects/mobilec/src/rwlock.c, 570
 /home/dko/Projects/mobilec/src/security/asm.c, 572
 /home/dko/Projects/mobilec/src/security/asm.h,
573
 /home/dko/Projects/mobilec/src/security/asm_-
message_composer.c, 574
 /home/dko/Projects/mobilec/src/security/asm_-
message_composer.h, 575
 /home/dko/Projects/mobilec/src/security/asm_-
message_parser.c, 576
 /home/dko/Projects/mobilec/src/security/asm_-
message_parser.h, 577
 /home/dko/Projects/mobilec/src/security/asm_-
node.c, 578
 /home/dko/Projects/mobilec/src/security/asm_-
node.h, 579
 /home/dko/Projects/mobilec/src/security/interface.c,
580
 /home/dko/Projects/mobilec/src/security/interface.h,
584
 /home/dko/Projects/mobilec/src/security/mc_dh.c,
589
 /home/dko/Projects/mobilec/src/security/mc_dh.h,
590
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/aes.h, 591
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/arc4.h, 595
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/base64.h, 597
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/bignum.h, 599
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/bn_mul.h, 615
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/certs.h, 617
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/config.h, 522
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/debug.h, 619
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/des.h, 622
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/dhm.h, 627
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/havege.h, 632
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/md2.h, 634
 /home/dko/Projects/mobilec/src/security/xyssl-
0.9/include/xyssl/md4.h, 638

/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md5.h, 642
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/net.h, 647
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/openssl.h, 652
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h, 656
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/rsa.h, 657
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h, 667
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha2.h, 672
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha4.h, 677
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h, 682
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h, 706
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h, 708
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/aes.c, 723
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/arc4.c, 732
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/base64.c, 735
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/bignum.c, 739
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c, 756
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/debug.c, 760
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/des.c, 762
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/dhm.c, 775
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/havege.c, 779
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c, 781
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c, 782
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md5.c, 783
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/net.c, 792
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/padlock.c, 796
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/rsa.c, 797
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha1.c, 807
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha2.c, 816
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha4.c, 825
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_cli.c, 834
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_srv.c, 837
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_tls.c, 840
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/timing.c, 854
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/x509parse.c, 857
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/aes/aescrypt2.c, 866
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/hello.c, 868
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/md5sum.c, 869
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha1sum.c, 870
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha2sum.c, 871
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_client.c, 872
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_genprime.c, 873
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_server.c, 874
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/mpi_demo.c, 875
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_genkey.c, 876
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_sign.c, 877
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_verify.c, 878
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client1.c, 879
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client2.c, 881
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_server.c, 883
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/benchmark.c, 886
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/selftest.c, 888
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c, 889
/home/dko/Projects/mobilec/src/util/mc_genkey.c, 895
/home/dko/Projects/mobilec/src/winconfig.h, 569
/home/dko/Projects/mobilec/src/xml_compose.c,

896
 /home/dko/Projects/mobilec/src/xml_helper.c, 900
 /home/dko/Projects/mobilec/src/xml_parser.c, 902
`_ERROR_CODE_E_`
 libmc.h, 324
`_FIPA_PERFORMATIVE_E_`
 libmc.h, 324
`_XOPEN_SOURCE`
 xml_parser.c, 902
`_RSA_Passthrough`
 openssl.h, 655
`_buffersize`
 base64::decoder, 74
 base64::encoder, 81
`_hr_time`, 15
 start, 15
`_ssl_context`, 16
 authmode, 17
 ca_chain, 17
 ciphers, 17
 client_auth, 17
 ctx_dec, 18
 ctx_enc, 18
 dhm_ctx, 18
 do_crypt, 18
 endpoint, 18
 f_dbg, 18
 f_recv, 19
 f_rng, 19
 f_send, 19
 fin_md5, 19
 fin_sha1, 19
 hostname, 19
 hostname_len, 19
`in_ctr`, 19
`in_hdr`, 20
`in_hflen`, 20
`in_left`, 20
`in_msg`, 20
`in_msflen`, 20
`in_msftype`, 20
`in_offt`, 21
`iv_dec`, 21
`iv_enc`, 21
`ivlen`, 21
`keylen`, 21
`mac_dec`, 21
`mac_enc`, 22
`maclen`, 22
`major_ver`, 22
`max_major_ver`, 22
`max_minor_ver`, 22
`minlen`, 22
`minor_ver`, 22

`nb_zero`, 23
`out_ctr`, 23
`out_hdr`, 23
`out_left`, 23
`out_msg`, 23
`out_msflen`, 23
`out_msftype`, 24
`own_cert`, 24
`p_dbg`, 24
`p_recv`, 24
`p_rng`, 24
`p_send`, 24
`peer_cert`, 25
`peer_cn`, 25
`pmslen`, 25
`premaster`, 25
`randbytes`, 25
`resume`, 25
`rsa_key`, 26
`s_get`, 26
`s_set`, 26
`session`, 26
`state`, 26
`timeout`, 26
`verify_result`, 27
`_ssl_session`, 28
 cipher, 28
 id, 28
 length, 28
 master, 28
 next, 29
 start, 29
`_state`
 base64::decoder, 74
 base64::encoder, 81
`_x509_buf`, 30
 len, 30
 p, 30
 tag, 30
`_x509_cert`, 31
 ca_istru, 31
 issuer, 31
 issuer_id, 31
 issuer_raw, 31
 max_pathlen, 32
 next, 32
 pk_oid, 32
 raw, 32
 rsa, 32
 serial, 32
 sig, 32
 sig_oid1, 32
 sig_oid2, 33
 subject, 33

subject_id, 33
subject_raw, 33
tbs, 33
v3_ext, 33
valid_from, 33
valid_to, 33
version, 33
`_x509_name`, 35
 next, 35
 oid, 35
 val, 35
`_x509_node`, 36
 data, 36
 end, 36
 len, 36
 p, 36
`_x509_raw`, 37
 issuer, 37
 raw, 37
 serial, 37
 sign, 37
 signalg, 37
 subject, 37
 subpubkey, 37
 tbs, 38
 tbs_signalg, 38
 validity, 38
 version, 38
`_x509_time`, 39
 day, 39
 hour, 39
 min, 39
 mon, 39
 sec, 39
 year, 39

acc
 mc_platform_s, 126

acc.c
 acc_connection_Thread, 185
 acc_Destroy, 186
 acc_Initialize, 186
 acc_MessageHandlerThread, 186
 acc_Start, 186
 acc_Thread, 186
 auth_conn_rece_key, 187
 BACKLOG, 185
 BUFLEN, 185
 CONN_THREADS, 185
 CONNECT_THREAD_EXIT, 185
 listen_Thread, 187
 udplisten_Thread, 187
 UDPPORT, 185

acc.h

acc_connection_Thread, 232
acc_Destroy, 233
acc_MessageHandlerThread, 233
acc_Start, 233
acc_Thread, 233
addr, 234
client_fd, 234
listen_Thread, 233
port, 234
server_fd, 234
STRUCT, 234
udplisten_Thread, 234

acc_connection_Thread
 acc.c, 185
 acc.h, 232

acc_Destroy
 acc.c, 186
 acc.h, 233

acc_Initialize
 acc.c, 186

acc_MessageHandlerThread
 acc.c, 186
 acc.h, 233

acc_Start
 acc.c, 186
 acc.h, 233

acc_Thread
 acc.c, 186
 acc.h, 233

accept_ranges
 mtp_http_s, 150

ACCEPTED
 mtp_http.h, 399

acl_representation
 fipa_acl_Param_s, 88

action_list
 fipa_comm_performative_t, 94

add_variable
 mxmldoc.c, 559

addr
 acc.h, 234
 connection_s, 69
 message_s, 143

addresses
 fipa_agent_identifier_s, 90

aes.c
 aes_crypt_cbc, 726
 aes_crypt_cfb, 726
 aes_crypt_ecb, 727
 AES_FROUND, 724
 aes_gen_tables, 727
 aes_init_done, 728
 AES_RROUND, 724
 aes_self_test, 727

aes_setkey_dec, 727
 aes_setkey_enc, 728
 aes_test_cbc_dec, 728
 aes_test_cbc_enc, 728
 aes_test_cfb_dec, 729
 aes_test_cfb_enc, 729
 aes_test_ecb_dec, 729
 aes_test_ecb_enc, 730
 FSb, 730
 FT0, 730
 FT1, 730
 FT2, 730
 FT3, 730
 GET ULONG LE, 725
 MUL, 725
 PUT ULONG LE, 725
 RCON, 731
 ROTL8, 726
 RSb, 731
 RT0, 731
 RT1, 731
 RT2, 731
 RT3, 731
 XTIME, 726
 aes.h
 aes_crypt_cbc, 592
 aes_crypt_cfb, 592
 aes_crypt_ecb, 592
 AES_DECRYPT, 591
 AES_ENCRYPT, 591
 aes_self_test, 593
 aes_setkey_dec, 593
 aes_setkey_enc, 593
 AES_BLOCK_SIZE
 openssl.h, 653
 AES_cbc_encrypt
 openssl.h, 653
 aes_context, 41
 buf, 41
 nr, 41
 rk, 41
 aes_crypt_cbc
 aes.c, 726
 aes.h, 592
 aes_crypt_cfb
 aes.c, 726
 aes.h, 592
 aes_crypt_ecb
 aes.c, 727
 aes.h, 592
 AES_DECRYPT
 aes.h, 591
 aes_en_de
 interface.c, 580
 interface.h, 586
 AES_ENCRYPT
 aes.h, 591
 AES_FROUND
 aes.c, 724
 aes_gen_tables
 aes.c, 727
 aes_init_done
 aes.c, 728
 AES_KEY
 openssl.h, 653
 AES_key
 connection_s, 69
 AES_RROUND
 aes.c, 724
 aes_self_test
 aes.c, 727
 aes.h, 593
 AES_set_decrypt_key
 openssl.h, 653
 AES_set_encrypt_key
 openssl.h, 653
 aes_setkey_dec
 aes.c, 727
 aes.h, 593
 aes_setkey_enc
 aes.c, 728
 aes.h, 593
 AES_SIZE
 openssl.h, 653
 aes_test_cbc_dec
 aes.c, 728
 aes_test_cbc_enc
 aes.c, 728
 aes_test_cfb_dec
 aes.c, 729
 aes_test_cfb_enc
 aes.c, 729
 aes_test_ecb_dec
 aes.c, 729
 aes_test_ecb_enc
 aes.c, 730
 aescrypt2.c
 main, 867
 MODE_DECRYPT, 866
 MODE_ENCRYPT, 866
 USAGE, 866
 agency
 mc_platform_s, 126
 stationary_agent_info_s, 179
 agency_p
 libmc.h, 325
 agency_s, 42
 agentInitCallback, 42

agentInitUserData, 42
bluetooth, 42
client, 42
default_agentstatus, 43
enable_security, 43
filename, 43
hostName, 43
initInterps, 43
known_host_filename, 43
last_error, 43
mc_platform, 43
portno, 44
portnoc, 44
priv_key_filename, 44
server, 44
stack_size, 44
threads, 45
agency_t
 libmc.h, 325
agent
 fipa_comm_t, 100
 stationary_agent_info_s, 179
agent.c
 agent_AddPersistentVariable, 188
 agent_ChScriptInitVar, 188
 agent_CmpID, 189
 agent_CmpName, 189
 agent_Copy, 189
 agent_Destroy, 189
 agent_Initialize, 190
 agent_New, 190
 agent_NewBinary, 190
 agent_Print, 191
 agent_RunChScript, 191
 agent_RunChScriptThread, 191
agent.h
 agent_AddPersistentVariable, 236
 agent_ChScriptInitVar, 236
 agent_CmpID, 236
 agent_CmpName, 236
 agent_Copy, 237
 agent_Destroy, 237
 agent_Initialize, 237
 agent_New, 237
 agent_NewBinary, 238
 agent_p, 235
 agent_Print, 238
 agent_RunChScript, 238
 agent_RunChScriptThread, 238
 agent_t, 235
 MCAgent_t, 235
AGENT_UPDATE
 message.h, 393
agent_AddPersistentVariable
 agent.c, 188
 agent.h, 236
agent_address
 agent_s, 50
 fipa_comm_t, 100
agent_ChScriptInitVar
 agent.c, 188
 agent.h, 236
agent_CmpID
 agent.c, 189
 agent.h, 236
agent_CmpName
 agent.c, 189
 agent.h, 236
agent_code
 agent_datastate_s, 46
agent_code_ids
 agent_datastate_s, 46
agent_codes
 agent_datastate_s, 46
agent_Copy
 agent.c, 189
 agent.h, 237
agent_datastate.c
 agent_datastate_Copy, 192
 agent_datastate_Destroy, 192
 agent_datastate_New, 192
agent_datastate.h
 agent_datastate_Copy, 239
 agent_datastate_Destroy, 239
 agent_datastate_New, 240
 agent_datastate_p, 239
 agent_datastate_t, 239
agent_datastate_Copy
 agent_datastate.c, 192
 agent_datastate.h, 239
agent_datastate_Destroy
 agent_datastate.c, 192
 agent_datastate.h, 239
agent_datastate_New
 agent_datastate.c, 192
 agent_datastate.h, 240
agent_datastate_p
 agent_datastate.h, 239
agent_datastate_s, 46
 agent_code, 46
 agent_code_ids, 46
 agent_codes, 46
 init_agent_status, 46
 number_of_tasks, 47
 persistent, 47
 progress_modifier, 47
 return_data, 47
 task_progress, 47

tasks, 47
 xml_agent_root, 48
 xml_root, 48
 agent_datastate_t
 agent_datastate.h, 239
 agent_Destroy
 agent.c, 189
 agent.h, 237
 agent_file_data.c
 agent_file_data_CmpName, 193
 agent_file_data_Copy, 193
 agent_file_data_Destroy, 193
 agent_file_data_Encode, 193
 agent_file_data_InitializeFromFilename, 193
 agent_file_data_New, 194
 agent_file_data_NewWithData, 194
 agent_file_data.h
 agent_file_data_CmpName, 241
 agent_file_data_Copy, 241
 agent_file_data_Destroy, 241
 agent_file_data_Encode, 242
 agent_file_data_InitializeFromFilename, 242
 agent_file_data_New, 242
 agent_file_data_NewWithData, 242
 agent_file_data_p, 241
 agent_file_data_SaveToFile, 242
 agent_file_data_t, 241
 agent_file_data_CmpName
 agent_file_data.c, 193
 agent_file_data.h, 241
 agent_file_data_Copy
 agent_file_data.c, 193
 agent_file_data.h, 241
 agent_file_data_Destroy
 agent_file_data.c, 193
 agent_file_data.h, 241
 agent_file_data_Encode
 agent_file_data.c, 193
 agent_file_data.h, 242
 agent_file_data_InitializeFromFilename
 agent_file_data.c, 193
 agent_file_data.h, 242
 agent_file_data_New
 agent_file_data.c, 194
 agent_file_data.h, 242
 agent_file_data_NewWithData
 agent_file_data.c, 194
 agent_file_data.h, 242
 agent_file_data_p
 agent_file_data.h, 241
 agent_file_data_s, 49
 data, 49
 name, 49
 agent_file_data_SaveToFile

agent_file_data.h, 242
 agent_file_data_t
 agent_file_data.h, 241
 agent_file_list
 agent_task_s, 56
 agent_id
 df.h, 274
 agent_ids
 df.h, 274
 agent_Initialize
 agent.c, 190
 agent.h, 237
 agent_interp
 agent_s, 50
 agent_lib.h
 MC_AclAddReceiver_chdl, 244
 MC_AclAddReplyTo_chdl, 244
 MC_AclDestroy_chdl, 244
 MC_AclGetContent_chdl, 244
 MC_AclGetConversationID_chdl, 245
 MC_AclGetPerformative_chdl, 245
 MC_AclGetProtocol_chdl, 245
 MC_AclGetSender_chdl, 245
 MC_AclNew_chdl, 245
 MC_AclPost_chdl, 245
 MC_AclReply_chdl, 245
 MC_AclRetrieve_chdl, 246
 MC_AclSend_chdl, 246
 MC_AclSetContent_chdl, 246
 MC_AclSetConversationID_chdl, 246
 MC_AclSetPerformative_chdl, 246
 MC_AclSetProtocol_chdl, 246
 MC_AclSetSender_chdl, 246
 MC_AclWaitRetrieve_chdl, 247
 MC_AddAgent_chdl, 247
 MC_AgentAddTask_chdl, 247
 MC_AgentAttachFile_chdl, 247
 MC_AgentListFiles_chdl, 247
 MC_AgentRetrieveFile_chdl, 247
 MC_AgentVariableRetrieve_chdl, 247
 MC_AgentVariableSave_chdl, 248
 MC_Barrier_chdl, 248
 MC_BarrierDelete_chdl, 248
 MC_BarrierInit_chdl, 248
 MC_CallAgentFunc_chdl, 248
 MC_ComposeAgent_chdl, 248
 MC_ComposeAgentFromFile_chdl, 248
 MC_ComposeAgentFromFileWithWorkgroup_-
 chdl, 249
 MC_ComposeAgentWithWorkgroup_chdl,
 249
 MC_CondBroadcast_chdl, 249
 MC_CondReset_chdl, 249
 MC_CondSignal_chdl, 249

MC_CondWait_chdl, 249
MC_DeleteAgent_chdl, 249
MC_DeleteAgentWG_chdl, 250
MC_DeregisterService_chdl, 250
MC_DestroyServiceSearchResult_chdl, 250
MC_End_chdl, 250
MC_FindAgentByID_chdl, 250
MC_FindAgentByName_chdl, 250
MC_GetAgentID_chdl, 250
MC_GetAgentName_chdl, 251
MC_GetAgentNumTasks_chdl, 251
MC_GetAgentStatus_chdl, 251
MC_GetAgentXMLString_chdl, 251
MC_GetTimeOfDay_chdl, 251
MC_HaltAgency_chdl, 251
MC_MigrateAgent_chdl, 251
MC_MutexLock_chdl, 252
MC_MutexUnlock_chdl, 252
MC_PrintAgentCode_chdl, 252
MC_RegisterService_chdl, 252
MC_ResumeAgency_chdl, 252
MC_RetrieveAgent_chdl, 252
MC_RetrieveAgentCode_chdl, 252
MC_SaveData_chdl, 253
MC_SearchForService_chdl, 253
MC_SemaphorePost_chdl, 253
MC_SemaphoreWait_chdl, 253
MC_SendAgentMigrationMessage_chdl, 253
MC_SendAgentMigrationMessageFile_chdl,
 253
MC_SendSteerCommand_chdl, 253
MC_SetAgentStatus_chdl, 254
MC_SetDefaultAgentStatus_chdl, 254
MC_SyncDelete_chdl, 254
MC_SyncInit_chdl, 254
MC_TerminateAgent_chdl, 254
MC_TerminateAgentWG_chdl, 254
agent_name
 df.h, 274
 fipa_comm_t, 100
agent_names
 df.h, 274
agent_New
 agent.c, 190
 agent.h, 237
agent_NewBinary
 agent.c, 190
 agent.h, 238
agent_p
 agent.h, 235
 libmc.h, 325
agent_persistent
 agent_s, 51
agent_pipe_active
 agent_s, 51
 agent_pipe_ready_to_read
 agent_s, 51
 agent_Print
 agent.c, 191
 agent.h, 238
 agent_processing
 mc_platform_s, 126
 agent_queue
 mc_platform_s, 126
 agent_ready_to_send
 agent_s, 51
 agent_return_data
 agent_task_s, 56
agent_return_data.c
 interpreter_variable_data_CmpName, 195
 interpreter_variable_data_Copy, 195
 interpreter_variable_data_Destroy, 195
 interpreter_variable_data_Initialize, 195
 interpreter_variable_data_-
 InitializeFromAgent, 196
 interpreter_variable_data_New, 196
agent_return_xml_parse
 xml_parser.c, 903
agent_RunChScript
 agent.c, 191
 agent.h, 238
agent_RunChScriptThread
 agent.c, 191
 agent.h, 238
agent_s, 50
 agent_address, 50
 agent_interp, 50
 agent_persistent, 51
 agent_pipe_active, 51
 agent_pipe_ready_to_read, 51
 agent_ready_to_send, 51
 agent_script_ready, 51
 agent_status, 51
 agent_status_cond, 51
 agent_status_lock, 52
 agent_thread, 52
 agent_thread_id, 52
 agent_type, 52
 arrival_time, 52
 binary, 52
 connect_id, 52
 datastate, 52
 home, 53
 home_port, 53
 id, 53
 lock, 53
 mailbox, 53
 mc_platform, 53

name, 54
 orphan, 54
 owner, 54
 return_data, 54
 run_lock, 54
 sender, 54
 wg_code, 54
agent_script_ready
 agent_s, 51
agent_status
 agent_s, 51
agent_status_cond
 agent_s, 51
agent_status_lock
 agent_s, 52
AGENT_T
 libmc.h, 324
agent_t
 agent.h, 235
 libmc.h, 325
agent_task.c
 agent_task_Copy, 197
 agent_task_Destroy, 197
 agent_task_New, 197
agent_task.h
 agent_task_Copy, 255
 agent_task_Destroy, 255
 agent_task_New, 256
 agent_task_p, 255
 agent_task_t, 255
agent_task_Copy
 agent_task.c, 197
 agent_task.h, 255
agent_task_Destroy
 agent_task.c, 197
 agent_task.h, 255
agent_task_New
 agent_task.c, 197
 agent_task.h, 256
agent_task_p
 agent_task.h, 255
agent_task_s, 56
 agent_file_list, 56
 agent_return_data, 56
 agent_variable_list, 56
 code_id, 56
 init_agent_status, 57
 num_saved_variables, 57
 number_of_elements, 57
 persistent, 57
 saved_variables, 57
 server_name, 57
 size_of_element_array, 57
 var_name, 57
agent_task_t
 agent_task.h, 255
agent_thread
 agent_s, 52
agent_thread_id
 agent_s, 52
agent_type
 agent_s, 52
agent_variable_list
 agent_task_s, 56
agent_xml_compose
 xml_compose.c, 896
 xml_compose.h, 405
agent_xml_compose_agent_code
 xml_compose.c, 896
 xml_compose.h, 405
agent_xml_compose_agent_data
 xml_compose.c, 896
 xml_compose.h, 405
agent_xml_compose_create_row_nodes
 xml_compose.c, 897
 xml_compose.h, 406
agent_xml_compose_data
 xml_compose.c, 897
 xml_compose.h, 406
agent_xml_compose_file
 xml_compose.c, 897
 xml_compose.h, 406
agent_xml_compose_gaf_message
 xml_compose.c, 897
 xml_compose.h, 406
agent_xml_compose_home
 xml_compose.c, 897
 xml_compose.h, 406
agent_xml_compose_message
 xml_compose.c, 898
 xml_compose.h, 407
agent_xml_compose_mobile_agent
 xml_compose.c, 898
 xml_compose.h, 407
agent_xml_compose_name
 xml_compose.c, 898
 xml_compose.h, 407
agent_xml_compose_owner
 xml_compose.c, 898
 xml_compose.h, 407
agent_xml_compose_row
 xml_compose.c, 898
 xml_compose.h, 407
agent_xml_compose_task
 xml_compose.c, 898
 xml_compose.h, 407
agent_xml_compose_tasks
 xml_compose.c, 899

xml_compose.h, 408
agent_xml_compose_wg_code
 xml_compose.c, 899
 xml_compose.h, 408
agent_xml_flag
 message_s, 143
agent_xml_parse
 xml_parser.c, 903
 xml_parser.h, 411
agent_xml_parse_agent_code
 xml_parser.c, 903
 xml_parser.h, 411
agent_xml_parse_agent_data
 xml_parser.c, 903
 xml_parser.h, 411
agent_xml_parse_data
 xml_parser.c, 903
 xml_parser.h, 412
agent_xml_parse_file
 xml_parser.c, 903
 xml_parser.h, 412
agent_xml_parse_fill_row_data
 xml_parser.c, 904
 xml_parser.h, 412
agent_xml_parse_home
 xml_parser.c, 904
 xml_parser.h, 412
agent_xml_parse_mobile_agent
 xml_parser.c, 904
 xml_parser.h, 412
agent_xml_parse_name
 xml_parser.c, 904
 xml_parser.h, 413
agent_xml_parse_owner
 xml_parser.c, 904
 xml_parser.h, 413
agent_xml_parse_row
 xml_parser.c, 904
 xml_parser.h, 413
agent_xml_parse_sender
 xml_parser.c, 905
 xml_parser.h, 413
agent_xml_parse_task
 xml_parser.c, 905
 xml_parser.h, 413
agent_xml_parse_tasks
 xml_parser.c, 905
 xml_parser.h, 413
agent_xml_parse_wg_code
 xml_parser.c, 905
 xml_parser.h, 414
agentInitCallback
 agency_s, 42
agentInitUserData

agency_s, 42
alarmed
 timing.c, 855
 timing.h, 707
alloc_nodes
 mxml_index_s, 157
ams
 mc_platform_s, 126
ams.c
 ams_Destroy, 199
 ams_Initialize, 199
 ams_ManageAgentList, 199
 ams_Print, 199
 ams_Start, 200
 ams_Thread, 200
ams.h
 ams_Destroy, 257
 ams_ManageAgentList, 257
 ams_Print, 257
 ams_RemoveFinishedAgents, 257
 ams_Start, 258
 ams_Thread, 258
 STRUCT, 258
ams_Destroy
 ams.c, 199
 ams.h, 257
ams_Initialize
 ams.c, 199
ams_ManageAgentList
 ams.c, 199
 ams.h, 257
ams_Print
 ams.c, 199
 ams.h, 257
ams_RemoveFinishedAgents
 ams.h, 257
ams_Start
 ams.c, 200
 ams.h, 258
ams_Thread
 ams.c, 200
 ams.h, 258
append_nonce_to_MA
 interface.c, 580
arc4.c
 arc4_crypt, 732
 arc4_self_test, 732
 arc4_setup, 732
 arc4_test_ct, 733
 arc4_test_key, 733
 arc4_test_pt, 733
arc4.h
 arc4_crypt, 595
 arc4_self_test, 595

arc4_setup, 595
 arc4_context, 59
 m, 59
 x, 59
 y, 59
 arc4_crypt
 arc4.c, 732
 arc4.h, 595
 arc4_self_test
 arc4.c, 732
 arc4.h, 595
 arc4_setup
 arc4.c, 732
 arc4.h, 595
 arc4_test_ct
 arc4.c, 733
 arc4_test_key
 arc4.c, 733
 arc4_test_pt
 arc4.c, 733
 args
 command_s, 68
 stationary_agent_info_s, 179
 array_dim
 interpreter_variable_data_s, 121
 array_extent
 interpreter_variable_data_s, 121
 arrival_time
 agent_s, 52
 asm_message_queue
 mc_platform_s, 126
 ASN1_BIT_STRING
 x509.h, 710
 ASN1_BMP_STRING
 x509.h, 710
 ASN1_BOOLEAN
 x509.h, 710
 ASN1_CONSTRUCTED
 x509.h, 711
 ASN1_CONTEXT_SPECIFIC
 x509.h, 711
 asn1_get_bool
 x509parse.c, 858
 asn1_get_int
 x509parse.c, 858
 asn1_get_len
 x509parse.c, 858
 asn1_get_mpi
 x509parse.c, 858
 asn1_get_tag
 x509parse.c, 859
 ASN1_HASH_MDX
 rsa.h, 658
 ASN1_HASH_SHA1

 rsa.h, 658
 ASN1_IA5_STRING
 x509.h, 711
 ASN1_INTEGER
 x509.h, 711
 ASN1_NULL
 x509.h, 711
 ASN1_OCTET_STRING
 x509.h, 711
 ASN1_OID
 x509.h, 711
 ASN1_PRIMITIVE
 x509.h, 711
 ASN1_PRINTABLE_STRING
 x509.h, 712
 ASN1_SEQUENCE
 x509.h, 712
 ASN1_SET
 x509.h, 712
 ASN1_T61_STRING
 x509.h, 712
 ASN1_UNIVERSAL_STRING
 x509.h, 712
 ASN1_UTC_TIME
 x509.h, 712
 ASN1_UTF8_STRING
 x509.h, 712
 attr
 mxxml_index_s, 157
 stationary_agent_info_s, 179
 attrs
 mxxml_value_s, 162
 auth_conn_rece_key
 acc.c, 187
 auth_rece_send_msg
 message.c, 511
 message.h, 393
 authmode
 _ssl_context, 17
 BACKLOG
 acc.c, 185
 BAD_REQUEST
 mtp_http.h, 399
 BADCERT_CN_MISMATCH
 x509.h, 712
 BADCERT_EXPIRED
 x509.h, 712
 BADCERT_NOT_TRUSTED
 x509.h, 713
 BADCERT_REVOKED
 x509.h, 713
 bar
 class.hxx, 562

foo_c, 113
foo_s, 116
barfoo
 foo_c, 113
barrier.c
 barrier_node_CmpID, 201
 barrier_node_Destroy, 201
 barrier_node_Initialize, 201
barrier.h
 barrier_node_CmpID, 259
 barrier_node_Destroy, 259
 barrier_node_Initialize, 260
 barrier_node_p, 259
 barrier_node_t, 259
 barrier_queue_p, 259
 barrier_queue_t, 259
barrier_node_CmpID
 barrier.c, 201
 barrier.h, 259
barrier_node_Destroy
 barrier.c, 201
 barrier.h, 259
barrier_node_Initialize
 barrier.c, 201
 barrier.h, 260
barrier_node_p
 barrier.h, 259
barrier_node_s, 60
 cond, 60
 id, 60
 lock, 60
 num_registered, 60
 num_waiting, 60
barrier_node_t
 barrier.h, 259
barrier_queue
 mc_platform_s, 126
barrier_queue_p
 barrier.h, 259
barrier_queue_s, 62
 list, 62
 lock, 62
 size, 62
barrier_queue_t
 barrier.h, 259
base64, 13
 base64_decode_block, 14
 base64_decode_value, 14
 base64_decodestep, 13
 base64_encode_block, 14
 base64_encode_blockend, 14
 base64_encode_value, 14
 base64_encodestep, 14
 base64_init_decodestate, 14
base64_init_encodestate, 14
step_A, 14
step_a, 13
step_B, 14
step_b, 13
step_C, 14
step_c, 13
step_d, 14
base64.c
 base64_dec_map, 736
 base64_decode, 735
 base64_enc_map, 737
 base64_encode, 736
 base64_self_test, 736
 base64_test_dec, 737
 base64_test_enc, 737
base64.cc
 main, 415
 usage, 415
base64.h
 base64_decode, 597
 base64_encode, 598
 base64_self_test, 598
 XYSSL_ERR_BASE64_BUFFER_TOO_SMALL, 597
 XYSSL_ERR_BASE64_INVALID_CHARACTER, 597
base64::base64_decodestate, 64
 plainchar, 64
 step, 64
base64::base64_encodestate, 66
 result, 66
 step, 66
 stepcount, 66
base64::decoder, 73
 _buffersize, 74
 _state, 74
 decode, 73
 decoder, 73
base64::encoder, 80
 _buffersize, 81
 _state, 81
 encode, 80
 encode_end, 80
 encoder, 80
base64_dec_map
 base64.c, 736
base64_decode
 base64.c, 735
 base64.h, 597
base64_decode_block
 base64, 14
 cdecode.c, 422
 cdecode.h, 416

base64_decode_value
 base64, 14
 cdecode.c, 422
 cdecode.h, 416
 base64_decodestate, 63
 plainchar, 63
 step, 63
 base64_decodestep
 base64, 13
 cdecode.h, 416
 base64_enc_map
 base64.c, 737
 base64_encode
 base64.c, 736
 base64.h, 598
 base64_encode_block
 base64, 14
 cencode.c, 423
 cencode.h, 418
 base64_encode_blockend
 base64, 14
 cencode.c, 423
 cencode.h, 418
 base64_encode_value
 base64, 14
 cencode.c, 423
 cencode.h, 418
 base64_encodestate, 65
 result, 65
 step, 65
 stepcount, 65
 base64_decodestep
 base64, 14
 cencode.h, 418
 base64_init_decodestate
 base64, 14
 cdecode.c, 422
 cdecode.h, 416
 base64_init_encodestate
 base64, 14
 cencode.c, 423
 cencode.h, 419
 base64_self_test
 base64.c, 736
 base64.h, 598
 base64_test_dec
 base64.c, 737
 base64_test_enc
 base64.c, 737
 benchmark.c
 buf, 887
 BUFSIZE, 886
 main, 886
 myrand, 887

bignum.c
 bih, 742
 bil, 742
 BITS_TO_LIMBS, 742
 CHARS_TO_LIMBS, 742
 cil, 742
 mpi_add_abs, 742
 mpi_add_int, 742
 mpi_add_mpi, 743
 mpi_cmp_abs, 743
 mpi_cmp_int, 743
 mpi_cmp_mpi, 743
 mpi_copy, 744
 mpi_div_int, 744
 mpi_div_mpi, 744
 mpi_exp_mod, 745
 mpi_free, 745
 mpi_gcd, 745
 mpi_gen_prime, 745
 mpi_get_digit, 746
 mpi_grow, 746
 mpi_init, 746
 mpi_inv_mod, 747
 mpi_is_prime, 747
 mpi_lsb, 747
 mpi_lset, 747
 mpi_mod_int, 748
 mpi_mod_mpi, 748
 mpi_montg_init, 748
 mpi_montmul, 748
 mpi_montred, 748
 mpi_msb, 749
 mpi_mul_hlp, 749
 mpi_mul_int, 749
 mpi_mul_mpi, 749
 mpi_read_binary, 749
 mpi_read_file, 750
 mpi_read_mystring, 750
 mpi_read_string, 750
 mpi_self_test, 751
 mpi_shift_l, 751
 mpi_shift_r, 751
 mpi_size, 751
 mpi_sub_abs, 752
 mpi_sub_hlp, 752
 mpi_sub_int, 752
 mpi_sub_mpi, 752
 mpi_swap, 752
 mpi_write_binary, 753
 mpi_write_file, 753
 mpi_write_hlp, 753
 mpi_write_string, 754
 small_prime, 754

bignum.h

mpi_add_abs, 603
mpi_add_int, 603
mpi_add_mpi, 603
MPI_CHK, 602
mpi_cmp_abs, 603
mpi_cmp_int, 604
mpi_cmp_mpi, 604
mpi_copy, 604
mpi_div_int, 604
mpi_div_mpi, 605
mpi_exp_mod, 605
mpi_free, 605
mpi_gcd, 606
mpi_gen_prime, 606
mpi_grow, 606
mpi_init, 607
mpi_inv_mod, 607
mpi_is_prime, 607
mpi_lsb, 607
mpi_lset, 608
mpi_mod_int, 608
mpi_mod_mpi, 608
mpi_msb, 608
mpi_mul_int, 609
mpi_mul_mpi, 609
mpi_read_binary, 609
mpi_read_file, 610
mpi_read_mystring, 610
mpi_read_string, 610
mpi_self_test, 610
mpi_shift_l, 611
mpi_shift_r, 611
mpi_size, 611
mpi_sub_abs, 611
mpi_sub_int, 612
mpi_sub_mpi, 612
mpi_swap, 612
mpi_write_binary, 612
mpi_write_file, 613
mpi_write_string, 613
t_dbl, 603
t_int, 603
XYSSL_ERR_MPI_BAD_INPUT_DATA, 602
XYSSL_ERR_MPI_BUFFER_TOO_SMALL, 602
XYSSL_ERR_MPI_DIVISION_BY_ZERO, 602
XYSSL_ERR_MPI_FILE_IO_ERROR, 602
XYSSL_ERR_MPI_INVALID_CHARACTER, 602
XYSSL_ERR_MPI_NEGATIVE_VALUE, 602
XYSSL_ERR_MPI_NOT_ACCEPTABLE, 602
biH
 bignum.c, 742
biL
 bignum.c, 742
binary
 agent_s, 52
BITS_TO_LIMBS
 bignum.c, 742
bluetooth
 agency_s, 42
 mc_platform_s, 127
 MCAgencyOptions_s, 134
bn_mul.h
 MULADDC_CORE, 615
 MULADDC_INIT, 615
 MULADDC_STOP, 615
boundary
 mtp_http_s, 150
buf
 aes_context, 41
 benchmark.c, 887
buffer
 md2_context, 137
 md4_context, 139
 md5_context, 141
 mxml_fdbuf_s, 156
 sha1_context, 173
 sha2_context, 175
 sha4_context, 177
buffer_size
 options, 165
BUFSIZE
 benchmark.c, 886
ca_chain
 _ssl_context, 17
ca_istru
 _x509_cert, 31
cache_control
 mtp_http_s, 150
callback
 fipa_comm_action_t, 92
callbacks
 mxml-entity.c, 527
CANCEL
 message.h, 393
cdecode.c
 base64_decode_block, 422
 base64_decode_value, 422
 base64_init_decodestate, 422

cdecode.h
 base64_decode_block, 416
 base64_decode_value, 416
 base64_decodestep, 416
 base64_init_decodestate, 416
 step_a, 416
 step_b, 416
 step_c, 416
 step_d, 416

cencode.c
 base64_encode_block, 423
 base64_encode_blockend, 423
 base64_encode_value, 423
 base64_init_encodestate, 423
 CHARS_PER_LINE, 424

cencode.h
 base64_encode_block, 418
 base64_encode_blockend, 418
 base64_encode_value, 418
 base64_decodestep, 418
 base64_init_encodestate, 419
 step_A, 418
 step_B, 418
 step_C, 418

certs.c
 test_ca_crt, 756
 test_ca_key, 756
 test_ca_pwd, 756
 test_cli_crt, 757
 test_cli_key, 757
 test_srv_crt, 758
 test_srv_key, 758
 xyssl_ca_crt, 759

certs.h
 test_ca_crt, 617
 test_ca_key, 617
 test_ca_pwd, 617
 test_cli_crt, 617
 test_cli_key, 617
 test_srv_crt, 617
 test_srv_key, 618
 xyssl_ca_crt, 618

cfp_request
 fipa_comm_protocol_cn_t, 95

CH_DATATYPE_SIZE
 macros.h, 374

CH_DATATYPE_STR_TO_VAL
 macros.h, 374

CH_DATATYPE_STRING
 macros.h, 375

CH_DATATYPE_VALUE_STRING
 macros.h, 375

ch_options
 MCAgencyOptions_s, 134

CH_STRING_DATATYPE
 macros.h, 376

CHARS_PER_LINE
 cencode.c, 424

CHARS_TO_LIMBS
 bignum.c, 742

check_list
 fipa_comm_action_t, 92

CHECK_NULL
 macros.h, 376

child
 mxml_node_s, 159

ciL
 bignum.c, 742

cipher
 _ssl_session, 28

ciphers
 _ssl_context, 17

cksum
 md2_context, 137

class.hxx
 bar, 562
 f, 562
 foo, 562

client
 agency_s, 42

client_auth
 _ssl_context, 17

client_fd
 acc.h, 234

client_thread_arg
 mc_platform_s, 127

clientfd
 connection_s, 69

cmd_handler_t
 commands.h, 264

cmd_handlers
 commands.h, 265

cmd_prompt
 mc_platform_s, 127

cmd_prompt.c
 cmd_prompt_Destroy, 202
 cmd_prompt_Initialize, 202
 cmd_prompt_Start, 202
 cmd_prompt_Thread, 203
 dealloc_command, 203
 exec_command, 203
 handler_COMPOSE_SEND, 203
 handler_FLUSH_AGENTS, 203
 handler_HELP, 203
 handler_PRINT_CONNECTLIST, 203
 handler_PRINTLIST_AGENTS, 204
 handler_PRINTLIST_MESSAGE, 204
 handler_QUIT, 204

handler_SEND, 204
process_command, 204
split_string, 204
cmd_prompt.h
 cmd_prompt_Destroy, 262
 cmd_prompt_Initialize, 262
 cmd_prompt_p, 261
 cmd_prompt_Start, 262
 cmd_prompt_t, 261
 cmd_prompt_Thread, 262
CMDLINE_SIZE, 261
command_p, 262
command_t, 262
dealloc_command, 262
exec_command, 262
process_command, 262
split_string, 262
cmd_prompt_Destroy
 cmd_prompt.c, 202
 cmd_prompt.h, 262
cmd_prompt_Initialize
 cmd_prompt.c, 202
 cmd_prompt.h, 262
cmd_prompt_p
 cmd_prompt.h, 261
cmd_prompt_s, 67
 thread, 67
cmd_prompt_Start
 cmd_prompt.c, 202
 cmd_prompt.h, 262
cmd_prompt_t
 cmd_prompt.h, 261
cmd_prompt_Thread
 cmd_prompt.c, 203
 cmd_prompt.h, 262
CMDLINE_SIZE
 cmd_prompt.h, 261
code_id
 agent_task_s, 56
COLLECT_SIZE
 havege.h, 632
COMMAND
 commands.h, 263–265
 commands.x.h, 266
command
 options, 165
COMMAND_BOTH
 ssl_test.c, 890
command_cmds
 commands.h, 265
command_descriptions
 commands.h, 265
command_indices_e
 commands.h, 264
command_p
 cmd_prompt.h, 262
COMMAND_READ
 ssl_test.c, 890
command_s, 68
 args, 68
 index, 68
 num_args, 68
command_t
 cmd_prompt.h, 262
COMMAND_WRITE
 ssl_test.c, 890
commands.h
 cmd_handler_t, 264
 cmd_handlers, 265
 COMMAND, 263–265
 command_cmds, 265
 command_descriptions, 265
 command_indices_e, 264
commands.x.h
 COMMAND, 266
 compose_send, 267
 help, 267
 is, 267
 print_connectlist, 267
 printlist_agents, 267
 send, 267
comments
 fipa_acl_Param_s, 88
COMPOSE_BLOCKSIZE
 dynstring.h, 277
compose_send
 commands.x.h, 267
cond
 barrier_node_s, 60
 mc_rwlock_s, 132
 syncListNode_s, 180
COND_BROADCAST
 macros.h, 377
COND_DESTROY
 macros.h, 377
COND_INIT
 macros.h, 377
COND_NEW
 macros.h, 378
COND_RESET
 macros.h, 378
COND_SIGNAL
 macros.h, 378
COND_SLEEP
 macros.h, 378
COND_SLEEP_ACTION
 macros.h, 378
COND_T

macros.h, 378
 COND_WAIT
 macros.h, 379
 CONFLICT
 mtp_http.h, 399
 CONN_THREADS
 acc.c, 185
 conn_timeout
 options, 165
 connect_id
 agent_s, 52
 connection_s, 69
 message_s, 143
 CONNECT_THREAD_EXIT
 acc.c, 185
 connection
 mtp_http_s, 150
 connection.c
 connection_Copy, 205
 connection_Destroy, 205
 connection_New, 205
 connection_Print, 205
 connection.h
 connection_Close, 268
 connection_Copy, 268
 connection_CreateMessage, 268
 connection_Destroy, 269
 connection_New, 269
 connection_p, 268
 connection_Print, 269
 connection_RecvFromConnection, 269
 connection_SendtoConnection, 269
 connection_SetHosts, 269
 connection_t, 268
 connection_Close
 connection.h, 268
 connection_Copy
 connection.c, 205
 connection.h, 268
 connection_CreateMessage
 connection.h, 268
 connection_Destroy
 connection.c, 205
 connection.h, 269
 connection_New
 connection.c, 205
 connection.h, 269
 connection_p
 connection.h, 268
 connection_Print
 connection.c, 205
 connection.h, 269
 connection_queue
 mc_platform_s, 127
 connection_RecvFromConnection
 connection.h, 269
 connection_s, 69
 addr, 69
 AES_key, 69
 clientfd, 69
 connect_id, 69
 nonce, 69
 remote_hostname, 69
 serverfd, 70
 connection_SendtoConnection
 connection.h, 269
 connection_SetHosts
 connection.h, 269
 connection_t
 connection.h, 268
 content
 fipa_acl_message_s, 85
 fipa_comm_reply_t, 99
 fipa_expression_s, 104
 fipa_string_s, 108
 fipa_word_s, 111
 mtp_http_s, 151
 content_length
 mtp_http_s, 151
 content_type
 mtp_http_content_s, 149
 mtp_http_s, 151
 CONTINUE
 mtp_http.h, 399
 contract_func
 fipa_comm_protocol_cn_t, 95
 conversation_id
 fipa_acl_message_s, 85
 fipa_comm_protocol_t, 97
 CREATED
 mtp_http.h, 399
 ctx_dec
 _ssl_context, 18
 ctx_enc
 _ssl_context, 18
 cur
 ssl_server.c, 884
 cur_node
 mxml_index_s, 157
 current
 mxml_fdbuf_s, 156
 custom
 mxml_value_u, 163
 D
 rsa_context, 168
 d2i_RSA_PUBKEY
 openssl.h, 655

d2i_RSAPrivateKey
 openssl.h, 653

data
 _x509_node, 36
 agent_file_data_s, 49
 fipa_list_t, 105
 interpreter_variable_data_s, 121
 mtp_http_content_s, 149
 mxml_custom_s, 155

data_type
 interpreter_variable_data_s, 121

datastate
 agent_s, 52

date
 fipa_acl_Param_s, 88
 mtp_http_s, 151

datetime
 fipa_expression_s::content_u, 71

day
 _x509_time, 39
 fipa_DateTime_s, 102

dealloc_command
 cmd_prompt.c, 203
 cmd_prompt.h, 262

debug
 fipa_comm_t, 100

debug.c
 debug_fmt, 760
 debug_print_buf, 760
 debug_print_crt, 760
 debug_print_mpi, 760
 debug_print_msg, 760
 debug_print_ret, 761

debug.h
 debug_fmt, 620
 debug_print_buf, 620
 debug_print_crt, 621
 debug_print_mpi, 621
 debug_print_msg, 621
 debug_print_ret, 621
 SSL_DEBUG_BUF, 619
 SSL_DEBUG_CRT, 619
 SSL_DEBUG_MPI, 620
 SSL_DEBUG_MSG, 620
 SSL_DEBUG_RET, 620

debug_fmt
 debug.c, 760
 debug.h, 620

DEBUG_LEVEL
 ssl_client1.c, 879
 ssl_client2.c, 881
 ssl_server.c, 883

debug_level
 options, 165

debug_print_buf
 debug.c, 760
 debug.h, 620

debug_print_crt
 debug.c, 760
 debug.h, 621

debug_print_mpi
 debug.c, 760
 debug.h, 621

debug_print_msg
 debug.c, 760
 debug.h, 621

debug_print_ret
 debug.c, 761
 debug.h, 621

decode
 base64::decoder, 73

decoder
 base64::decoder, 73

default_agent_status
 MCAgencyOptions_s, 134

default_agentstatus
 agency_s, 43
 mc_platform_s, 127

default_callback
 mxml-entity.c, 526

DEFAULT_HOSTNAME_LENGTH
 mc_platform.c, 501

default_reply
 fipa_comm_performative_t, 94
 fipa_comm_t, 100

des.c
 des3_crypt_cbc, 765
 des3_crypt_ecb, 765
 des3_set2key, 765
 des3_set2key_dec, 766
 des3_set2key_enc, 766
 des3_set3key, 766
 des3_set3key_dec, 766
 des3_set3key_enc, 767
 des3_test_buf, 769
 des3_test_cbc_dec, 769
 des3_test_cbc_enc, 769
 des3_test_ecb_dec, 769
 des3_test_ecb_enc, 769
 des3_test_iv, 770
 des3_test_keys, 770
 des_crypt_cbc, 767
 des_crypt_ecb, 767
 DES_FP, 763
 DES_IP, 763
 DES_ROUND, 764
 des_self_test, 768
 des_setkey, 768

des_setkey_dec, 768
 des_setkey_enc, 768
 GET ULONG_BE, 764
 LHs, 770
 PUT ULONG_BE, 764
 RHs, 770
 SB1, 771
 SB2, 771
 SB3, 772
 SB4, 772
 SB5, 772
 SB6, 773
 SB7, 773
 SB8, 774
 SWAP, 765

 des.h
 des3_crypt_cbc, 623
 des3_crypt_ecb, 623
 des3_set2key_dec, 624
 des3_set2key_enc, 624
 des3_set3key_dec, 624
 des3_set3key_enc, 624
 des_crypt_cbc, 625
 des_crypt_ecb, 625
 DES_DECRYPT, 623
 DES_ENCRYPT, 623
 des_self_test, 625
 des_setkey_dec, 626
 des_setkey_enc, 626

 des3_context, 75
 mode, 75
 sk, 75

 des3_crypt_cbc
 des.c, 765
 des.h, 623

 des3_crypt_ecb
 des.c, 765
 des.h, 623

 des3_set2key
 des.c, 765

 des3_set2key_dec
 des.c, 766
 des.h, 624

 des3_set2key_enc
 des.c, 766
 des.h, 624

 des3_set3key
 des.c, 766

 des3_set3key_dec
 des.c, 766
 des.h, 624

 des3_set3key_enc
 des.c, 767
 des.h, 624

 des3_test_buf
 des.c, 769

 des3_test_cbc_dec
 des.c, 769

 des3_test_cbc_enc
 des.c, 769

 des3_test_ecb_dec
 des.c, 769

 des3_test_ecb_enc
 des.c, 769

 des3_test_iv
 des.c, 770

 des3_test_keys
 des.c, 770

 des_context, 76
 mode, 76
 sk, 76

 des_crypt_cbc
 des.c, 767
 des.h, 625

 des_crypt_ecb
 des.c, 767
 des.h, 625

 DES_DECRYPT
 des.h, 623

 DES_ENCRYPT
 des.h, 623

 DES_FP
 des.c, 763

 DES_IP
 des.c, 763

 DES_ROUND
 des.c, 764

 des_self_test
 des.c, 768
 des.h, 625

 des_setkey
 des.c, 768

 des_setkey_dec
 des.c, 768
 des.h, 626

 des_setkey_enc
 des.c, 768
 des.h, 626

 destroy
 mxml_custom_s, 155

 df
 mc_platform_s, 127

 df.c
 df_Add, 207
 df_AddRequest, 207
 df_Destroy, 207
 df_Initialize, 207
 df_node_Destroy, 207

df_ProcessRequest, 207
df_request_list_Destroy, 208
df_request_list_node_Destroy, 208
df_request_list_node_New, 208
df_request_search_Destroy, 208
df_request_search_New, 208
df_SearchForService, 208
df_Start, 208
df_Thread, 209
REQUEST, 206
request_handler_DEREGISTER, 209
request_handler_REGISTER, 209
request_handler_SEARCH, 209
request_handler_SUBSCRIBE, 209

df.h
agent_id, 274
agent_ids, 274
agent_name, 274
agent_names, 274
df_Add, 272
df_AddRequest, 272
df_Destroy, 272
df_Initialize, 272
df_node_Destroy, 272
df_ProcessRequest, 272
df_request_list_Destroy, 272
df_request_list_index_e, 271
df_request_list_node_Destroy, 272
df_request_list_node_New, 273
df_request_search_Destroy, 273
df_request_search_New, 273
df_SearchForService, 273
df_Start, 273
df_Thread, 273
HERE, 271
INSERT, 271
lock, 274
MISC, 271
num_results, 274
num_services, 274
REQUEST, 271, 273, 274
service_name, 275
service_names, 275
service_types, 275
service_types_e, 271
SOME, 271
STRUCT, 274
TYPES, 271
ZERO, 271

df_Add
df.c, 207
df.h, 272
df_AddRequest
df.c, 207

df.h, 272
df_Destroy
df.c, 207
df.h, 272
df_Initialize
df.c, 207
df.h, 272
df_node_Destroy
df.c, 207
df.h, 272
df_ProcessRequest
df.c, 207
df.h, 272
df_request.x.h
register, 276
REQUEST, 276
search, 276

df_request_list_Destroy
df.c, 208
df.h, 272
df_request_list_index_e
df.h, 271
df_request_list_node_Destroy
df.c, 208
df.h, 272
df_request_list_node_New
df.c, 208
df.h, 273
df_request_search_Destroy
df.c, 208
df.h, 273
df_request_search_New
df.c, 208
df.h, 273
df_SearchForService
df.c, 208
df.h, 273
df_Start
df.c, 208
df.h, 273
df_Thread
df.c, 209
df.h, 273

DFL_BUFFER_SIZE
ssl_test.c, 890
DFL_COMMAND
ssl_test.c, 890
DFL_CONN_TIMEOUT
ssl_test.c, 890
DFL_DEBUG_LEVEL
ssl_test.c, 890
DFL_FORCE_CIPHER
ssl_test.c, 890
DFL_IOMODE

ssl_test.c, 891
 DFL_MAX_BYTES
 ssl_test.c, 891
 DFL_MAX_CONNECTIONS
 ssl_test.c, 891
 DFL_OPMODE
 ssl_test.c, 891
 DFL_SERVER_NAME
 ssl_test.c, 891
 DFL_SERVER_PORT
 ssl_test.c, 891
 DFL_SESSION_LIFETIME
 ssl_test.c, 891
 DFL_SESSION_REUSE
 ssl_test.c, 891
 dh_client.c
 main, 872
 SERVER_NAME, 872
 SERVER_PORT, 872
 dh_genprime.c
 DH_P_SIZE, 873
 GENERATOR, 873
 main, 873
 DH_P_SIZE
 dh_genprime.c, 873
 dh_server.c
 main, 874
 PLAINTEXT, 874
 SERVER_PORT, 874
 dhm.c
 dhm_calc_secret, 776
 dhm_free, 776
 dhm_make_params, 776
 dhm_make_public, 777
 DHM_MPI_EXPORT, 775
 dhm_read_bignum, 777
 dhm_read_params, 777
 dhm_read_public, 778
 dhm_self_test, 778
 dhm.h
 dhm_calc_secret, 628
 dhm_free, 629
 dhm_make_params, 629
 dhm_make_public, 629
 dhm_read_params, 630
 dhm_read_public, 630
 dhm_self_test, 631
 XYSSL_ERR_DHM_BAD_INPUT_DATA,
 628
 XYSSL_ERR_DHM_CALC_SECRET_-
 FAILED, 628
 XYSSL_ERR_DHM_MAKE_PARAMS_-
 FAILED, 628
 XYSSL_ERR_DHM_MAKE_PUBLIC_-
 FAILED, 628
 XYSSL_ERR_DHM_READ_PARAMS_-
 FAILED, 628
 XYSSL_ERR_DHM_READ_PUBLIC_-
 FAILED, 628
 dhm_calc_secret
 dhm.c, 776
 dhm.h, 628
 dhm_context, 77
 G, 77
 GX, 77
 GY, 77
 K, 77
 len, 78
 P, 78
 RP, 78
 X, 78
 dhm_ctx
 _ssl_context, 18
 dhm_free
 dhm.c, 776
 dhm.h, 629
 dhm_G
 ssl_test.c, 893
 dhm_make_params
 dhm.c, 776
 dhm.h, 629
 dhm_make_public
 dhm.c, 777
 dhm.h, 629
 DHM_MPI_EXPORT
 dhm.c, 775
 dhm_P
 ssl_test.c, 894
 dhm_read_bignum
 dhm.c, 777
 dhm_read_params
 dhm.c, 777
 dhm.h, 630
 dhm_read_public
 dhm.c, 778
 dhm.h, 630
 dhm_self_test
 dhm.c, 778
 dhm.h, 631
 do_crypt
 _ssl_context, 18
 DP
 rsa_context, 168
 DQ
 rsa_context, 168
 dynstring.c
 dynstring_Append, 210

dynstring_Destroy, 210
dynstring_New, 210
dynstring.h
 COMPOSE_BLOCKSIZE, 277
 dynstring_Append, 277
 dynstring_Destroy, 278
 dynstring_New, 278
 dynstring_p, 277
 dynstring_t, 277
dynstring_Append
 dynstring.c, 210
 dynstring.h, 277
dynstring_Destroy
 dynstring.c, 210
 dynstring.h, 278
dynstring_New
 dynstring.c, 210
 dynstring.h, 278
dynstring_p
 dynstring.h, 277
dynstring_s, 79
 len, 79
 message, 79
 size, 79
dynstring_t
 dynstring.h, 277

E
 rsa_context, 169

element
 mxml_value_u, 163

enable_security
 agency_s, 43
 MCAgencyOptions_s, 134

encode
 base64::encoder, 80

encode_end
 base64::encoder, 80

ENCODE_UTF16BE
 mxml-file.c, 529

ENCODE_UTF16LE
 mxml-file.c, 529

ENCODE_UTF8
 mxml-file.c, 529

encoder
 base64::encoder, 80

encoding
 fipa_acl_message_s, 85

ENCRYPTED_DATA
 message.h, 393

ENCRYPTION_INITIALIZE
 message.h, 393

end
 _x509_node, 36

 mxml_fdbuf_s, 156

endpoint
 _ssl_context, 18

enum.cxx
 FOO_BLUE, 563
 FOO_ONE, 563
 FOO_RED, 563
 FOO_TWO, 563
 foo_enum_e, 563
 foo_enum_t, 563

ERR
 libmc.h, 326
 mc_error.h, 385

err
 mc_platform_s, 127

ERR_get_error
 openssl.h, 653

error
 fipa_comm_protocol_t, 97
 fipa_comm_t, 100

error_code_e
 libmc.h, 326
 mc_error.h, 385

error_code_t
 libmc.h, 325
 mc_error.h, 385

exec_command
 cmd_prompt.c, 203
 cmd_prompt.h, 262

EXPECTATION_FAILED
 mtp_http.h, 400

EXPONENT
 interface.h, 585
 rsa_genkey.c, 876

EXPORTMC
 libmc.h, 324

expression
 fipa_expression_s::content_u, 71

extract_nonce_from_MA
 interface.c, 580

F
 md5.c, 784
 sha1.c, 808

f
 class.cxx, 562

F0
 sha2.c, 817
 sha4.c, 826

F1
 sha2.c, 817
 sha4.c, 826

f_dbg
 _ssl_context, 18

f_recv
 _ssl_context, 19

f_rng
 _ssl_context, 19
 rsa_context, 169

f_send
 _ssl_context, 19

FAILED_DEPENDANCY
 mtp_http.h, 400

false
 fipa_comm.h, 306

fd
 mxml_fdbuf_s, 156

filename
 agency_s, 43

fin_md5
 _ssl_context, 19

fin_sha1
 _ssl_context, 19

FIPA_ACCEPT_PROPOSAL
 fipa_acl.h, 283, 284
 libmc.h, 326, 327

FIPA_ACL
 message.h, 393

fipa_acl.h
 FIPA_ACCEPT_PROPOSAL, 283, 284
 FIPA_AGREE, 283, 284
 FIPA_CALL_FOR_PROPOSAL, 283, 284
 FIPA_CANCEL, 283, 284
 FIPA_CONFIRM, 283, 284
 FIPA_DISCONFIRM, 283, 284
 FIPA_ERROR, 283, 284
 FIPA_EXPR_DATETIME, 283
 FIPA_EXPR_EXPRESSION, 283
 FIPA_EXPR_NUMBER, 283
 FIPA_EXPR_STRING, 283
 FIPA_EXPR_WORD, 283
 FIPA_EXPR_ZERO, 283
 FIPA_FAILURE, 283, 284
 FIPA_INFORM, 284
 FIPA_INFORM_IF, 284
 FIPA_INFORM_REF, 284
 FIPA_NOT_UNDERSTOOD, 284
 FIPA_PROPAGATE, 284
 FIPA_PROPOSE, 284
 FIPA_PROTOCOL_BROKERING, 285
 FIPA_PROTOCOL_CONTRACT_NET, 285
 FIPA_PROTOCOL_DUTCH_AUCTION, 285
 FIPA_PROTOCOL_END, 285
 FIPA_PROTOCOL_ENGLISH_AUCTION,
 285
 FIPA_PROTOCOL_ERROR, 285
 FIPA_PROTOCOL_ITERATED_-
 CONTRACT_NET, 285

FIPA_PROTOCOL_NONE, 285
FIPA_PROTOCOL_PROPOSE, 285
FIPA_PROTOCOL_QUERY, 285
FIPA_PROTOCOL_RECRUITING, 285
FIPA_PROTOCOL_REQUEST, 285
FIPA_PROTOCOL_REQUEST_WHEN, 285
FIPA_PROTOCOL_SUBSCRIBE, 285
FIPA_PROXY, 284
FIPA_QUERY_IF, 284
FIPA_QUERY_REF, 284
FIPA_REFUSE, 284
FIPA_REJECT_PROPOSAL, 284
FIPA_REQUEST, 284
FIPA_REQUEST_WHEN, 284
FIPA_REQUEST_WHENEVER, 284
FIPA_SUBSCRIBE, 284
FIPA_ZERO, 283, 284

FIPA_AGREE
 fipa_acl.h, 283, 284
 libmc.h, 326, 327

FIPA_CALL_FOR_PROPOSAL
 fipa_acl.h, 283, 284
 libmc.h, 326, 327

FIPA_CANCEL
 fipa_acl.h, 283, 284
 libmc.h, 326, 327

fipa_comm.h
 FIPA_COMM_ACTION, 309
 FIPA_COMM_ACTION_BOTH, 308
 FIPA_COMM_ACTION_CALLBACK, 308
 FIPA_COMM_ACTION_ERROR, 308
 FIPA_COMM_ACTION_NONE, 308
 FIPA_COMM_ACTION_REPLY, 308
 FIPA_COMM_CALLBACK, 309
 FIPA_COMM_CHECK, 309
 FIPA_COMM_CHECK_CONTENT, 308
 FIPA_COMM_CHECK_-
 CONVERSATIONID, 308
 FIPA_COMM_CHECK_ENCODING, 308
 FIPA_COMM_CHECK_ERROR, 308
 FIPA_COMM_CHECK_LANGUAGE, 308
 FIPA_COMM_CHECK_ONTOLOGY, 308
 FIPA_COMM_CHECK_SENDER_-
 ADDRESS, 308
 FIPA_COMM_CHECK_SENDER_NAME,
 308
 FIPA_COMM_END, 309
 FIPA_COMM_LOGIC_AND, 308
 FIPA_COMM_LOGIC_ERROR, 308
 FIPA_COMM_LOGIC_OR, 308
 FIPA_COMM_PROTOCOL_CN_BID, 309
 FIPA_COMM_PROTOCOL_CN_CFP, 309
 FIPA_COMM_PROTOCOL_CN_DONE, 309

FIPA_COMM_PROTOCOL_CN_ERROR,
 309
FIPA_COMM_PROTOCOL_CN_RESULT,
 309
FIPA_COMM_PROTOCOL_CN_START,
 309
 FIPA_COMM_REPLY, 309
FIPA_COMM_ACTION
 fipa_comm.h, 309
FIPA_COMM_ACTION_BOTH
 fipa_comm.h, 308
FIPA_COMM_ACTION_CALLBACK
 fipa_comm.h, 308
FIPA_COMM_ACTION_ERROR
 fipa_comm.h, 308
FIPA_COMM_ACTION_NONE
 fipa_comm.h, 308
FIPA_COMM_ACTION_REPLY
 fipa_comm.h, 308
FIPA_COMM_CALLBACK
 fipa_comm.h, 309
FIPA_COMM_CHECK
 fipa_comm.h, 309
FIPA_COMM_CHECK_CONTENT
 fipa_comm.h, 308
FIPA_COMM_CHECK_CONVERSATIONID
 fipa_comm.h, 308
FIPA_COMM_CHECK_ENCODING
 fipa_comm.h, 308
FIPA_COMM_CHECK_ERROR
 fipa_comm.h, 308
FIPA_COMM_CHECK_LANGUAGE
 fipa_comm.h, 308
FIPA_COMM_CHECK_ONTOLOGY
 fipa_comm.h, 308
FIPA_COMM_CHECK_SENDER_ADDRESS
 fipa_comm.h, 308
FIPA_COMM_CHECK_SENDER_NAME
 fipa_comm.h, 308
FIPA_COMM_END
 fipa_comm.h, 309
FIPA_COMM_LOGIC_AND
 fipa_comm.h, 308
FIPA_COMM_LOGIC_ERROR
 fipa_comm.h, 308
FIPA_COMM_LOGIC_OR
 fipa_comm.h, 308
FIPA_COMM_PROTOCOL_CN_BID
 fipa_comm.h, 309
FIPA_COMM_PROTOCOL_CN_CFP
 fipa_comm.h, 309
FIPA_COMM_PROTOCOL_CN_DONE
 fipa_comm.h, 309
FIPA_COMM_PROTOCOL_CN_ERROR
 fipa_comm.h, 309
FIPA_COMM_PROTOCOL_CN_RESULT
 fipa_comm.h, 309
FIPA_COMM_PROTOCOL_CN_START
 fipa_comm.h, 309
FIPA_COMM_REPLY
 fipa_comm.h, 309
FIPA_CONFIRM
 fipa_acl.h, 283, 284
 libmc.h, 326, 327
FIPA_DISCONFIRM
 fipa_acl.h, 283, 284
 libmc.h, 326, 327
FIPA_ERROR
 fipa_acl.h, 283, 284
 libmc.h, 326, 327
FIPA_EXPR_DATETIME
 fipa_acl.h, 283
FIPA_EXPR_EXPRESSION
 fipa_acl.h, 283
FIPA_EXPR_NUMBER
 fipa_acl.h, 283
FIPA_EXPR_STRING
 fipa_acl.h, 283
FIPA_EXPR_WORD
 fipa_acl.h, 283
FIPA_EXPR_ZERO
 fipa_acl.h, 283
FIPA_FAILURE
 fipa_acl.h, 283, 284
 libmc.h, 327
FIPA_INFORM
 fipa_acl.h, 284
 libmc.h, 327
FIPA_INFORM_IF
 fipa_acl.h, 284
 libmc.h, 327
FIPA_INFORM_REF
 fipa_acl.h, 284
 libmc.h, 327
FIPA_NOT_UNDERSTOOD
 fipa_acl.h, 284
 libmc.h, 327
FIPA_PROPAGATE
 fipa_acl.h, 284
 libmc.h, 327
FIPA_PROPOSE
 fipa_acl.h, 284
 libmc.h, 327
FIPA_PROTOCOL_BROKERING
 fipa_acl.h, 285
FIPA_PROTOCOL_CONTRACT_NET
 fipa_acl.h, 285
FIPA_PROTOCOL_DUTCH_AUCTION

fipa_acl.h, 285
FIPA_PROTOCOL_END
 fipa_acl.h, 285
FIPA_PROTOCOL_ENGLISH_AUCTION
 fipa_acl.h, 285
FIPA_PROTOCOL_ERROR
 fipa_acl.h, 285
FIPA_PROTOCOL_ITERATED_CONTRACT_NET
 fipa_acl.h, 285
FIPA_PROTOCOL_NONE
 fipa_acl.h, 285
FIPA_PROTOCOL_PROPOSE
 fipa_acl.h, 285
FIPA_PROTOCOL_QUERY
 fipa_acl.h, 285
FIPA_PROTOCOL_RECRUITING
 fipa_acl.h, 285
FIPA_PROTOCOL_REQUEST
 fipa_acl.h, 285
FIPA_PROTOCOL_REQUEST_WHEN
 fipa_acl.h, 285
FIPA_PROTOCOL_SUBSCRIBE
 fipa_acl.h, 285
FIPA_PROXY
 fipa_acl.h, 284
 libmc.h, 327
FIPA_QUERY_IF
 fipa_acl.h, 284
 libmc.h, 327
FIPA_QUERY_REF
 fipa_acl.h, 284
 libmc.h, 327
FIPA_REFUSE
 fipa_acl.h, 284
 libmc.h, 327
FIPA_REJECT_PROPOSAL
 fipa_acl.h, 284
 libmc.h, 327
FIPA_REQUEST
 fipa_acl.h, 284
 libmc.h, 327
FIPA_REQUEST_WHEN
 fipa_acl.h, 284
 libmc.h, 327
FIPA_REQUEST_WHENEVER
 fipa_acl.h, 284
 libmc.h, 327
FIPA_SUBSCRIBE
 fipa_acl.h, 284
 libmc.h, 327
FIPA_ZERO
 fipa_acl.h, 283, 284
 libmc.h, 326, 327

fipa_acl.c
 fipa_acl_Compose, 213
 fipa_acl_message_Copy, 213
 fipa_acl_message_Destroy, 213
 fipa_acl_message_New, 213
 fipa_acl_Parse, 213
 fipa_agent_identifier_Compose, 214
 fipa_agent_identifier_Copy, 214
 fipa_agent_identifier_Destroy, 214
 fipa_agent_identifier_New, 214
 fipa_agent_identifier_Parse, 214
 fipa_agent_identifier_set_Compose, 214
 fipa_agent_identifier_set_Copy, 215
 fipa_agent_identifier_set_Destroy, 215
 fipa_agent_identifier_set_New, 215
 fipa_agent_identifier_set_Parse, 215
 fipa_CheckNextToken, 215
 fipa_DateTime_Compose, 215
 fipa_DateTime_Copy, 216
 fipa_DateTime_Destroy, 216
 fipa_DateTime_New, 216
 fipa_datetime_Parse, 216
 fipa_expression_Compose, 216
 fipa_expression_Copy, 216
 fipa_expression_Destroy, 217
 fipa_expression_New, 217
 fipa_expression_Parse, 217
 fipa_GetAtom, 217
 fipa_GetNextWord, 217
 fipa_GetWholeToken, 218
 fipa_message_parameter_Parse, 218
 fipa_message_string_Copy, 218
 fipa_message_string_Destroy, 218
 fipa_message_string_New, 218
 fipa_message_type_Parse, 218
 fipa_number_Compose, 219
 fipa_number_Copy, 219
 fipa_number_Destroy, 219
 fipa_number_New, 219
 fipa_performative_Compose, 219
 fipa_protocol_Compose, 219
 fipa_protocol_type_Parse, 220
 fipa_Reply, 220
 fipa_string_Compose, 220
 fipa_string_Copy, 220
 fipa_string_Destroy, 220
 fipa_string_New, 221
 fipa_string_Parse, 221
 fipa_url_Compose, 221
 fipa_url_Copy, 221
 fipa_url_Destroy, 221
 fipa_url_New, 221
 fipa_url_Parse, 221
 fipa_url_sequence_Compose, 221

fipa_url_sequence_Copy, 222
fipa_url_sequence_Destroy, 222
fipa_url_sequence_New, 222
fipa_url_sequence_Parse, 222
fipa_word_Compose, 222
fipa_word_Copy, 222
fipa_word_Destroy, 223
fipa_word_New, 223
fipa_word_Parse, 223
FREEMEM, 212
fipa_acl.h
 fipa_acl_Compose, 285
 fipa_acl_message_Copy, 285
 fipa_acl_message_Destroy, 285
 fipa_acl_message_New, 286
 fipa_acl_message_p, 282
 fipa_acl_message_t, 282
 fipa_acl_Parse, 286
 fipa_agent_identifier_Compose, 286
 fipa_agent_identifier_Copy, 286
 fipa_agent_identifier_Destroy, 286
 fipa_agent_identifier_New, 286
 fipa_agent_identifier_p, 282
 fipa_agent_identifier_Parse, 287
 fipa_agent_identifier_set_Compose, 287
 fipa_agent_identifier_set_Copy, 287
 fipa_agent_identifier_set_Destroy, 287
 fipa_agent_identifier_set_New, 287
 fipa_agent_identifier_set_p, 282
 fipa_agent_identifier_set_Parse, 287
 fipa_agent_identifier_set_t, 282
 fipa_agent_identifier_t, 282
 fipa_CheckNextToken, 288
 fipa_DateTime_Compose, 288
 fipa_DateTime_Copy, 288
 fipa_DateTime_Destroy, 288
 fipa_DateTime_New, 288
 fipa_DateTime_p, 282
 fipa_datetime_Parse, 288
 fipa_DateTime_t, 282
 fipa_expression_Compose, 289
 fipa_expression_Copy, 289
 fipa_expression_Destroy, 289
 fipa_expression_New, 289
 fipa_expression_p, 282
 fipa_expression_Parse, 289
 fipa_expression_t, 282
 fipa_expression_type_e, 283
 fipa_expression_type_t, 282
 fipa_GetAtom, 290
 fipa_GetNextWord, 290
 fipa_GetWholeToken, 290
 fipa_message_parameter_Parse, 290
 fipa_message_string_Copy, 290
 fipa_message_string_Destroy, 290
 fipa_message_string_New, 290
 fipa_message_string_p, 282
 fipa_message_string_t, 282
 fipa_message_type_Parse, 291
 fipa_number_Compose, 291
 fipa_number_Copy, 291
 fipa_number_Destroy, 291
 fipa_number_New, 291
 fipa_number_p, 282
 fipa_number_t, 282
 fipa_performative_Compose, 291
 fipa_performative_e, 283
 fipa_protocol_Compose, 292
 fipa_protocol_e, 284
 fipa_protocol_type_Parse, 292
 fipa_Reply, 292
 fipa_string_Compose, 292
 fipa_string_Copy, 292
 fipa_string_Destroy, 293
 fipa_string_New, 293
 fipa_string_p, 282
 fipa_string_Parse, 293
 fipa_string_t, 282
 fipa_url_Compose, 293
 fipa_url_Copy, 293
 fipa_url_Destroy, 293
 fipa_url_New, 293
 fipa_url_p, 283
 fipa_url_Parse, 294
 fipa_url_sequence_Compose, 294
 fipa_url_sequence_Copy, 294
 fipa_url_sequence_Destroy, 294
 fipa_url_sequence_New, 294
 fipa_url_sequence_p, 283
 fipa_url_sequence_Parse, 294
 fipa_url_sequence_t, 283
 fipa_url_t, 283
 fipa_word_Compose, 295
 fipa_word_Copy, 295
 fipa_word_Destroy, 295
 fipa_word_New, 295
 fipa_word_p, 283
 fipa_word_Parse, 295
 fipa_word_t, 283
 fipa_acl_Compose
 fipa_acl.c, 213
 fipa_acl.h, 285
 fipa_acl_envelope.h
 fipa_acl_envelope_Copy, 297
 fipa_acl_envelope_Destroy, 297
 fipa_acl_envelope_New, 297
 fipa_acl_envelope_p, 297
 fipa_acl_envelope_Received_Copy, 298

date, 88
from, 88
intended_receiver, 88
payload_encoding, 89
payload_length, 89
received, 89
to, 89

fipa_acl_Param_t
 fipa_acl_envelope.h, 297

fipa_acl_Parse
 fipa_acl.c, 213
 fipa_acl.h, 286

fipa_agent_identifier_Compose
 fipa_acl.c, 214
 fipa_acl.h, 286

fipa_agent_identifier_Copy
 fipa_acl.c, 214
 fipa_acl.h, 286

fipa_agent_identifier_Destroy
 fipa_acl.c, 214
 fipa_acl.h, 286

fipa_agent_identifier_New
 fipa_acl.c, 214
 fipa_acl.h, 286

fipa_agent_identifier_p
 fipa_acl.h, 282

fipa_agent_identifier_Parse
 fipa_acl.c, 214
 fipa_acl.h, 287

fipa_agent_identifier_s, 90
 addresses, 90
 name, 90
 resolvers, 90

fipa_agent_identifier_set_Compose
 fipa_acl.c, 214
 fipa_acl.h, 287

fipa_agent_identifier_set_Copy
 fipa_acl.c, 215
 fipa_acl.h, 287

fipa_agent_identifier_set_Destroy
 fipa_acl.c, 215
 fipa_acl.h, 287

fipa_agent_identifier_set_New
 fipa_acl.c, 215
 fipa_acl.h, 287

fipa_agent_identifier_set_p
 fipa_acl.h, 282

fipa_agent_identifier_set_Parse
 fipa_acl.c, 215
 fipa_acl.h, 287

fipa_agent_identifier_set_s, 91
 fipa_agent_identifiers, 91
 num, 91
 retain_order, 91

fipa_agent_identifier_set_t
 fipa_acl.h, 282

fipa_agent_identifier_t
 fipa_acl.h, 282

fipa_agent_identifiers
 fipa_agent_identifier_set_s, 91

fipa_CheckNextToken
 fipa_acl.c, 215
 fipa_acl.h, 288

fipa_comm.h
 false, 306

fipa_comm_action_p, 306
fipa_comm_action_s, 306
fipa_comm_action_type_e, 308
fipa_comm_callback, 306
fipa_comm_check_type_e, 308
fipa_comm_logic_type_e, 308
fipa_comm_message_check_p, 306
fipa_comm_message_check_s, 306
fipa_comm_p, 306

fipa_comm_performative_p, 306
fipa_comm_performative_s, 306
fipa_comm_protocol_cn_p, 307
fipa_comm_protocol_cn_s, 307
fipa_comm_protocol_cn_state_e, 308
fipa_comm_protocol_info_COPY, 311
fipa_comm_protocol_p, 307

fipa_comm_protocol_s, 307

fipa_comm_reply_p, 307
fipa_comm_reply_s, 307

fipa_comm_s, 307

fipa_comm_type_e, 309

fipa_list_Add, 311
fipa_list_p, 307
fipa_list_s, 307

mc_FIPAComm_AddNewProtocol, 311
mc_FIPAComm_DeregisterPerformative, 311
mc_FIPAComm_Destroy, 311
mc_FIPAComm_FSM_CN, 311
mc_FIPAComm_HandleMessage, 311
mc_FIPAComm_HandleMessageOnce, 311
mc_FIPAComm_HandleMessageWait, 311
mc_FIPAComm_HandleProtocol, 311
mc_FIPAComm_New, 311
mc_FIPAComm_NewProtocol, 311
mc_FIPAComm_RegisterAction, 311
mc_FIPAComm_RegisterActionS, 311
mc_FIPAComm_RegisterPerformative, 311
mc_FIPAComm_RegisterProtocol, 311
mc_FIPAComm_RegisterProtocolCallback, 311
mc_FIPAComm_SetAgent, 311
mc_FIPAComm_SetDefaultReply, 311

mc_FIPAComm_-
 SetPerformativeDefaultReply, 311
 mc_FIPAComm_SetProtocolState, 311
 mc_FIPAComm_StartProtocol, 311
 mc_FIPAProtocol_New, 311
 MC_NUM_PERFORMATIVES, 306
 MCFIPAComm_p, 307
 MCFIPAComm_s, 307
 protocol_contract_net_callback, 308
 fipa_comm_action_p
 fipa_comm.h, 306
 fipa_comm_action_s
 fipa_comm.h, 306
 fipa_comm_action_t, 92
 callback, 92
 check_list, 92
 next, 92
 reply, 92
 type, 92
 fipa_comm_action_type_e
 fipa_comm.h, 308
 fipa_comm_callback
 fipa_comm.h, 306
 fipa_comm_check_type_e
 fipa_comm.h, 308
 fipa_comm_logic_type_e
 fipa_comm.h, 308
 fipa_comm_message_check_p
 fipa_comm.h, 306
 fipa_comm_message_check_s
 fipa_comm.h, 306
 fipa_comm_message_check_t, 93
 macro, 93
 next, 93
 type, 93
 fipa_comm_p
 fipa_comm.h, 306
 fipa_comm_performative_p
 fipa_comm.h, 306
 fipa_comm_performative_s
 fipa_comm.h, 306
 fipa_comm_performative_t, 94
 action_list, 94
 default_reply, 94
 fipa_comm_protocol_cn_p
 fipa_comm.h, 307
 fipa_comm_protocol_cn_s
 fipa_comm.h, 307
 fipa_comm_protocol_cn_state_e
 fipa_comm.h, 308
 fipa_comm_protocol_cn_t, 95
 cfp_request, 95
 contract_func, 95
 proposal_func, 95
 queue, 95
 replies, 95
 require_inform, 95
 time_out, 95
 fipa_comm_protocol_info_COPY
 fipa_comm.h, 311
 fipa_comm_protocol_p
 fipa_comm.h, 307
 fipa_comm_protocol_s
 fipa_comm.h, 307
 fipa_comm_protocol_t, 97
 conversation_id, 97
 error, 97
 info, 97
 network, 97
 next, 97
 state, 97
 type, 97
 fipa_comm_reply_p
 fipa_comm.h, 307
 fipa_comm_reply_s
 fipa_comm.h, 307
 fipa_comm_reply_t, 99
 content, 99
 type, 99
 fipa_comm_s
 fipa_comm.h, 307
 fipa_comm_t, 100
 agent, 100
 agent_address, 100
 agent_name, 100
 debug, 100
 default_reply, 100
 error, 100
 pCallbacks, 100
 performative, 101
 protocol, 101
 fipa_comm_type_e
 fipa_comm.h, 309
 fipa_DateTime_Compose
 fipa_acl.c, 215
 fipa_acl.h, 288
 fipa_DateTime_Copy
 fipa_acl.c, 216
 fipa_acl.h, 288
 fipa_DateTime_Destroy
 fipa_acl.c, 216
 fipa_acl.h, 288
 fipa_DateTime_New
 fipa_acl.c, 216
 fipa_acl.h, 288
 fipa_DateTime_p
 fipa_acl.h, 282
 fipa_datetime_Parse

fipa_acl.c, 216
fipa_acl.h, 288
fipa_DateTime_s, 102
 day, 102
 hour, 102
 is_utc, 102
 millisecond, 102
 minute, 102
 month, 102
 second, 103
 sign, 103
 year, 103
fipa_DateTime_t
 fipa_acl.h, 282
fipa_envelope.c
 fipa_acl_envelope_Copy, 225
 fipa_acl_envelope_Destroy, 225
 fipa_acl_envelope_New, 225
 fipa_acl_envelope_Received_Copy, 225
 fipa_acl_envelope_Received_Destroy, 225
 fipa_acl_envelope_Received_New, 226
 fipa_acl_Param_Copy, 226
 fipa_acl_Param_Destroy, 226
 fipa_acl_Param_New, 226
 fipa_envelope_Compose, 226
 fipa_envelope_Compose__acl_representation,
 226
 fipa_envelope_Compose__date, 227
 fipa_envelope_Compose__envelope, 227
 fipa_envelope_Compose__from, 227
 fipa_envelope_Compose__intended_receiver,
 227
 fipa_envelope_Compose__params, 227
 fipa_envelope_Compose__payload_encoding,
 228
 fipa_envelope_Compose__to, 228
 fipa_envelope_HandleAclRepresentation, 228
 fipa_envelope_HandleComments, 228
 fipa_envelope_HandleDate, 228
 fipa_envelope_HandleEnvelope, 228
 fipa_envelope_HandleFrom, 229
 fipa_envelope_HandleIntendedReceiver, 229
 fipa_envelope_HandleParams, 229
 fipa_envelope_HandlePayloadEncoding, 229
 fipa_envelope_HandlePayloadLength, 229
 fipa_envelope_HandleReceived, 230
 fipa_envelope_HandleTo, 230
 fipa_envelope_Parse, 230
 fipa_envelope_ParseAddresses, 230
 fipa_envelope_ParseAgentIdentifier, 231
 fipa_envelope_ParseResolvers, 231
fipa_envelope_Compose
 fipa_acl_envelope.h, 299
 fipa_envelope.c, 226
fipa_envelope_Compose__acl_representation
 fipa_acl_envelope.h, 299
 fipa_envelope.c, 226
fipa_envelope_Compose__date
 fipa_acl_envelope.h, 299
 fipa_envelope.c, 227
fipa_envelope_Compose__envelope
 fipa_acl_envelope.h, 299
 fipa_envelope.c, 227
fipa_envelope_Compose__from
 fipa_acl_envelope.h, 299
 fipa_envelope.c, 227
fipa_envelope_Compose__intended_receiver
 fipa_acl_envelope.h, 299
 fipa_envelope.c, 227
fipa_envelope_Compose__params
 fipa_acl_envelope.h, 300
 fipa_envelope.c, 227
fipa_envelope_Compose__payload_encoding
 fipa_acl_envelope.h, 300
 fipa_envelope.c, 228
fipa_envelope_Compose__to
 fipa_acl_envelope.h, 300
 fipa_envelope.c, 228
fipa_envelope_HandleAclRepresentation
 fipa_acl_envelope.h, 300
 fipa_envelope.c, 228
fipa_envelope_HandleComments
 fipa_acl_envelope.h, 300
 fipa_envelope.c, 228
fipa_envelope_HandleDate
 fipa_acl_envelope.h, 301
 fipa_envelope.c, 228
fipa_envelope_HandleEnvelope
 fipa_acl_envelope.h, 301
 fipa_envelope.c, 228
fipa_envelope_HandleFrom
 fipa_acl_envelope.h, 301
 fipa_envelope.c, 229
fipa_envelope_HandleIntendedReceiver
 fipa_acl_envelope.h, 301
 fipa_envelope.c, 229
fipa_envelope_HandleParams
 fipa_acl_envelope.h, 301
 fipa_envelope.c, 229
fipa_envelope_HandlePayloadEncoding
 fipa_acl_envelope.h, 302
 fipa_envelope.c, 229
fipa_envelope_HandlePayloadLength
 fipa_acl_envelope.h, 302
 fipa_envelope.c, 229
fipa_envelope_HandleReceived
 fipa_acl_envelope.h, 302
 fipa_envelope.c, 230

fipa_envelope_HandleTo
 fipa_acl_envelope.h, 302
 fipa_envelope.c, 230

fipa_envelope_Parse
 fipa_acl_envelope.h, 303
 fipa_envelope.c, 230

fipa_envelope_ParseAddresses
 fipa_acl_envelope.h, 303
 fipa_envelope.c, 230

fipa_envelope_ParseAgentIdentifier
 fipa_acl_envelope.h, 303
 fipa_envelope.c, 231

fipa_envelope_ParseResolvers
 fipa_acl_envelope.h, 303
 fipa_envelope.c, 231

fipa_expression_Compose
 fipa_acl.c, 216
 fipa_acl.h, 289

fipa_expression_Copy
 fipa_acl.c, 216
 fipa_acl.h, 289

fipa_expression_Destroy
 fipa_acl.c, 217
 fipa_acl.h, 289

fipa_expression_New
 fipa_acl.c, 217
 fipa_acl.h, 289

fipa_expression_p
 fipa_acl.h, 282

fipa_expression_Parse
 fipa_acl.c, 217
 fipa_acl.h, 289

fipa_expression_s, 104
 content, 104
 type, 104

fipa_expression_s::content_u, 71
 datetime, 71
 expression, 71
 number, 71
 string, 71
 word, 71

fipa_expression_t
 fipa_acl.h, 282

fipa_expression_type_e
 fipa_acl.h, 283

fipa_expression_type_t
 fipa_acl.h, 282

fipa_GetAtom
 fipa_acl.c, 217
 fipa_acl.h, 290

fipa_GetNextWord
 fipa_acl.c, 217
 fipa_acl.h, 290

fipa_GetWholeToken

fipa_acl.c, 218
 fipa_acl.h, 290

fipa_list_Add
 fipa_comm.h, 311

fipa_list_p
 fipa_comm.h, 307

fipa_list_s
 fipa_comm.h, 307

fipa_list_t, 105
 data, 105
 next, 105

fipa_message_parameter_Parse
 fipa_acl.c, 218
 fipa_acl.h, 290

fipa_message_string_Copy
 fipa_acl.c, 218
 fipa_acl.h, 290

fipa_message_string_Destroy
 fipa_acl.c, 218
 fipa_acl.h, 290

fipa_message_string_New
 fipa_acl.c, 218
 fipa_acl.h, 290

fipa_message_string_p
 fipa_acl.h, 282

fipa_message_string_s, 106
 message, 106
 parse, 106

fipa_message_string_t
 fipa_acl.h, 282

fipa_message_type_Parse
 fipa_acl.c, 218
 fipa_acl.h, 291

fipa_number_Compose
 fipa_acl.c, 219
 fipa_acl.h, 291

fipa_number_Copy
 fipa_acl.c, 219
 fipa_acl.h, 291

fipa_number_Destroy
 fipa_acl.c, 219
 fipa_acl.h, 291

fipa_number_New
 fipa_acl.c, 219
 fipa_acl.h, 291

fipa_number_p
 fipa_acl.h, 282

fipa_number_s, 107
 str, 107

fipa_number_t
 fipa_acl.h, 282

fipa_performative_Compose
 fipa_acl.c, 219
 fipa_acl.h, 291

fipa_performative_e
 fipa_acl.h, 283
 libmc.h, 326
fipa_protocol_Compose
 fipa_acl.c, 219
 fipa_acl.h, 292
fipa_protocol_e
 fipa_acl.h, 284
fipa_protocol_type_Parse
 fipa_acl.c, 220
 fipa_acl.h, 292
fipa_Reply
 fipa_acl.c, 220
 fipa_acl.h, 292
fipa_string_Compose
 fipa_acl.c, 220
 fipa_acl.h, 292
fipa_string_Copy
 fipa_acl.c, 220
 fipa_acl.h, 292
fipa_string_Destroy
 fipa_acl.c, 220
 fipa_acl.h, 293
fipa_string_New
 fipa_acl.c, 221
 fipa_acl.h, 293
fipa_string_p
 fipa_acl.h, 282
fipa_string_Parse
 fipa_acl.c, 221
 fipa_acl.h, 293
fipa_string_s, 108
 content, 108
fipa_string_t
 fipa_acl.h, 282
fipa_url_Compose
 fipa_acl.c, 221
 fipa_acl.h, 293
fipa_url_Copy
 fipa_acl.c, 221
 fipa_acl.h, 293
fipa_url_Destroy
 fipa_acl.c, 221
 fipa_acl.h, 293
fipa_url_New
 fipa_acl.c, 221
 fipa_acl.h, 293
fipa_url_p
 fipa_acl.h, 283
fipa_url_Parse
 fipa_acl.c, 221
 fipa_acl.h, 294
fipa_url_s, 109
 str, 109
fipa_url_sequence_Combine
 fipa_acl.c, 221
 fipa_acl.h, 294
fipa_url_sequence_Copy
 fipa_acl.c, 222
 fipa_acl.h, 294
fipa_url_sequence_Destroy
 fipa_acl.c, 222
 fipa_acl.h, 294
fipa_url_sequence_New
 fipa_acl.c, 222
 fipa_acl.h, 294
fipa_url_sequence_p
 fipa_acl.h, 283
fipa_url_sequence_Parse
 fipa_acl.c, 222
 fipa_acl.h, 294
fipa_url_sequence_s, 110
 num, 110
 urls, 110
fipa_url_sequence_t
 fipa_acl.h, 283
fipa_url_t
 fipa_acl.h, 283
fipa_word_Compose
 fipa_acl.c, 222
 fipa_acl.h, 295
fipa_word_Copy
 fipa_acl.c, 222
 fipa_acl.h, 295
fipa_word_Destroy
 fipa_acl.c, 223
 fipa_acl.h, 295
fipa_word_New
 fipa_acl.c, 223
 fipa_acl.h, 295
fipa_word_p
 fipa_acl.h, 283
fipa_word_Parse
 fipa_acl.c, 223
 fipa_acl.h, 295
fipa_word_s, 111
 content, 111
fipa_word_t
 fipa_acl.h, 283
foo
 class.hxx, 562
 foo_c, 113
 foo_s, 116
FOO_BLUE
 enum.hxx, 563
FOO_ONE
 enum.hxx, 563
FOO_RED

enum.cxx, 563
FOO_TWO
 enum.cxx, 563
foo_c, 112
 ~foo_c, 112
 bar, 113
 barfoo, 113
 foo, 113
 foo_c, 112
 foo_c, 112
 get_bar, 112
 get_barfoo, 112
 get_foo, 113
 get_global, 113
 global, 114
 set_bar, 113
 set_foo, 113
 set_foobar, 113
foo_default_int
 function.cxx, 564
foo_default_string
 function.cxx, 564
foo_enum_e
 enum.cxx, 563
foo_enum_t
 enum.cxx, 563
foo_float_function
 function.cxx, 564
foo_s, 115
 ~foo_s, 115
 bar, 116
 foo, 116
 foo_s, 115
 foo_s, 115
 get_bar, 115
 get_foo, 115
 set_bar, 115
 set_foo, 116
foo_t
 struct.cxx, 565
foo_void_function
 function.cxx, 564
FORBIDDEN
 mtp_http.h, 399
force_cipher
 options, 165
FREEMEM
 fipa_acl.c, 212
from
 fipa_acl_Param_s, 88
from_address
 message_s, 143
FSb
 aes.c, 730
FT0
 aes.c, 730
FT1
 aes.c, 730
FT2
 aes.c, 730
FT3
 aes.c, 730
function.cxx
 foo_default_int, 564
 foo_default_string, 564
 foo_float_function, 564
 foo_void_function, 564
G
 dhm_context, 77
g_mc_platform
 libmc.c, 487
generate_AES_key
 interface.c, 581
 interface.h, 586
generate_encrypt_send_AES_key
 interface.h, 586
generate_RSA_keys_ciphertext
 interface.c, 581
 interface.h, 586
generate_RSA_keys_plaintext
 interface.c, 581
 interface.h, 586
GENERATOR
 dh_genprime.c, 873
get_bar
 foo_c, 112
 foo_s, 115
get_barfoo
 foo_c, 112
get_foo
 foo_c, 113
 foo_s, 115
get_global
 foo_c, 113
GET_REQUEST
 ssl_client1.c, 879
 ssl_client2.c, 881
GET_THREAD_MODE
 macros.h, 379
get_timer
 timing.c, 854
 timing.h, 706
GET_UINT64_BE
 sha4.c, 826
GET ULONG_BE
 des.c, 764
 sha1.c, 808

sha2.c, 817
GET ULONG LE
 aes.c, 725
 md5.c, 784
giant
 mc_platform_s, 127
giant_cond
 mc_platform_s, 128
giant_lock
 mc_platform_s, 128
global
 foo_c, 114
GONE
 mtp_http.h, 399
GX
 dgm_context, 77
GY
 dgm_context, 77

handler_COMPOSE_SEND
 cmd_prompt.c, 203
handler_FLUSH_AGENTS
 cmd_prompt.c, 203
handler_HELP
 cmd_prompt.c, 203
handler_PRINT_CONNECTLIST
 cmd_prompt.c, 203
handler_PRINTLIST_AGENTS
 cmd_prompt.c, 204
handler_PRINTLIST_MESSAGE
 cmd_prompt.c, 204
handler_QUIT
 cmd_prompt.c, 204
handler_SEND
 cmd_prompt.c, 204
hardclock
 timing.c, 855
 timing.h, 706
hardclock_init
 timing.c, 855
hash_id
 rsa_context, 169
HAVE_STRDUP
 xml-2.2.2/config.h, 521
 xml-2.2.2/winconfig.h, 567
HAVE_VSNPRINTF
 xml-2.2.2/config.h, 521
 xml-2.2.2/winconfig.h, 567
havege.c
 havege_fill, 780
 havege_init, 780
 havege_rand, 780
 ONE_ITERATION, 779
 SWAP, 779
 TST1_ENTER, 779
 TST1_LEAVE, 779
 TST2_ENTER, 779
 TST2_LEAVE, 780
havege.h
 COLLECT_SIZE, 632
 havege_init, 632
 havege_rand, 632
havege_fill
 havege.c, 780
havege_init
 havege.c, 780
 havege.h, 632
havege_rand
 havege.c, 780
 havege.h, 632
havege_state
 offset, 117
 pool, 117
 PT1, 117
 PT2, 117
 WALK, 117
header_length
 mtp_http_s, 151
hello.c
 main, 868
help
 commands.x.h, 267
HERE
 df.h, 271
home
 agent_s, 53
home_port
 agent_s, 53
host
 mtp_http_s, 151
host_id.h
 host_id_Compare, 312
 host_id_Destroy, 312
 host_id_Initialize, 312
 host_id_p, 312
 host_id_t, 312
host_id_Compare
 host_id.h, 312
host_id_Destroy
 host_id.h, 312
host_id_Initialize
 host_id.h, 312
host_id_p
 host_id.h, 312
host_id_s
 hostname, 119
 port, 119
host_id_t

host_id.h, 312
 hostName
 agency_s, 43
 hostname
 _ssl_context, 19
 host_id_s, 119
 mc_platform_s, 128
 hostname_len
 _ssl_context, 19
 hour
 _x509_time, 39
 fipa_DateTime_s, 102
 hr_time, 120
 opaque, 120
 HTTP_CONNECT
 mtp_http.h, 399
 HTTP_DELETE
 mtp_http.h, 399
 HTTP_GET
 mtp_http.h, 398
 HTTP_HEAD
 mtp_http.h, 398
 HTTP_NUM_PERFORMATIVES
 mtp_http.h, 399
 HTTP_OPTIONS
 mtp_http.h, 399
 HTTP_PERFORMATIVE_UNDEF
 mtp_http.h, 398
 HTTP_PERFORMATIVE_ZERO
 mtp_http.h, 398
 HTTP_POST
 mtp_http.h, 398
 HTTP_PUT
 mtp_http.h, 399
 HTTP_RESPONSE
 mtp_http.h, 399
 HTTP_TRACE
 mtp_http.h, 399
 http_GetExpression
 mtp_http.c, 517
 mtp_http.h, 400
 http_GetToken
 mtp_http.c, 517
 mtp_http.h, 400
 HTTP_PARSE_EXPR
 mtp_http.c, 517
 http_ParseExpression
 mtp_http.c, 518
 mtp_http.h, 400
 http_ParseRequest
 mtp_http.c, 518
 mtp_http.h, 401
 http_performative
 mtp_http_s, 151
 http_performative_e
 mtp_http.h, 398
 HTTP_RESPONSE
 ssl_server.c, 883
 http_status_code
 mtp_http_s, 151
 http_status_code_e
 mtp_http.h, 399
 http_to_hostport
 message.c, 511
 message.h, 393
 http_type
 message_s, 144
 http_version
 mtp_http_s, 152
 id
 _ssl_session, 28
 agent_s, 53
 barrier_node_s, 60
 syncListNode_s, 180
 in_ctr
 _ssl_context, 19
 in_hdr
 _ssl_context, 20
 in_hrlen
 _ssl_context, 20
 in_left
 _ssl_context, 20
 in_msg
 _ssl_context, 20
 in_msflen
 _ssl_context, 20
 in_msftype
 _ssl_context, 20
 in_offt
 _ssl_context, 21
 in_reply_to
 fipa_acl_message_s, 85
 index
 command_s, 68
 index_compare
 mxml-index.c, 535
 index_find
 mxml-index.c, 535
 index_sort
 mxml-index.c, 535
 info
 fipa_comm_protocol_t, 97
 init_agent_status
 agent_datastate_s, 46
 agent_task_s, 57
 initialized
 MCAgencyOptions_s, 135

initiate_migration_process
 interface.c, 581
 interface.h, 586

initInterps
 agency_s, 43
 mc_platform_s, 128
 MCAgencyOptions_s, 135

INSERT
 df.h, 271

int64
 sha4.h, 678

integer
 mxml_value_u, 163

intended_receiver
 fipa_acl_Param_s, 88

interface.c
 aes_en_de, 580
 append_nonce_to_MA, 580
 extract_nonce_from_MA, 580
 generate_AES_key, 581
 generate_RSA_keys_ciphertext, 581
 generate_RSA_keys_plaintext, 581
 initiate_migration_process, 581
 read_encrypted_file, 581
 read_known_host_file, 581
 receive_AES_en_MA, 582
 remove_nonce_from_MA, 582
 reply_migration_process, 582
 rsa_decryption, 582
 rsa_encryption, 582
 send_AES_en_MA, 582
 separate_key_parts, 582

interface.h
 aes_en_de, 586
 EXPONENT, 585
 generate_AES_key, 586
 generate_encrypt_send_AES_key, 586
 generate_RSA_keys_ciphertext, 586
 generate_RSA_keys_plaintext, 586
 initiate_migration_process, 586
 KEY_SIZE, 585
 MAXDATASIZE, 585
 MODE_DECRYPT, 585
 MODE_ENCRYPT, 585
 PATH, 585
 read_encrypted_file, 586
 read_known_host_file, 587
 receive_AES_en_MA, 587
 receive_decrypt_AES_key, 587
 receiving_decrypting_MA_RSA, 587
 receiving_verifying_MA_RSA, 587
 reply_migration_process, 587
 RSA_DE, 585
 rsa_decryption, 587

RSA_EN, 585
rsa_encryption, 587
send_AES_en_MA, 587

interp_options
 mc_platform_s, 128

interpreter_queue
 mc_platform_s, 128

interpreter_queue_CreateRetrieve
 mc_platform.c, 501
 mc_platform.h, 388

interpreter_variable_data.h
 interpreter_variable_data_CmpName, 313
 interpreter_variable_data_Copy, 313
 interpreter_variable_data_Destroy, 314
 interpreter_variable_data_Initialize, 314
 interpreter_variable_data_-
 InitializeFromAgent, 314
 interpreter_variable_data_New, 314
 interpreter_variable_data_p, 313
 interpreter_variable_data_t, 313

interpreter_variable_data_CmpName
 agent_return_data.c, 195
 interpreter_variable_data.h, 313

interpreter_variable_data_Copy
 agent_return_data.c, 195
 interpreter_variable_data.h, 313

interpreter_variable_data_Destroy
 agent_return_data.c, 195
 interpreter_variable_data.h, 314

interpreter_variable_data_Initialize
 agent_return_data.c, 195
 interpreter_variable_data.h, 314

interpreter_variable_data_InitializeFromAgent
 agent_return_data.c, 196
 interpreter_variable_data.h, 314

interpreter_variable_data_New
 agent_return_data.c, 196
 interpreter_variable_data.h, 314

interpreter_variable_data_p
 interpreter_variable_data.h, 313

interpreter_variable_data_s, 121
 array_dim, 121
 array_extent, 121
 data, 121
 data_type, 121
 name, 122
 size, 122

interpreter_variable_data_t
 interpreter_variable_data.h, 313

iomode
 options, 166

IOMODE_BLOCK
 ssl_test.c, 891

IOMODE_NONBLOCK

ssl_test.c, 892
 ipad
 md2_context, 137
 md4_context, 139
 md5_context, 141
 sha1_context, 173
 sha2_context, 175
 sha4_context, 177
 is
 commands.x.h, 267
 is224
 sha2_context, 175
 is384
 sha4_context, 177
 is_utc
 fipa_DateTime_s, 102
 isHTTP
 message_s, 144
 issuer
 _x509_cert, 31
 _x509_raw, 37
 issuer_id
 _x509_cert, 31
 issuer_raw
 _x509_cert, 31
 iv_dec
 _ssl_context, 21
 iv_enc
 _ssl_context, 21
 ivlen
 _ssl_context, 21

K
 dhm_context, 77
 sha1.c, 808, 809
 sha4.c, 830
 KEY_LEN
 rsa.c, 798
 KEY_SIZE
 interface.h, 585
 rsa_genkey.c, 876
 keylen
 _ssl_context, 21
 known_host_filename
 agency_s, 43
 MCAgencyOptions_s, 135

language
 fipa_acl_message_s, 86
 last_child
 mxml_node_s, 159
 last_error
 agency_s, 43
 lcppm5

left
 md2_context, 137
 len
 _x509_buf, 30
 _x509_node, 36
 dhm_context, 78
 dynstring_s, 79
 rsa_context, 169
 length
 _ssl_session, 28
 LENGTH_REQUIRED
 mtp_http.h, 399
 LHS
 des.c, 770
 libmc.c
 g_mc_platform, 487
 MC_AclAddReceiver, 434
 MC_AclAddReceiver_chdl, 434
 MC_AclAddReplyTo, 434
 MC_AclAddReplyTo_chdl, 435
 MC_AclDestroy, 435
 MC_AclDestroy_chdl, 435
 MC_AclGetContent, 435
 MC_AclGetContent_chdl, 435
 MC_AclGetConversationID, 435
 MC_AclGetConversationID_chdl, 436
 MC_AclGetPerformative, 436
 MC_AclGetPerformative_chdl, 436
 MC_AclGetProtocol, 436
 MC_AclGetProtocol_chdl, 436
 MC_AclGetSender, 436
 MC_AclGetSender_chdl, 437
 MC_AclNew, 437
 MC_AclNew_chdl, 437
 MC_AclPost, 437
 MC_AclPost_chdl, 437
 MC_AclReply, 438
 MC_AclReply_chdl, 438
 MC_AclRetrieve, 438
 MC_AclRetrieve_chdl, 438
 MC_AclSend, 439
 MC_AclSend_chdl, 439
 MC_AclSetContent, 439
 MC_AclSetContent_chdl, 439
 MC_AclSetConversationID, 440
 MC_AclSetConversationID_chdl, 440
 MC_AclSetPerformative, 440
 MC_AclSetPerformative_chdl, 440
 MC_AclSetProtocol, 440
 MC_AclSetProtocol_chdl, 440
 MC_AclSetSender, 440
 MC_AclSetSender_chdl, 441
 MC_AclWaitRetrieve, 441

MC_AclWaitRetrieve_chdl, 441
MC_AddAgent, 441
MC_AddAgent_chdl, 442
MC_AddAgentInitCallback, 442
MC_AddStationaryAgent, 442
MC_AgentAddTask, 443
MC_AgentAddTask_chdl, 443
MC_AgentAddTaskFromFile, 443
MC_AgentAttachFile, 444
MC_AgentAttachFile_chdl, 444
MC_AgentInfo_GetAgency, 444
MC_AgentInfo_GetAgent, 444
MC_AgentInfo_GetAgentArgs, 445
MC_AgentListFiles, 445
MC_AgentListFiles_chdl, 446
MC_AgentProcessingBegin, 446
MC_AgentProcessingEnd, 446
MC_AgentRetrieveFile, 446
MC_AgentRetrieveFile_chdl, 447
MC_AgentReturnArrayDim, 447
MC_AgentReturnArrayExtent, 447
MC_AgentReturnArrayNum, 447
MC_AgentReturnDataGetSymbolAddr, 448
MC_AgentReturnDataSize, 448
MC_AgentReturnDataType, 448
MC_AgentReturnIsArray, 449
MC_AgentVariableRetrieve, 449
MC_AgentVariableRetrieve_chdl, 450
MC_AgentVariableRetrieveInfo, 450
MC_AgentVariableSave, 450
MC_AgentVariableSave_chdl, 451
MC_Barrier, 451
MC_Barrier_chdl, 451
MC_BarrierDelete, 451
MC_BarrierDelete_chdl, 452
MC_BarrierInit, 452
MC_BarrierInit_chdl, 452
MC_CallAgentFunc, 453
MC_CallAgentFunc_chdl, 453
MC_CallAgentFuncArg, 453
MC_CallAgentFuncV, 454
MC_CallAgentFuncVar, 454
MC_ComposeAgent, 454
MC_ComposeAgent_chdl, 455
MC_ComposeAgentFromFile, 455
MC_ComposeAgentFromFile_chdl, 456
MC_ComposeAgentFromFileS, 456
MC_ComposeAgentFromFileWithWorkgroup,
 456
MC_ComposeAgentFromFileWithWorkgroup_-
 chdl, 457
MC_ComposeAgentS, 457
MC_ComposeAgentWithWorkgroup, 458
MC_ComposeAgentWithWorkgroup_chdl,
 459
MC_CondBroadcast, 459
MC_CondBroadcast_chdl, 459
MC_CondReset, 459
MC_CondReset_chdl, 460
MC_CondSignal, 460
MC_CondSignal_chdl, 460
MC_CondWait, 461
MC_CondWait_chdl, 461
MC_CopyAgent, 461
MC_DeleteAgent, 462
MC_DeleteAgent_chdl, 462
MC_DeleteAgentWG, 462
MC_DeleteAgentWG_chdl, 463
MC_DeregisterService, 463
MC_DeregisterService_chdl, 463
MC_DestroyServiceSearchResult, 463
MC_DestroyServiceSearchResult_chdl, 463
MC_End, 464
MC_End_chdl, 464
MC_FindAgentByID, 464
MC_FindAgentByID_chdl, 465
MC_FindAgentByName, 465
MC_FindAgentByName_chdl, 465
MC_GetAgentArrivalTime, 465
MC_GetAgentArrivalTime_chdl, 465
MC_GetAgentExecEngine, 466
MC_GetAgentID, 466
MC_GetAgentID_chdl, 466
MC_GetAgentName, 466
MC_GetAgentName_chdl, 466
MC_GetAgentNumTasks, 466
MC_GetAgentNumTasks_chdl, 467
MC_GetAgentReturnData, 467
MC_GetAgents, 467
MC_GetAgentStatus, 468
MC_GetAgentStatus_chdl, 468
MC_GetAgentType, 468
MC_GetAgentXMLString, 468
MC_GetAgentXMLString_chdl, 469
MC_GetAllAgents, 469
MC_GetNumAgents, 469
MC_GetTimeOfDay_chdl, 469
MC_HaltAgency, 470
MC_HaltAgency_chdl, 470
MC_Initialize, 470
MC_InitializeAgencyOptions, 471
MC_LoadAgentFromFile, 471
MC_MainLoop, 471
MC_MigrateAgent, 472
MC_MigrateAgent_chdl, 472
MC_MutexLock, 472
MC_MutexLock_chdl, 473

MC_MutexUnlock, 473
 MC_MutexUnlock_chdl, 473
 MC_PrintAgentCode, 473
 MC_PrintAgentCode_chdl, 473
 MC_QueueRDLock, 474
 MC_QueueRDUnlock, 474
 MC_QueueWRLock, 474
 MC_QueueWRUnlock, 474
 MC_RegisterService, 474
 MC_RegisterService_chdl, 475
 MC_ResetSignal, 475
 MC_ResumeAgency, 475
 MC_ResumeAgency_chdl, 476
 MC_RetrieveAgent, 476
 MC_RetrieveAgent_chdl, 476
 MC_RetrieveAgentCode, 476
 MC_RetrieveAgentCode_chdl, 477
 MC_SaveData_chdl, 477
 MC_SearchForService, 477
 MC_SearchForService_chdl, 477
 MC_SemaphorePost, 478
 MC_SemaphorePost_chdl, 478
 MC_SemaphoreWait, 478
 MC_SemaphoreWait_chdl, 479
 MC_SendAgent, 479
 MC_SendAgentFile, 479
 MC_SendAgentMigrationMessage, 479
 MC_SendAgentMigrationMessage_chdl, 480
 MC_SendAgentMigrationMessageFile, 480
 MC_SendAgentMigrationMessageFile_chdl,
 480
 MC_SendCh, 480
 MC_SendSteerCommand, 481
 MC_SendSteerCommand_chdl, 481
 MC_SetAgentStatus, 481
 MC_SetAgentStatus_chdl, 481
 MC_SetDefaultAgentStatus, 481
 MC_SetDefaultAgentStatus_chdl, 482
 MC_SetThreadOff, 482
 MC_SetThreadOn, 482
 MC_SetThreadsAllOff, 483
 MC_SetThreadsAllOn, 483
 MC_Steer, 483
 MC_SteerControl, 484
 MC_SyncDelete, 484
 MC_SyncDelete_chdl, 485
 MC_SyncInit, 485
 MC_SyncInit_chdl, 485
 MC_TerminateAgent, 485
 MC_TerminateAgent_chdl, 486
 MC_TerminateAgentWG, 486
 MC_TerminateAgentWG_chdl, 486
 MC_WaitAgent, 486
 MC_WaitRetrieveAgent, 486
 MC_WaitSignal, 487
 libmc.h
 _ERROR_CODE_E_, 324
 _FIPA_PERFORMATIVE_E_, 324
 agency_p, 325
 agency_t, 325
 agent_p, 325
 AGENT_T, 324
 agent_t, 325
 ERR, 326
 error_code_e, 326
 error_code_t, 325
 EXPORTMC, 324
 FIPA_ACCEPT_PROPOSAL, 326, 327
 FIPA_AGREE, 326, 327
 FIPA_CALL_FOR_PROPOSAL, 326, 327
 FIPA_CANCEL, 326, 327
 FIPA_CONFIRM, 326, 327
 FIPA_DISCONFIRM, 326, 327
 FIPA_ERROR, 326, 327
 FIPA_FAILURE, 327
 FIPA_INFORM, 327
 FIPA_INFORM_IF, 327
 FIPA_INFORM_REF, 327
 FIPA_NOT_UNDERSTOOD, 327
 FIPA_PROPAGATE, 327
 FIPA_PROPOSE, 327
 FIPA_PROXY, 327
 FIPA_QUERY_IF, 327
 FIPA_QUERY_REF, 327
 FIPA_REFUSE, 327
 FIPA_REJECT_PROPOSAL, 327
 FIPA_REQUEST, 327
 FIPA_REQUEST_WHEN, 327
 FIPA_REQUEST_WHENEVER, 327
 FIPA_SUBSCRIBE, 327
 FIPA_ZERO, 326, 327
 fipa_performative_e, 326
 MC_AGENT_ACTIVE, 328
 MC_AGENT_NEUTRAL, 328
 MC_AGENT_SUSPENDED, 328
 MC_ALL_SIGNALS, 329
 MC_ERR, 326
 MC_ERR_CONNECT, 326
 MC_ERR_EMPTY, 326
 MC_ERR_INVALID, 326
 MC_ERR_INVALID_ARGS, 326
 MC_ERR_MEMORY, 326
 MC_ERR_NOT_FOUND, 326
 MC_ERR_OPTIONS_UNINITIALIZED, 326
 MC_ERR_PARSE, 326
 MC_ERR_SEND, 326
 MC_EXEC_AGENT, 329
 MC_LOCAL_AGENT, 328

MC_NO_SIGNAL, 329
MC_NO_STATUS, 328
MC_NONE, 328
MC_QUEUE_AGENT, 328
MC_QUEUE_BARRIER, 328
MC_QUEUE_CONNECTION, 328
MC_QUEUE_MESSAGE, 328
MC_QUEUE_NUM, 328
MC_QUEUE_SYNC, 328
MC_RECV_AGENT, 329
MC_RECV_CONNECTION, 329
MC_RECV_MESSAGE, 329
MC_RECV_RETURN, 329
MC_REMOTE_AGENT, 328
MC_RESTART, 329
MC_RETURN_AGENT, 328
MC_RUN, 329
MC_STOP, 329
MC_SUCCESS, 326
MC_SUSPEND, 329
MC_THREAD_ACC, 329
MC_THREAD_AGENT, 329
MC_THREAD_ALL, 329
MC_THREAD_AMS, 329
MC_THREAD_CP, 329
MC_THREAD_DF, 329
MC_WAIT_CH, 328
MC_WAIT_FINISHED, 328
MC_WAIT_MESSGSEND, 328
MC_WARN_DUPLICATE, 326
MC_AclAddReceiver, 330
MC_AclAddReplyTo, 330
MC_AclDestroy, 330
MC_AclGetContent, 330
MC_AclGetConversationID, 330
MC_AclGetPerformative, 331
MC_AclGetProtocol, 331
MC_AclGetSender, 331
MC_AclNew, 331
MC_AclPost, 331
MC_AclReply, 332
MC_AclRetrieve, 332
MC_AclSend, 332
MC_AclSetContent, 333
MC_AclSetConversationID, 333
MC_AclSetPerformative, 333
MC_AclSetProtocol, 333
MC_AclSetSender, 334
MC_AclWaitRetrieve, 334
MC_AddAgent, 334
MC_AddAgentInitCallback, 334
MC_AddStationaryAgent, 335
MC_AgentAddTask, 335
MC_AgentAddTaskFromFile, 336
MC_AgentAttachFile, 336
MC_AgentInfo_GetAgency, 337
MC_AgentInfo_GetAgent, 337
MC_AgentInfo_GetAgentArgs, 337
MC_AgentInitCallbackFunc_t, 325
MC_AgentListFiles, 338
MC_AgentProcessingBegin, 338
MC_AgentProcessingEnd, 338
MC_AgentRetrieveFile, 338
MC_AgentReturnArrayDim, 339
MC_AgentReturnArrayExtent, 339
MC_AgentReturnArrayNum, 340
MC_AgentReturnDataGetSymbolAddr, 340
MC_AgentReturnDataSize, 340
MC_AgentReturnDataType, 341
MC_AgentReturnIsArray, 341
MC_AgentStatus_e, 327
MC_AgentType_e, 328
MC_AgentVariableRetrieve, 341
MC_AgentVariableRetrieveInfo, 342
MC_AgentVariableSave, 342
MC_Barrier, 343
MC_BarrierDelete, 343
MC_BarrierInit, 343
MC_CallAgentFunc, 344
MC_CallAgentFuncArg, 344
MC_CallAgentFuncV, 345
MC_CallAgentFuncVar, 345
MC_ComposeAgent, 345
MC_ComposeAgentFromFile, 346
MC_ComposeAgentFromFileS, 346
MC_ComposeAgentFromFileWithWorkgroup, 347
MC_ComposeAgentS, 348
MC_ComposeAgentWithWorkgroup, 348
MC_CondBroadcast, 349
MC_CondReset, 350
MC_CondSignal, 350
MC_CondWait, 351
MC_CopyAgent, 351
MC_DeleteAgent, 352
MC_DeleteAgentWG, 352
MC_DestroyServiceSearchResult, 352
MC_End, 353
MC_FindAgentByID, 353
MC_FindAgentByName, 354
MC_GetAgentExecEngine, 354
MC_GetAgentID, 354
MC_GetAgentName, 355
MC_GetAgentNumTasks, 355
MC_GetAgentReturnData, 355
MC_GetAgents, 356
MC_GetAgentStatus, 356
MC_GetAgentType, 356

MC_GetAgentXMLString, 356
 MC_GetAllAgents, 357
 MC_GetNumAgents, 357
 MC_HaltAgency, 357
 MC_Initialize, 358
 MC_InitializeAgencyOptions, 358
 MC_INITIALIZED_CODE, 324
 MC_LoadAgentFromFile, 359
 MC_MainLoop, 359
 MC_MigrateAgent, 359
 MC_MutexLock, 360
 MC_MutexUnlock, 360
 MC_PrintAgentCode, 360
 MC_QueueIndex_e, 328
 MC_QueueRDLock, 361
 MC_QueueRDUnlock, 361
 MC_QueueWRLock, 361
 MC_QueueWRUnlock, 361
 MC_RegisterService, 361
 MC_ResetSignal, 362
 MC_ResumeAgency, 362
 MC_RetrieveAgent, 363
 MC_RetrieveAgentCode, 363
 MC_SearchForService, 363
 MC_SemaphorePost, 364
 MC_SemaphoreWait, 364
 MC_SendAgent, 365
 MC_SendAgentFile, 365
 MC_SendAgentMigrationMessage, 365
 MC_SendAgentMigrationMessageFile, 366
 MC_SetAgentStatus, 366
 MC_SetDefaultAgentStatus, 367
 MC_SetThreadOff, 367
 MC_SetThreadOn, 367
 MC_SetThreadsAllOff, 368
 MC_SetThreadsAllOn, 368
 MC_Signal_e, 328
 MC_Steer, 368
 MC_SteerCommand_e, 329
 MC_SteerCommand_t, 325
 MC_SteerControl, 369
 MC_SyncDelete, 369
 MC_SyncInit, 370
 MC_TerminateAgent, 370
 MC_TerminateAgentWG, 370
 MC_ThreadIndex_e, 329
 MC_Wait, 324
 MC_WaitAgent, 371
 MC_WaitRetrieveAgent, 371
 MC_WaitSignal, 371
 MCAgency_t, 325
 MCAgencyOptions_t, 325
 MCAgent_t, 325
 stationary_agent_info_t, 325

list
 barrier_queue_s, 62
 list.c
 ListAdd, 488
 ListAppend, 488
 ListClearCB, 489
 ListCopy, 489
 ListDelete, 489
 ListDeleteCB, 489
 ListForEachCB, 489
 ListGetHead, 489
 ListGetSize, 489
 ListInitialize, 490
 ListInsert, 490
 ListPop, 490
 ListRDLock, 490
 ListRDtoWR, 490
 ListRDUnlock, 490
 ListRDWait, 491
 ListSearch, 491
 ListSearchCB, 491
 ListTerminate, 491
 ListWait, 491
 ListWRLock, 492
 ListWRtoRD, 492
 ListWRUnlock, 492
 ListWRWait, 492

list.h
 list_p, 495
 list_t, 495
 ListAdd, 495
 ListAppend, 495
 ListClearCB, 496
 ListCopy, 496
 ListDelete, 496
 ListDeleteCB, 496
 ListElemCopyFunc_t, 495
 ListElemDestroyFunc_t, 495
 ListElemGenericFunc_t, 495
 ListForEachCB, 496
 ListGetHead, 496
 ListGetSize, 496
 ListInitialize, 497
 ListInsert, 497
 listNode_p, 495
 listNode_t, 495
 ListPop, 497
 ListRDLock, 497
 ListRDtoWR, 497
 ListRDUnlock, 497
 ListRDWait, 498
 ListSearch, 498
 ListSearchCB, 498
 ListSearchFunc_t, 495

ListTerminate, 498
ListWait, 498
ListWRLock, 499
ListWRtoRD, 499
ListWRUnlock, 499
ListWRWait, 499

list_p
 list.h, 495
list_s, 123
 listhead, 123
 rwlock, 123
 size, 123

list_t
 list.h, 495
ListAdd
 list.c, 488
 list.h, 495
ListAppend
 list.c, 488
 list.h, 495
ListClearCB
 list.c, 489
 list.h, 496
ListCopy
 list.c, 489
 list.h, 496
ListDelete
 list.c, 489
 list.h, 496
ListDeleteCB
 list.c, 489
 list.h, 496
ListElemCopyFunc_t
 list.h, 495
ListElemDestroyFunc_t
 list.h, 495
ListElemGenericFunc_t
 list.h, 495
listen_Thread
 acc.c, 187
 acc.h, 233
listen_thread_arg
 mc_platform_s, 128
ListForEachCB
 list.c, 489
 list.h, 496
ListGetHead
 list.c, 489
 list.h, 496
ListGetSize
 list.c, 489
 list.h, 496
listhead
 list_s, 123

ListInitialize
 list.c, 490
 list.h, 497
ListInsert
 list.c, 490
 list.h, 497
listNode_p
 list.h, 495
listNode_s, 124
 next, 124
 node_data, 124
listNode_t
 list.h, 495
ListPop
 list.c, 490
 list.h, 497
ListRDLock
 list.c, 490
 list.h, 497
ListRDtoWR
 list.c, 490
 list.h, 497
ListRDUnclock
 list.c, 490
 list.h, 497
ListRDWait
 list.c, 491
 list.h, 498
ListSearch
 list.c, 491
 list.h, 498
ListSearchCB
 list.c, 491
 list.h, 498
ListSearchFunc_t
 list.h, 495
ListTerminate
 list.c, 491
 list.h, 498
ListWait
 list.c, 491
 list.h, 498
ListWRLock
 list.c, 492
 list.h, 499
ListWRtoRD
 list.c, 492
 list.h, 499
ListWRUnlock
 list.c, 492
 list.h, 499
ListWRWait
 list.c, 492
 list.h, 499

lock
 agent_s, 53
 barrier_node_s, 60
 barrier_queue_s, 62
 df.h, 274
 mc_rwlock_s, 132
 rwlock_s, 172
 syncListNode_s, 180

LOCKED
 mtp_http.h, 400

m
 arc4_context, 59

m_sleep
 timing.c, 855
 timing.h, 707

mac_dec
 _ssl_context, 21

mac_enc
 _ssl_context, 22

maclen
 _ssl_context, 22

macro
 fipa_comm_message_check_t, 93

macros.h
 CH_DATATYPE_SIZE, 374
 CH_DATATYPE_STR_TO_VAL, 374
 CH_DATATYPE_STRING, 375
 CH_DATATYPE_VALUE_STRING, 375
 CH_STRING_DATATYPE, 376
 CHECK_NULL, 376
 COND_BROADCAST, 377
 COND_DESTROY, 377
 COND_INIT, 377
 COND_NEW, 378
 COND_RESET, 378
 COND_SIGNAL, 378
 COND_SLEEP, 378
 COND_SLEEP_ACTION, 378
 COND_T, 378
 COND_WAIT, 379
 GET_THREAD_MODE, 379
 MUTEX_DESTROY, 379
 MUTEX_INIT, 379
 MUTEX_LOCK, 379
 MUTEX_NEW, 380
 MUTEX_T, 380
 MUTEX_UNLOCK, 380
 PTHREAD_STACK_SIZE, 380
 RWLOCK_DESTROY, 380
 RWLOCK_INIT, 381
 RWLOCK_RDLOCK, 381
 RWLOCK_RDUNLOCK, 381
 RWLOCK_T, 381

RWLOCK_WRLOCK, 381
 RWLOCK_WRUNLOCK, 381
 SEMAPHORE_DESTROY, 381
 SEMAPHORE_INIT, 381
 SEMAPHORE_POST, 381
 SEMAPHORE_T, 381
 SEMAPHORE_WAIT, 382
 SET_THREAD_OFF, 382
 SET_THREAD_ON, 382
 SIGNAL, 382
 SLEEP_QUEUE, 382
 SLEEP_RESET, 382
 SOCKET_ERROR, 382
 STRUCT, 383
 THREAD_CANCEL, 383
 THREAD_CREATE, 383
 THREAD_DETACH, 383
 THREAD_EXIT, 383
 THREAD_JOIN, 384
 WAKE_QUEUE, 384
 WARN, 384

mailbox
 agent_s, 53

main
 aescrypt2.c, 867
 base64.cc, 415
 benchmark.c, 886
 dh_client.c, 872
 dh_genprime.c, 873
 dh_server.c, 874
 hello.c, 868
 mc_genkey.c, 895
 md5sum.c, 869
 mpi_demo.c, 875
 mxmldoc.c, 559
 rsa_genkey.c, 876
 rsa_sign.c, 877
 rsa_verify.c, 878
 selftest.c, 888
 sha1sum.c, 870
 sha2sum.c, 871
 ssl_client1.c, 880
 ssl_client2.c, 882
 ssl_server.c, 884
 ssl_test.c, 893
 testxml.c, 566

major_ver
 _ssl_context, 22

master
 _ssl_session, 28

max_bytes
 options, 166

max_connections
 options, 166

max_major_ver
 _ssl_context, 22
max_minor_ver
 _ssl_context, 22
max_pathlen
 _x509_cert, 32
MAXDATASIZE
 interface.h, 585
MC_AGENT_ACTIVE
 libmc.h, 328
MC_AGENT_NEUTRAL
 libmc.h, 328
MC_AGENT_SUSPENDED
 libmc.h, 328
MC_ALL_SIGNALS
 libmc.h, 329
MC_ERR
 libmc.h, 326
 mc_error.h, 385
MC_ERR_CONNECT
 libmc.h, 326
 mc_error.h, 385
MC_ERR_EMPTY
 libmc.h, 326
 mc_error.h, 385
MC_ERR_INVALID
 libmc.h, 326
 mc_error.h, 385
MC_ERR_INVALID_ARGS
 libmc.h, 326
 mc_error.h, 385, 386
MC_ERR_MEMORY
 libmc.h, 326
 mc_error.h, 385, 386
MC_ERR_NOT_FOUND
 libmc.h, 326
 mc_error.h, 385, 386
MC_ERR_OPTIONS_UNINITIALIZED
 libmc.h, 326
 mc_error.h, 386
MC_ERR_PARSE
 libmc.h, 326
 mc_error.h, 385
MC_ERR_SEND
 libmc.h, 326
 mc_error.h, 385, 386
mc_error.h
 ERR, 385
 MC_ERR, 385
 MC_ERR_CONNECT, 385
 MC_ERR_EMPTY, 385
 MC_ERR_INVALID, 385
 MC_ERR_INVALID_ARGS, 385, 386
 MC_ERR_MEMORY, 385, 386
MC_ERR_NOT_FOUND, 385, 386
MC_ERR_OPTIONS_UNINITIALIZED, 386
MC_ERR_PARSE, 385
MC_ERR_SEND, 385, 386
MC_SUCCESS, 385
MC_WARN_DUPLICATE, 385, 386
MC_EXEC_AGENT
 libmc.h, 329
MC_LOCAL_AGENT
 libmc.h, 328
MC_NO_SIGNAL
 libmc.h, 329
MC_NO_STATUS
 libmc.h, 328
MC_NONE
 libmc.h, 328
MC_QUEUE_AGENT
 libmc.h, 328
MC_QUEUE_BARRIER
 libmc.h, 328
MC_QUEUE_CONNECTION
 libmc.h, 328
MC_QUEUE_MESSAGE
 libmc.h, 328
MC_QUEUE_NUM
 libmc.h, 328
MC_QUEUE_SYNC
 libmc.h, 328
MC_RECV_AGENT
 libmc.h, 329
MC_RECV_CONNECTION
 libmc.h, 329
MC_RECV_MESSAGE
 libmc.h, 329
MC_RECV_RETURN
 libmc.h, 329
MC_REMOTE_AGENT
 libmc.h, 328
MC_RESTART
 libmc.h, 329
MC_RETURN_AGENT
 libmc.h, 328
MC_RUN
 libmc.h, 329
MC_STOP
 libmc.h, 329
MC_SUCCESS
 libmc.h, 326
 mc_error.h, 385
MC_SUSPEND
 libmc.h, 329
MC_THREAD_ACC
 libmc.h, 329
MC_THREAD_AGENT

libmc.h, 329
MC_THREAD_ALL
 libmc.h, 329
MC_THREAD_AMS
 libmc.h, 329
MC_THREAD_CP
 libmc.h, 329
MC_THREAD_DF
 libmc.h, 329
MC_WAIT_CH
 libmc.h, 328
MC_WAIT_FINISHED
 libmc.h, 328
MC_WAIT_MESSAGESEND
 libmc.h, 328
MC_WARN_DUPLICATE
 libmc.h, 326
 mc_error.h, 385, 386
MC_AclAddReceiver
 libmc.c, 434
 libmc.h, 330
MC_AclAddReceiver_chdl
 agent_lib.h, 244
 libmc.c, 434
MC_AclAddReplyTo
 libmc.c, 434
 libmc.h, 330
MC_AclAddReplyTo_chdl
 agent_lib.h, 244
 libmc.c, 435
MC_AclDestroy
 libmc.c, 435
 libmc.h, 330
MC_AclDestroy_chdl
 agent_lib.h, 244
 libmc.c, 435
MC_AclGetContent
 libmc.c, 435
 libmc.h, 330
MC_AclGetContent_chdl
 agent_lib.h, 244
 libmc.c, 435
MC_AclGetConversationID
 libmc.c, 435
 libmc.h, 330
MC_AclGetConversationID_chdl
 agent_lib.h, 245
 libmc.c, 436
MC_AclGetPerformative
 libmc.c, 436
 libmc.h, 331
MC_AclGetPerformative_chdl
 agent_lib.h, 245
 libmc.c, 436
MC_AclGetProtocol
 libmc.c, 436
 libmc.h, 331
MC_AclGetProtocol_chdl
 agent_lib.h, 245
 libmc.c, 436
MC_AclGetSender
 libmc.c, 436
 libmc.h, 331
MC_AclGetSender_chdl
 agent_lib.h, 245
 libmc.c, 437
MC_AclNew
 libmc.c, 437
 libmc.h, 331
MC_AclNew_chdl
 agent_lib.h, 245
 libmc.c, 437
MC_AclPost
 libmc.c, 437
 libmc.h, 331
MC_AclPost_chdl
 agent_lib.h, 245
 libmc.c, 437
MC_AclReply
 libmc.c, 438
 libmc.h, 332
MC_AclReply_chdl
 agent_lib.h, 245
 libmc.c, 438
MC_AclRetrieve
 libmc.c, 438
 libmc.h, 332
MC_AclRetrieve_chdl
 agent_lib.h, 246
 libmc.c, 438
MC_AclSend
 libmc.c, 439
 libmc.h, 332
MC_AclSend_chdl
 agent_lib.h, 246
 libmc.c, 439
MC_AclSetContent
 libmc.c, 439
 libmc.h, 333
MC_AclSetContent_chdl
 agent_lib.h, 246
 libmc.c, 439
MC_AclSetConversationID
 libmc.c, 440
 libmc.h, 333
MC_AclSetConversationID_chdl
 agent_lib.h, 246
 libmc.c, 440

MC_AclSetPerformative
 libmc.c, 440
 libmc.h, 333
MC_AclSetPerformative_chdl
 agent_lib.h, 246
 libmc.c, 440
MC_AclSetProtocol
 libmc.c, 440
 libmc.h, 333
MC_AclSetProtocol_chdl
 agent_lib.h, 246
 libmc.c, 440
MC_AclSetSender
 libmc.c, 440
 libmc.h, 334
MC_AclSetSender_chdl
 agent_lib.h, 246
 libmc.c, 441
MC_AclWaitRetrieve
 libmc.c, 441
 libmc.h, 334
MC_AclWaitRetrieve_chdl
 agent_lib.h, 247
 libmc.c, 441
MC_AddAgent
 libmc.c, 441
 libmc.h, 334
MC_AddAgent_chdl
 agent_lib.h, 247
 libmc.c, 442
MC_AddAgentInitCallback
 libmc.c, 442
 libmc.h, 334
MC_AddStationaryAgent
 libmc.c, 442
 libmc.h, 335
MC_AgentAddTask
 libmc.c, 443
 libmc.h, 335
MC_AgentAddTask_chdl
 agent_lib.h, 247
 libmc.c, 443
MC_AgentAddTaskFromFile
 libmc.c, 443
 libmc.h, 336
MC_AgentAttachFile
 libmc.c, 444
 libmc.h, 336
MC_AgentAttachFile_chdl
 agent_lib.h, 247
 libmc.c, 444
MC_AgentInfo_GetAgency
 libmc.c, 444
 libmc.h, 337
MC_AgentInfo_GetAgent
 libmc.c, 444
 libmc.h, 337
MC_AgentInfo_GetAgentArgs
 libmc.c, 445
 libmc.h, 337
MC_AgentInitCallbackFunc_t
 libmc.h, 325
MC_AgentListFiles
 libmc.c, 445
 libmc.h, 338
MC_AgentListFiles_chdl
 agent_lib.h, 247
 libmc.c, 446
MC_AgentProcessingBegin
 libmc.c, 446
 libmc.h, 338
MC_AgentProcessingEnd
 libmc.c, 446
 libmc.h, 338
MC_AgentRetrieveFile
 libmc.c, 446
 libmc.h, 338
MC_AgentRetrieveFile_chdl
 agent_lib.h, 247
 libmc.c, 447
MC_AgentReturnArrayDim
 libmc.c, 447
 libmc.h, 339
MC_AgentReturnArrayExtent
 libmc.c, 447
 libmc.h, 339
MC_AgentReturnArrayNum
 libmc.c, 447
 libmc.h, 340
MC_AgentReturnDataGetSymbolAddr
 libmc.c, 448
 libmc.h, 340
MC_AgentReturnDataSize
 libmc.c, 448
 libmc.h, 340
MC_AgentReturnDataType
 libmc.c, 448
 libmc.h, 341
MC_AgentReturnIsArray
 libmc.c, 449
 libmc.h, 341
MC_AgentStatus_e
 libmc.h, 327
MC_AgentType_e
 libmc.h, 328
MC_AgentVariableRetrieve
 libmc.c, 449
 libmc.h, 341

MC_AgentVariableRetrieve_chdl
 agent_lib.h, 247
 libmc.c, 450

MC_AgentVariableRetrieveInfo
 libmc.c, 450
 libmc.h, 342

MC_AgentVariableSave
 libmc.c, 450
 libmc.h, 342

MC_AgentVariableSave_chdl
 agent_lib.h, 248
 libmc.c, 451

MC_Barrier
 libmc.c, 451
 libmc.h, 343

MC_Barrier_chdl
 agent_lib.h, 248
 libmc.c, 451

MC_BarrierDelete
 libmc.c, 451
 libmc.h, 343

MC_BarrierDelete_chdl
 agent_lib.h, 248
 libmc.c, 452

MC_BarrierInit
 libmc.c, 452
 libmc.h, 343

MC_BarrierInit_chdl
 agent_lib.h, 248
 libmc.c, 452

MC_CallAgentFunc
 libmc.c, 453
 libmc.h, 344

MC_CallAgentFunc_chdl
 agent_lib.h, 248
 libmc.c, 453

MC_CallAgentFuncArg
 libmc.c, 453
 libmc.h, 344

MC_CallAgentFuncV
 libmc.c, 454
 libmc.h, 345

MC_CallAgentFuncVar
 libmc.c, 454
 libmc.h, 345

MC_ComposeAgent
 libmc.c, 454
 libmc.h, 345

MC_ComposeAgent_chdl
 agent_lib.h, 248
 libmc.c, 455

MC_ComposeAgentFromFile
 libmc.c, 455
 libmc.h, 346

MC_ComposeAgentFromfile_chdl
 agent_lib.h, 248
 libmc.c, 456

MC_ComposeAgentFromFileS
 libmc.c, 456
 libmc.h, 346

MC_ComposeAgentFromFileWithWorkgroup
 libmc.c, 456
 libmc.h, 347

MC_ComposeAgentFromFileWithWorkgroup_chdl
 agent_lib.h, 249
 libmc.c, 457

MC_ComposeAgentS
 libmc.c, 457
 libmc.h, 348

MC_ComposeAgentWithWorkgroup
 libmc.c, 458
 libmc.h, 348

MC_ComposeAgentWithWorkgroup_chdl
 agent_lib.h, 249
 libmc.c, 459

MC_CondBroadcast
 libmc.c, 459
 libmc.h, 349

MC_CondBroadcast_chdl
 agent_lib.h, 249
 libmc.c, 459

MC_CondReset
 libmc.c, 459
 libmc.h, 350

MC_CondReset_chdl
 agent_lib.h, 249
 libmc.c, 460

MC_CondSignal
 libmc.c, 460
 libmc.h, 350

MC_CondSignal_chdl
 agent_lib.h, 249
 libmc.c, 460

MC_CondWait
 libmc.c, 461
 libmc.h, 351

MC_CondWait_chdl
 agent_lib.h, 249
 libmc.c, 461

MC_CopyAgent
 libmc.c, 461
 libmc.h, 351

MC_DeleteAgent
 libmc.c, 462
 libmc.h, 352

MC_DeleteAgent_chdl
 agent_lib.h, 249
 libmc.c, 462

MC_DeleteAgentWG
 libmc.c, 462
 libmc.h, 352
MC_DeleteAgentWG_chdl
 agent_lib.h, 250
 libmc.c, 463
MC_DeregisterService
 libmc.c, 463
MC_DeregisterService_chdl
 agent_lib.h, 250
 libmc.c, 463
MC_DestroyServiceSearchResult
 libmc.c, 463
 libmc.h, 352
MC_DestroyServiceSearchResult_chdl
 agent_lib.h, 250
 libmc.c, 463
MC_End
 libmc.c, 464
 libmc.h, 353
MC_End_chdl
 agent_lib.h, 250
 libmc.c, 464
mc_error.h
 error_code_e, 385
 error_code_t, 385
MC_FindAgentByID
 libmc.c, 464
 libmc.h, 353
MC_FindAgentByID_chdl
 agent_lib.h, 250
 libmc.c, 465
MC_FindAgentByName
 libmc.c, 465
 libmc.h, 354
MC_FindAgentByName_chdl
 agent_lib.h, 250
 libmc.c, 465
mc_FIPAComm_AddNewProtocol
 fipa_comm.h, 311
mc_FIPAComm_DeregisterPerformative
 fipa_comm.h, 311
mc_FIPAComm_Destroy
 fipa_comm.h, 311
mc_FIPAComm_FSM_CN
 fipa_comm.h, 311
mc_FIPAComm_HandleMessage
 fipa_comm.h, 311
mc_FIPAComm_HandleMessageOnce
 fipa_comm.h, 311
mc_FIPAComm_HandleMessageWait
 fipa_comm.h, 311
mc_FIPAComm_HandleProtocol
 fipa_comm.h, 311
mc_FIPAComm_New
 fipa_comm.h, 311
mc_FIPAComm_NewProtocol
 fipa_comm.h, 311
mc_FIPAComm_RegisterAction
 fipa_comm.h, 311
mc_FIPAComm_RegisterActionS
 fipa_comm.h, 311
mc_FIPAComm_RegisterPerformative
 fipa_comm.h, 311
mc_FIPAComm_RegisterProtocol
 fipa_comm.h, 311
mc_FIPAComm_RegisterProtocolCallback
 fipa_comm.h, 311
mc_FIPAComm_SetAgent
 fipa_comm.h, 311
mc_FIPAComm_SetDefaultReply
 fipa_comm.h, 311
mc_FIPAComm_SetPerformativeDefaultReply
 fipa_comm.h, 311
mc_FIPAComm_SetProtocolState
 fipa_comm.h, 311
mc_FIPAComm_StartProtocol
 fipa_comm.h, 311
mc_FIPAProtocol_New
 fipa_comm.h, 311
mc_genkey.c
 main, 895
 print_usage, 895
MC_GetAgentArrivalTime
 libmc.c, 465
MC_GetAgentArrivalTime_chdl
 libmc.c, 465
MC_GetAgentExecEngine
 libmc.c, 466
 libmc.h, 354
MC_GetAgentID
 libmc.c, 466
 libmc.h, 354
MC_GetAgentID_chdl
 agent_lib.h, 250
 libmc.c, 466
MC_GetAgentName
 libmc.c, 466
 libmc.h, 355
MC_GetAgentName_chdl
 agent_lib.h, 251
 libmc.c, 466
MC_GetAgentNumTasks
 libmc.c, 466
 libmc.h, 355
MC_GetAgentNumTasks_chdl
 agent_lib.h, 251
 libmc.c, 467

MC_GetAgentReturnData
 libmc.c, 467
 libmc.h, 355
MC_GetAgents
 libmc.c, 467
 libmc.h, 356
MC_GetAgentStatus
 libmc.c, 468
 libmc.h, 356
MC_GetAgentStatus_chdl
 agent_lib.h, 251
 libmc.c, 468
MC_GetAgentType
 libmc.c, 468
 libmc.h, 356
MC_GetAgentXMLString
 libmc.c, 468
 libmc.h, 356
MC_GetAgentXMLString_chdl
 agent_lib.h, 251
 libmc.c, 469
MC_GetAllAgents
 libmc.c, 469
 libmc.h, 357
MC_GetNumAgents
 libmc.c, 469
 libmc.h, 357
MC_GetTimeOfDay_chdl
 agent_lib.h, 251
 libmc.c, 469
MC_HaltAgency
 libmc.c, 470
 libmc.h, 357
MC_HaltAgency_chdl
 agent_lib.h, 251
 libmc.c, 470
MC_Initialize
 libmc.c, 470
 libmc.h, 358
MC_InitializeAgencyOptions
 libmc.c, 471
 libmc.h, 358
MC_INITIALIZED_CODE
 libmc.h, 324
MC_LoadAgentFromFile
 libmc.c, 471
 libmc.h, 359
MC_MainLoop
 libmc.c, 471
 libmc.h, 359
MC_MigrateAgent
 libmc.c, 472
 libmc.h, 359
MC_MigrateAgent_chdl
 agent_lib.h, 251
 libmc.c, 472
MC_MutexLock
 libmc.c, 472
 libmc.h, 360
MC_MutexLock_chdl
 agent_lib.h, 252
 libmc.c, 473
MC_MutexUnlock
 libmc.c, 473
 libmc.h, 360
MC_MutexUnlock_chdl
 agent_lib.h, 252
 libmc.c, 473
MC_NUM_PERFORMATIVES
 fipa_comm.h, 306
mc_platform
 agency_s, 43
 agent_s, 53
 message_send_arg_s, 146
mc_platform.c
 DEFAULT_HOSTNAME_LENGTH, 501
 interpreter_queue_CreateRetrieve, 501
 mc_platform_Destroy, 501
 mc_platform_GetQueue, 502
 mc_platform_Initialize, 502
mc_platform.h
 interpreter_queue_CreateRetrieve, 388
 mc_platform_Destroy, 388
 mc_platform_GetQueue, 388
 mc_platform_Initialize, 388
 mc_platform_p, 387
 mc_platform_t, 387
mc_platform_Destroy
 mc_platform.c, 501
 mc_platform.h, 388
mc_platform_GetQueue
 mc_platform.c, 502
 mc_platform.h, 388
mc_platform_Initialize
 mc_platform.c, 502
 mc_platform.h, 388
mc_platform_p
 mc_platform.h, 387
mc_platform_s, 125
 acc, 126
 agency, 126
 agent_processing, 126
 agent_queue, 126
 ams, 126
 asm_message_queue, 126
 barrier_queue, 126
 bluetooth, 127
 client_thread_arg, 127

cmd_prompt, 127
connection_queue, 127
default_agentstatus, 127
df, 127
err, 127
giant, 127
giant_cond, 128
giant_lock, 128
hostname, 128
initInterps, 128
interp_options, 128
interpreter_queue, 128
listen_thread_arg, 128
MC_signal, 128
MC_signal_cond, 129
MC_signal_lock, 129
MC_steer_command, 129
MC_steer_cond, 129
MC_steer_lock, 129
MC_sync_cond, 129
MC_sync_lock, 129
message_queue, 129
port, 130
private_key, 130
quit, 130
quit_cond, 130
quit_lock, 130
sockfd, 130
stack_size, 130
syncList, 131
mc_platform_t
 mc_platform.h, 387
MC_PrintAgentCode
 libmc.c, 473
 libmc.h, 360
MC_PrintAgentCode_chdl
 agent_lib.h, 252
 libmc.c, 473
MC_QueueIndex_e
 libmc.h, 328
MC_QueueRDLock
 libmc.c, 474
 libmc.h, 361
MC_QueueRDUnlock
 libmc.c, 474
 libmc.h, 361
MC_QueueWRLock
 libmc.c, 474
 libmc.h, 361
MC_QueueWRUnlock
 libmc.c, 474
 libmc.h, 361
MC_RegisterService
 libmc.c, 474
 libmc.h, 361
 agent_lib.h, 252
 libmc.c, 475
 MC_ResetSignal
 libmc.c, 475
 libmc.h, 362
 MC_ResumeAgency
 libmc.c, 475
 libmc.h, 362
 MC_ResumeAgency_chdl
 agent_lib.h, 252
 libmc.c, 476
 MC_RetrieveAgent
 libmc.c, 476
 libmc.h, 363
 MC_RetrieveAgent_chdl
 agent_lib.h, 252
 libmc.c, 476
 MC_RetrieveAgentCode
 libmc.c, 476
 libmc.h, 363
 MC_RetrieveAgentCode_chdl
 agent_lib.h, 252
 libmc.c, 477
 mc_rwlock.c
 mc_rwlock_destroy, 503
 mc_rwlock_init, 503
 mc_rwlock_rdlock, 503
 mc_rwlock_runlock, 503
 mc_rwlock_wrlock, 503
 mc_rwlock_wrunlock, 504
 mc_rwlock.h
 mc_rwlock_destroy, 390
 mc_rwlock_init, 390
 mc_rwlock_p, 390
 mc_rwlock_rdlock, 390
 mc_rwlock_runlock, 391
 mc_rwlock_t, 390
 mc_rwlock_wrlock, 391
 mc_rwlock_wrunlock, 391
 mc_rwlock_destroy
 mc_rwlock.c, 503
 mc_rwlock.h, 390
 mc_rwlock_init
 mc_rwlock.c, 503
 mc_rwlock.h, 390
 mc_rwlock_p
 mc_rwlock.h, 390
 mc_rwlock_rdlock
 mc_rwlock.c, 503
 mc_rwlock.h, 390
 mc_rwlock_runlock
 mc_rwlock.c, 503

mc_rwlock.h, 391
mc_rwlock_s, 132
 cond, 132
 lock, 132
 num_readers, 132
 write_flag, 132
 write_request, 132
mc_rwlock_t
 mc_rwlock.h, 390
mc_rwlock_wrlock
 mc_rwlock.c, 503
 mc_rwlock.h, 391
mc_rwlock_wrunlock
 mc_rwlock.c, 504
 mc_rwlock.h, 391
MC_SaveData_chdl
 agent_lib.h, 253
 libmc.c, 477
MC_SearchForService
 libmc.c, 477
 libmc.h, 363
MC_SearchForService_chdl
 agent_lib.h, 253
 libmc.c, 477
MC_SemaphorePost
 libmc.c, 478
 libmc.h, 364
MC_SemaphorePost_chdl
 agent_lib.h, 253
 libmc.c, 478
MC_SemaphoreWait
 libmc.c, 478
 libmc.h, 364
MC_SemaphoreWait_chdl
 agent_lib.h, 253
 libmc.c, 479
MC_SendAgent
 libmc.c, 479
 libmc.h, 365
MC_SendAgentFile
 libmc.c, 479
 libmc.h, 365
MC_SendAgentMigrationMessage
 libmc.c, 479
 libmc.h, 365
MC_SendAgentMigrationMessage_chdl
 agent_lib.h, 253
 libmc.c, 480
MC_SendAgentMigrationMessageFile
 libmc.c, 480
 libmc.h, 366
MC_SendAgentMigrationMessageFile_chdl
 agent_lib.h, 253
 libmc.c, 480
MC_SendCh
 libmc.c, 480
MC_SendSteerCommand
 libmc.c, 481
MC_SendSteerCommand_chdl
 agent_lib.h, 253
 libmc.c, 481
MC_SetAgentStatus
 libmc.c, 481
 libmc.h, 366
MC_SetAgentStatus_chdl
 agent_lib.h, 254
 libmc.c, 481
MC_SetDefaultAgentStatus
 libmc.c, 481
 libmc.h, 367
MC_SetDefaultAgentStatus_chdl
 agent_lib.h, 254
 libmc.c, 482
MC_SetThreadOff
 libmc.c, 482
 libmc.h, 367
MC_SetThreadOn
 libmc.c, 482
 libmc.h, 367
MC_SetThreadsAllOff
 libmc.c, 483
 libmc.h, 368
MC_SetThreadsAllOn
 libmc.c, 483
 libmc.h, 368
MC_signal
 mc_platform_s, 128
MC_signal_cond
 mc_platform_s, 129
MC_Signal_e
 libmc.h, 328
MC_signal_lock
 mc_platform_s, 129
MC_Steer
 libmc.c, 483
 libmc.h, 368
MC_steer_command
 mc_platform_s, 129
MC_steer_cond
 mc_platform_s, 129
MC_steer_lock
 mc_platform_s, 129
MC_SteerCommand_e
 libmc.h, 329
MC_SteerCommand_t
 libmc.h, 325
MC_SteerControl
 libmc.c, 484

libmc.h, 369
MC_sync_cond
 mc_platform_s, 129
MC_sync_lock
 mc_platform_s, 129
MC_SyncDelete
 libmc.c, 484
 libmc.h, 369
MC_SyncDelete_chdl
 agent_lib.h, 254
 libmc.c, 485
MC_SyncInit
 libmc.c, 485
 libmc.h, 370
MC_SyncInit_chdl
 agent_lib.h, 254
 libmc.c, 485
MC_TerminateAgent
 libmc.c, 485
 libmc.h, 370
MC_TerminateAgent_chdl
 agent_lib.h, 254
 libmc.c, 486
MC_TerminateAgentWG
 libmc.c, 486
 libmc.h, 370
MC_TerminateAgentWG_chdl
 agent_lib.h, 254
 libmc.c, 486
MC_ThreadIndex_e
 libmc.h, 329
MC_Wait
 libmc.h, 324
MC_WaitAgent
 libmc.c, 486
 libmc.h, 371
MC_WaitRetrieveAgent
 libmc.c, 486
 libmc.h, 371
MC_WaitSignal
 libmc.c, 487
 libmc.h, 371
MCAgency_t
 libmc.h, 325
MCAgencyOptions_s, 134
 bluetooth, 134
 ch_options, 134
 default_agent_status, 134
 enable_security, 134
 initialized, 135
 initInterps, 135
 known_host_filename, 135
 modified, 135
 passphrase, 135
priv_key_filename, 135
stack_size, 135
threads, 135
MCAgencyOptions_t
 libmc.h, 325
MCAgent_t
 agent.h, 235
 libmc.h, 325
MCFIPAComm_p
 fipa_comm.h, 307
MCFIPAComm_s
 fipa_comm.h, 307
md2
 md2.h, 635
md2.h
 md2, 635
 md2_file, 635
 md2_finish, 635
 md2_hmac, 635
 md2_hmac_finish, 635
 md2_hmac_starts, 636
 md2_hmac_update, 636
 md2_self_test, 636
 md2_starts, 636
 md2_update, 636
md2_context, 137
 buffer, 137
 cksum, 137
 ipad, 137
 left, 137
 opad, 137
 state, 137
md2_file
 md2.h, 635
md2_finish
 md2.h, 635
md2_hmac
 md2.h, 635
md2_hmac_finish
 md2.h, 635
md2_hmac_starts
 md2.h, 636
md2_hmac_update
 md2.h, 636
md2_self_test
 md2.h, 636
md2_starts
 md2.h, 636
md2_update
 md2.h, 636
md4
 md4.h, 639
md4.h
 md4, 639

md4_file, 639
 md4_finish, 639
 md4_hmac, 639
 md4_hmac_finish, 639
 md4_hmac_starts, 640
 md4_hmac_update, 640
 md4_self_test, 640
 md4_starts, 640
 md4_update, 640
 md4_context, 139
 buffer, 139
 ipad, 139
 opad, 139
 state, 139
 total, 139
 md4_file
 md4.h, 639
 md4_finish
 md4.h, 639
 md4_hmac
 md4.h, 639
 md4_hmac_finish
 md4.h, 639
 md4_hmac_starts
 md4.h, 640
 md4_hmac_update
 md4.h, 640
 md4_self_test
 md4.h, 640
 md4_starts
 md4.h, 640
 md4_update
 md4.h, 640
 md5
 md5.c, 785
 md5.h, 643
 md5.c
 F, 784
 GET ULONG LE, 784
 md5, 785
 md5_file, 785
 md5_finish, 785
 md5_hmac, 786
 md5_hmac_finish, 786
 md5_hmac_starts, 786
 md5_hmac_test_buf, 788
 md5_hmac_test buflen, 789
 md5_hmac_test_key, 789
 md5_hmac_test_keylen, 789
 md5_hmac_test_sum, 789
 md5_hmac_update, 787
 md5_padding, 790
 md5_process, 787
 md5_self_test, 787
 md5_starts, 787
 md5_test_buf, 790
 md5_test buflen, 790
 md5_test sum, 791
 md5_update, 788
 P, 784
 PUT ULONG LE, 784
 S, 785
 md5.h
 md5, 643
 md5_file, 643
 md5_finish, 643
 md5_hmac, 643
 md5_hmac_finish, 644
 md5_hmac_starts, 644
 md5_hmac_update, 644
 md5_self_test, 645
 md5_starts, 645
 md5_update, 645
 md5_check
 md5sum.c, 869
 md5_context, 141
 buffer, 141
 ipad, 141
 opad, 141
 state, 141
 total, 141
 MD5_CTX
 openssl.h, 653
 md5_file
 md5.c, 785
 md5.h, 643
 MD5_Final
 openssl.h, 653
 md5_finish
 md5.c, 785
 md5.h, 643
 md5_hmac
 md5.c, 786
 md5.h, 643
 md5_hmac_finish
 md5.c, 786
 md5.h, 644
 md5_hmac_starts
 md5.c, 786
 md5.h, 644
 md5_hmac_test_buf
 md5.c, 788
 md5_hmac_test buflen
 md5.c, 789
 md5_hmac_test_key
 md5.c, 789
 md5_hmac_test_keylen
 md5.c, 789

md5_hmac_test_sum
 md5.c, 789
md5_hmac_update
 md5.c, 787
 md5.h, 644
MD5_Init
 openssl.h, 654
md5_padding
 md5.c, 790
md5_print
 md5sum.c, 869
md5_process
 md5.c, 787
md5_self_test
 md5.c, 787
 md5.h, 645
md5_starts
 md5.c, 787
 md5.h, 645
md5_test_buf
 md5.c, 790
md5_test buflen
 md5.c, 790
md5_test_sum
 md5.c, 791
MD5_Update
 openssl.h, 654
md5_update
 md5.c, 788
 md5.h, 645
md5_wrapper
 md5sum.c, 869
md5sum.c
 main, 869
 md5_check, 869
 md5_print, 869
 md5_wrapper, 869
message
 dynstring_s, 79
 fipa_message_string_s, 106
 message_send_arg_s, 146
message.c
 auth_rece_send_msg, 511
 http_to_hostport, 511
 message_Copy, 512
 message_Destroy, 512
 message_InitializeFromAgent, 512
 message_InitializeFromConnection, 512
 message_InitializeFromString, 512
 message_New, 513
 message_Print, 513
 message_Send, 513
 message_send_Thread, 513
 MSG_THREAD_EXIT, 511
 MSG_THREADS, 511
 SOCKET_INPUT_SIZE, 511
message.h
 AGENT_UPDATE, 393
 auth_rece_send_msg, 393
 CANCEL, 393
 ENCRYPTED_DATA, 393
 ENCRYPTION_INITIALIZE, 393
 FIPA_ACL, 393
 http_to_hostport, 393
 message_Copy, 394
 message_Destroy, 394
 message_InitializeFromAgent, 394
 message_InitializeFromConnection, 394
 message_InitializeFromString, 394
 message_New, 394
 message_p, 393
 message_Print, 394
 message_Send, 395
 message_send_arg_t, 393
 message_send_Thread, 395
 message_t, 393
 message_type_e, 393
 message_type_t, 393
 MOBILE_AGENT, 393
 MSG_SEC, 393
 N_UNDRSTD, 393
 NUM_MESSAGE_TYPE, 393
 QUER_IF, 393
 QUER_REF, 393
 RELAY, 393
 REQUEST, 393
 REQUEST_ENCRYPTION_INITIALIZE, 393
 RETURN_MSG, 393
 SUBSCRIBE, 393
message_body
 message_s, 144
message_Copy
 message.c, 512
 message.h, 394
message_Destroy
 message.c, 512
 message.h, 394
message_id
 message_s, 144
message_InitializeFromAgent
 message.c, 512
 message.h, 394
message_InitializeFromConnection
 message.c, 512
 message.h, 394
message_InitializeFromString
 message.c, 512

message.h, 394
 message_New
 message.c, 513
 message.h, 394
 message_p
 message.h, 393
 message_parts
 mtp_http_s, 152
 message_Print
 message.c, 513
 message.h, 394
 message_queue
 mc_platform_s, 129
 message_queue.c
 message_queue_SendOutgoing, 515
 message_queue_SendOutgoing
 message_queue.c, 515
 message_s, 143
 addr, 143
 agent_xml_flag, 143
 connect_id, 143
 from_address, 143
 http_type, 144
 isHTTP, 144
 message_body, 144
 message_id, 144
 message_type, 144
 sending_agent_name, 144
 target, 144
 to_address, 145
 update_name, 145
 update_num, 145
 xml_payload, 145
 xml_root, 145
 message_Send
 message.c, 513
 message.h, 395
 message_send_arg_s, 146
 mc_platform, 146
 message, 146
 privatekey, 146
 message_send_arg_t
 message.h, 393
 message_send_Thread
 message.c, 513
 message.h, 395
 message_t
 message.h, 393
 message_type
 message_s, 144
 message_type_e
 message.h, 393
 message_type_t
 message.h, 393
 message_xml_parse
 xml_parser.c, 905
 xml_parser.h, 414
 message_xml_parse_message
 xml_parser.c, 906
 xml_parser.h, 414
 METHOD_NOT_ALLOWED
 mtp_http.h, 399
 millisecond
 fipa_DateTime_s, 102
 mime_version
 mtp_http_s, 152
 min
 _x509_time, 39
 minlen
 _ssl_context, 22
 minor_ver
 _ssl_context, 22
 minute
 fipa_DateTime_s, 102
 MISC
 df.h, 271
 MOBILE_AGENT
 message.h, 393
 mode
 des3_context, 75
 des_context, 76
 MODE_DECRYPT
 aescrypt2.c, 866
 interface.h, 585
 MODE_ENCRYPT
 aescrypt2.c, 866
 interface.h, 585
 modified
 MCAgencyOptions_s, 135
 mon
 _x509_time, 39
 month
 fipa_DateTime_s, 102
 mpi, 147
 n, 147
 p, 147
 s, 147
 mpi_add_abs
 bignum.c, 742
 bignum.h, 603
 mpi_add_int
 bignum.c, 742
 bignum.h, 603
 mpi_add_mpi
 bignum.c, 743
 bignum.h, 603
 MPI_CHK
 bignum.h, 602

mpi_cmp_abs
 bignum.c, 743
 bignum.h, 603
mpi_cmp_int
 bignum.c, 743
 bignum.h, 604
mpi_cmp_mpi
 bignum.c, 743
 bignum.h, 604
mpi_copy
 bignum.c, 744
 bignum.h, 604
mpi_demo.c
 main, 875
mpi_div_int
 bignum.c, 744
 bignum.h, 604
mpi_div_mpi
 bignum.c, 744
 bignum.h, 605
mpi_exp_mod
 bignum.c, 745
 bignum.h, 605
mpi_free
 bignum.c, 745
 bignum.h, 605
mpi_gcd
 bignum.c, 745
 bignum.h, 606
mpi_gen_prime
 bignum.c, 745
 bignum.h, 606
mpi_get_digit
 bignum.c, 746
mpi_grow
 bignum.c, 746
 bignum.h, 606
mpi_init
 bignum.c, 746
 bignum.h, 607
mpi_inv_mod
 bignum.c, 747
 bignum.h, 607
mpi_is_prime
 bignum.c, 747
 bignum.h, 607
mpi_lsb
 bignum.c, 747
 bignum.h, 607
mpi_lset
 bignum.c, 747
 bignum.h, 608
mpi_mod_int
 bignum.c, 748
 bignum.h, 608
 mpi_mod_mpi
 bignum.c, 748
 bignum.h, 608
 mpi_montg_init
 bignum.c, 748
 mpi_montmul
 bignum.c, 748
 mpi_montred
 bignum.c, 748
 mpi_msb
 bignum.c, 749
 bignum.h, 608
 mpi_mul_hlp
 bignum.c, 749
 mpi_mul_int
 bignum.c, 749
 bignum.h, 609
 mpi_mul_mpi
 bignum.c, 749
 bignum.h, 609
 mpi_read_binary
 bignum.c, 749
 bignum.h, 609
 mpi_read_file
 bignum.c, 750
 bignum.h, 610
 mpi_read_mystring
 bignum.c, 750
 bignum.h, 610
 mpi_read_string
 bignum.c, 750
 bignum.h, 610
 mpi_self_test
 bignum.c, 751
 bignum.h, 610
 mpi_shift_l
 bignum.c, 751
 bignum.h, 611
 mpi_shift_r
 bignum.c, 751
 bignum.h, 611
 mpi_size
 bignum.c, 751
 bignum.h, 611
 mpi_sub_abs
 bignum.c, 752
 bignum.h, 611
 mpi_sub_hlp
 bignum.c, 752
 mpi_sub_int
 bignum.c, 752
 bignum.h, 612
 mpi_sub_mpi

bignum.c, 752
 bignum.h, 612
 mpi_swap
 bignum.c, 752
 bignum.h, 612
 mpi_write_binary
 bignum.c, 753
 bignum.h, 612
 mpi_write_file
 bignum.c, 753
 bignum.h, 613
 mpi_write_hlp
 bignum.c, 753
 mpi_write_string
 bignum.c, 754
 bignum.h, 613
 MSG_SEC
 message.h, 393
 MSG_THREAD_EXIT
 message.c, 511
 MSG_THREADS
 message.c, 511
 mtp_http.h
 ACCEPTED, 399
 BAD_REQUEST, 399
 CONFLICT, 399
 CONTINUE, 399
 CREATED, 399
 EXPECTATION_FAILED, 400
 FAILED_DEPENDANCY, 400
 FORBIDDEN, 399
 GONE, 399
 HTTP_CONNECT, 399
 HTTP_DELETE, 399
 HTTP_GET, 398
 HTTP_HEAD, 398
 HTTP_NUM_PERFORMATIVES, 399
 HTTP_OPTIONS, 399
 HTTP_PERFORMATIVE_UNDEF, 398
 HTTP_PERFORMATIVE_ZERO, 398
 HTTP_POST, 398
 HTTP_PUT, 399
 HTTP_RESPONSE, 399
 HTTP_TRACE, 399
 LENGTH_REQUIRED, 399
 LOCKED, 400
 METHOD_NOT_ALLOWED, 399
 MULTI_STATUS, 399
 NO_CONTENT, 399
 NON_AUTHORITATIVE_INFORMATION,
 399
 NOT_ACCEPTABLE, 399
 NOT_FOUND, 399
 OK, 399
 PARTIAL_CONTENT, 399
 PAYMENT_REQUIRED, 399
 PRECONDITION_FAILED, 399
 PROCESSING, 399
 PROXY_AUTHENTICATION_REQUIRED,
 399
 REQUEST_TIMEOUT, 399
 REQUEST_URI_TOO_LONG, 399
 REQUESTED_RANGE_NOT_-
 SATISFIABLE, 400
 REQUEST_ENTITY_TOO_LARGE, 399
 RESET_CONTENT, 399
 RETRY_WITH, 400
 SWITCHING_PROTOCOLS, 399
 UNAUTHORIZED, 399
 UNORDERED_COLLECTION, 400
 UNPROCESSABLE_ENTITY, 400
 UNSUPPORTED_MEDIA_TYPE, 399
 UPGRADE_REQUIRED, 400
 mtp_http.c
 http_GetExpression, 517
 http_GetToken, 517
 HTTP_PARSE_EXPR, 517
 http_ParseExpression, 518
 http_ParseRequest, 518
 mtp_http_ComposeMessage, 518
 mtp_http_CreateMessage, 518
 mtp_http_Destroy, 519
 mtp_http_InitializeFromConnection, 519
 mtp_http_New, 519
 mtp_http_Parse, 519
 mtp_http_ParseHeader, 519
 mtp_http_ParseResponse, 520
 rece_de_msg, 520
 SAFE_FREE, 517
 mtp_http.h
 http_GetExpression, 400
 http_GetToken, 400
 http_ParseExpression, 400
 http_ParseRequest, 401
 http_performative_e, 398
 http_status_code_e, 399
 mtp_http_ComposeMessage, 401
 mtp_http_content_t, 398
 mtp_http_CreateMessage, 401
 mtp_http_Destroy, 401
 mtp_http_InitializeFromConnection, 401
 mtp_http_New, 401
 mtp_http_p, 398
 mtp_http_Parse, 402
 mtp_http_ParseHeader, 402
 mtp_http_t, 398
 SOCKET_INPUT_SIZE, 398
 mtp_http_ComposeMessage

mtp_http.c, 518
 mtp_http.h, 401
mtp_http_content_s, 149
 content_type, 149
 data, 149
mtp_http_content_t
 mtp_http.h, 398
mtp_http_CreateMessage
 mtp_http.c, 518
 mtp_http.h, 401
mtp_http_Destroy
 mtp_http.c, 519
 mtp_http.h, 401
mtp_http_InitializeFromConnection
 mtp_http.c, 519
 mtp_http.h, 401
mtp_http_New
 mtp_http.c, 519
 mtp_http.h, 401
mtp_http_p
 mtp_http.h, 398
mtp_http_Parse
 mtp_http.c, 519
 mtp_http.h, 402
mtp_http_ParseHeader
 mtp_http.c, 519
 mtp_http.h, 402
mtp_http_ParseResponse
 mtp_http.c, 520
mtp_http_s, 150
 accept_ranges, 150
 boundary, 150
 cache_control, 150
 connection, 150
 content, 151
 content_length, 151
 content_type, 151
 date, 151
 header_length, 151
 host, 151
 http_performative, 151
 http_status_code, 151
 http_version, 152
 message_parts, 152
 mime_version, 152
 response_code, 152
 response_string, 152
 return_code, 152
 server, 152
 target, 152
 user_agent, 153
mtp_http_t
 mtp_http.h, 398
MUL
 aes.c, 725
 MULADDC_CORE
 bn_mul.h, 615
 MULADDC_INIT
 bn_mul.h, 615
 MULADDC_STOP
 bn_mul.h, 615
 MULTI_STATUS
 mtp_http.h, 399
 MUTEX_DESTROY
 macros.h, 379
 MUTEX_INIT
 macros.h, 379
 MUTEX_LOCK
 macros.h, 379
 MUTEX_NEW
 macros.h, 380
 MUTEX_T
 macros.h, 380
 MUTEX_UNLOCK
 macros.h, 380
mxml-2.2.2/config.h
 HAVE_STRDUP, 521
 HAVE_VSNPRINTF, 521
 mxml_strdupf, 521
 MXML_VERSION, 521
mxml-2.2.2/winconfig.h
 HAVE_STRDUP, 567
 HAVE_VSNPRINTF, 567
 mxml_strdup, 568
 mxml_strdupf, 568
 MXML_VERSION, 567
 mxml_vsnprintf, 568
 strdup, 567
 vsnprintf, 568
mxml-attr.c
 mxmlelementGetAttr, 525
 mxmlelementSetAttr, 525
mxml-entity.c
 callbacks, 527
 default_callback, 526
 mxmlentityAddCallback, 526
 mxmlentityGetName, 526
 mxmlentityGetValue, 526
 mxmlentityRemoveCallback, 526
 num_callbacks, 527
mxml-file.c
 ENCODE_UTF16BE, 529
 ENCODE_UTF16LE, 529
 ENCODE_UTF8, 529
 mxml_add_char, 529
 mxml_bad_char, 529
 mxml_custom_load_cb, 534
 mxml_custom_save_cb, 534

mxml_error_cb, 534
 mxml_fd_getc, 530
 mxml_fd_putc, 530
 mxml_fd_read, 530
 mxml_fd_write, 530
 mxml_fdbuf_t, 529
 mxml_file_getc, 530
 mxml_file_putc, 530
 mxml_get_entity, 530
 mxml_load_data, 531
 mxml_parse_element, 531
 mxml_string_getc, 531
 mxml_string_putc, 531
 mxml_write_name, 531
 mxml_write_node, 531
 mxml_write_string, 532
 mxml_write_ws, 532
 mxmLoadFd, 532
 mxmLoadFile, 532
 mxmLoadString, 532
 mxmSaveAllocString, 533
 mxmSaveFd, 533
 mxmSaveFile, 533
 mxmSaveString, 533
 mxmSetCustomHandlers, 533
 mxmSetErrorHandler, 533
mxml-index.c
 index_compare, 535
 index_find, 535
 index_sort, 535
 mxmIndexDelete, 535
 mxmIndexEnum, 536
 mxmIndexFind, 536
 mxmIndexNew, 536
 mxmIndexReset, 536
mxml-node.c
 mxml_new, 537
 mxmAdd, 537
 mxmDelete, 537
 mxmNewCustom, 538
 mxmNewElement, 538
 mxmNewInteger, 538
 mxmNewOpaque, 538
 mxmNewReal, 538
 mxmNewText, 539
 mxmNewTextf, 539
 mxmRemove, 539
mxml-private.c
 mxml_error, 540
 mxml_error_cb, 541
 mxml_integer_cb, 540
 mxml_opaque_cb, 540
 mxml_real_cb, 540
mxml-search.c
 mxmlFindElement, 542
 mxmlWalkNext, 542
 mxmlWalkPrev, 542
mxml-set.c
 mxmlSetCustom, 543
 mxmlSetElement, 543
 mxmlSetInteger, 543
 mxmlSetOpaque, 543
 mxmlSetReal, 543
 mxmlSetText, 543
 mxmlSetTextf, 544
mxml-string.c
 mxml_strdup, 545
 mxml_strdupf, 545
 mxml_vsnprintf, 545
mxml.h
 MXML_CUSTOM, 551
 MXML_ELEMENT, 551
 MXML_INTEGER, 551
 MXML_OPAQUE, 551
 MXML_REAL, 551
 MXML_TEXT, 551
 MXML_ADD_AFTER, 548
 MXML_ADD_BEFORE, 548
 MXML_ADD_TO_PARENT, 548
 mxml_attr_t, 550
 mxml_custom_load_cb_t, 550
 mxml_custom_save_cb_t, 550
 mxml_custom_t, 550
 MXML_DESCEND, 548
 MXML_DESCEND_FIRST, 548
 mxml_element_t, 551
 mxml_error, 551
 mxml_index_t, 551
 MXML_INTEGER_CALLBACK, 549
 mxml_integer_cb, 551
 MXML_NO_CALLBACK, 549
 MXML_NO_DESCEND, 549
 MXML_NO_PARENT, 549
 mxml_node_t, 551
 MXML_OPAQUE_CALLBACK, 549
 mxml_opaque_cb, 551
 MXML_REAL_CALLBACK, 549
 mxml_real_cb, 551
 MXML_TAB, 549
 MXML_TEXT_CALLBACK, 550
 mxml_text_t, 551
 mxml_type_e, 551
 mxml_type_t, 551
 mxml_value_t, 551
 MXML_WRAP, 550
 MXML_WS_AFTER_CLOSE, 550
 MXML_WS_AFTER_OPEN, 550
 MXML_WS_BEFORE_CLOSE, 550

MXML_WS_BEFORE_OPEN, 550
mxmlAdd, 552
mxmlDelete, 552
mxmlElementGetAttr, 552
mxmlElementSetAttr, 552
mxmlEntityAddCallback, 553
mxmlEntityGetName, 553
mxmlEntityGetValue, 553
mxmlEntityRemoveCallback, 553
mxmlFindElement, 553
mxmlIndexDelete, 553
mxmlIndexEnum, 553
mxmlIndexFind, 554
mxmlIndexNew, 554
mxmlIndexReset, 554
mxmlLoadFd, 554
mxmlLoadFile, 554
mxmlLoadString, 554
mxmlNewCustom, 554
mxmlNewElement, 554
mxmlNewInteger, 555
mxmlNewOpaque, 555
mxmlNewReal, 555
mxmlNewText, 555
mxmlNewTextf, 555
mxmlRemove, 556
mxmlSaveAllocString, 556
mxmlSaveFd, 556
mxmlSaveFile, 556
mxmlSaveString, 556
mxmlSetCustom, 556
mxmlSetCustomHandlers, 556
mxmlSetElement, 556
mxmlSetErrorCallback, 556
mxmlSetInteger, 556
mxmlSetOpaque, 557
mxmlSetReal, 557
mxmlSetText, 557
mxmlSetTextf, 557
mxmlWalkNext, 557
mxmlWalkPrev, 557
MXML_CUSTOM
 mxml.h, 551
MXML_ELEMENT
 mxml.h, 551
MXML_INTEGER
 mxml.h, 551
MXML_OPAQUE
 mxml.h, 551
MXML_REAL
 mxml.h, 551
MXML_TEXT
 mxml.h, 551
MXML_ADD_AFTER
 mxml.h, 548
MXML_ADD_BEFORE
 mxml.h, 548
 mxml_add_char
 mxml-file.c, 529
MXML_ADD_TO_PARENT
 mxml.h, 548
 mxml_attr_s, 154
 name, 154
 value, 154
 mxml_attr_t
 mxml.h, 550
 mxml_bad_char
 mxml-file.c, 529
 mxml_custom_load_cb
 mxml-file.c, 534
 mxml_custom_load_cb_t
 mxml.h, 550
 mxml_custom_s, 155
 data, 155
 destroy, 155
 mxml_custom_save_cb
 mxml-file.c, 534
 mxml_custom_save_cb_t
 mxml.h, 550
 mxml_custom_t
 mxml.h, 550
MXML_DESCEND
 mxml.h, 548
MXML_DESCEND_FIRST
 mxml.h, 548
 mxml_element_t
 mxml.h, 551
 mxml_error
 mxml-private.c, 540
 mxml.h, 551
 mxml_error_cb
 mxml-file.c, 534
 mxml-private.c, 541
 mxml_fd_getc
 mxml-file.c, 530
 mxml_fd_putc
 mxml-file.c, 530
 mxml_fd_read
 mxml-file.c, 530
 mxml_fd_write
 mxml-file.c, 530
 mxml_fdbuf_s, 156
 buffer, 156
 current, 156
 end, 156
 fd, 156
 mxml_fdbuf_t
 mxml-file.c, 529

mxml_file_getc
 mxml-file.c, 530
 mxml_file_putc
 mxml-file.c, 530
 mxml_get_entity
 mxml-file.c, 530
 mxml_index_s, 157
 alloc_nodes, 157
 attr, 157
 cur_node, 157
 nodes, 157
 num_nodes, 157
 mxml_index_t
 mxml.h, 551
 MXML_INTEGER_CALLBACK
 mxml.h, 549
 mxml_integer_cb
 mxml-private.c, 540
 mxml.h, 551
 mxml_load_data
 mxml-file.c, 531
 mxml_new
 mxml-node.c, 537
 MXML_NO_CALLBACK
 mxml.h, 549
 MXML_NO_DESCEND
 mxml.h, 549
 MXML_NO_PARENT
 mxml.h, 549
 mxml_node_s, 159
 child, 159
 last_child, 159
 next, 159
 parent, 159
 prev, 159
 type, 160
 value, 160
 mxml_node_t
 mxml.h, 551
 MXML_OPAQUE_CALLBACK
 mxml.h, 549
 mxml_opaque_cb
 mxml-private.c, 540
 mxml.h, 551
 mxml_parse_element
 mxml-file.c, 531
 MXML_REAL_CALLBACK
 mxml.h, 549
 mxml_real_cb
 mxml-private.c, 540
 mxml.h, 551
 mxml_strdup
 mxml-2.2.2/winconfig.h, 568
 mxml-string.c, 545
 mxml_strdupf
 mxml-2.2.2/config.h, 521
 mxml-2.2.2/winconfig.h, 568
 mxml-string.c, 545
 mxml_string_getc
 mxml-file.c, 531
 mxml_string_putc
 mxml-file.c, 531
 MXML_TAB
 mxml.h, 549
 MXML_TEXT_CALLBACK
 mxml.h, 550
 mxml_text_s, 161
 string, 161
 whitespace, 161
 mxml_text_t
 mxml.h, 551
 mxml_type_e
 mxml.h, 551
 mxml_type_t
 mxml.h, 551
 mxml_value_s, 162
 attrs, 162
 name, 162
 numAttrs, 162
 mxml_value_t
 mxml.h, 551
 mxml_value_u, 163
 custom, 163
 element, 163
 integer, 163
 opaque, 163
 real, 163
 text, 163
 MXML_VERSION
 mxml-2.2.2/config.h, 521
 mxml-2.2.2/winconfig.h, 567
 mxml_vsnprintf
 mxml-2.2.2/winconfig.h, 568
 mxml-string.c, 545
 MXML_WRAP
 mxml.h, 550
 mxml_write_name
 mxml-file.c, 531
 mxml_write_node
 mxml-file.c, 531
 mxml_write_string
 mxml-file.c, 532
 mxml_write_ws
 mxml-file.c, 532
 MXML_WS_AFTER_CLOSE
 mxml.h, 550
 MXML_WS_AFTER_OPEN
 mxml.h, 550

MXML_WS_BEFORE_CLOSE
 mxml.h, 550

MXML_WS_BEFORE_OPEN
 mxml.h, 550

mxmlAdd
 mxml-node.c, 537
 mxml.h, 552

mxmlDelete
 mxml-node.c, 537
 mxml.h, 552

mxmlDoc.c
 add_variable, 559
 main, 559
 safe strcpy, 559
 scan_file, 559
 sort_node, 560
 STATE_C_COMMENT, 558
 STATE_CHARACTER, 558
 STATE_CXX_COMMENT, 558
 STATE_IDENTIFIER, 558
 STATE_NONE, 559
 STATE_PREPROCESSOR, 559
 STATE_STRING, 559
 update_comment, 560
 write_documentation, 560
 write_element, 560
 write_string, 560
 ws_cb, 561

mxmlElementGetAttr
 mxml-attr.c, 525
 mxml.h, 552

mxmlElementSetAttr
 mxml-attr.c, 525
 mxml.h, 552

mxmlEntityAddCallback
 mxml-entity.c, 526
 mxml.h, 553

mxmlEntityGetName
 mxml-entity.c, 526
 mxml.h, 553

mxmlEntityGetValue
 mxml-entity.c, 526
 mxml.h, 553

mxmlEntityRemoveCallback
 mxml-entity.c, 526
 mxml.h, 553

mxmlFindElement
 mxml-search.c, 542
 mxml.h, 553

mxmlIndexDelete
 mxml-index.c, 535
 mxml.h, 553

mxmlIndexEnum
 mxml-index.c, 536

 mxml.h, 553

 mxmlIndexFind
 mxml-index.c, 536
 mxml.h, 554

 mxmlIndexNew
 mxml-index.c, 536
 mxml.h, 554

 mxmlIndexReset
 mxml-index.c, 536
 mxml.h, 554

 mxmlLoadFd
 mxml-file.c, 532
 mxml.h, 554

 mxmlLoadFile
 mxml-file.c, 532
 mxml.h, 554

 mxmlLoadString
 mxml-file.c, 532
 mxml.h, 554

 mxmlNewCustom
 mxml-node.c, 538
 mxml.h, 554

 mxmlNewElement
 mxml-node.c, 538
 mxml.h, 554

 mxmlNewInteger
 mxml-node.c, 538
 mxml.h, 555

 mxmlNewOpaque
 mxml-node.c, 538
 mxml.h, 555

 mxmlNewReal
 mxml-node.c, 538
 mxml.h, 555

 mxmlNewText
 mxml-node.c, 539
 mxml.h, 555

 mxmlNewTextf
 mxml-node.c, 539
 mxml.h, 555

 mxmlRemove
 mxml-node.c, 539
 mxml.h, 556

 mxmlSaveAllocString
 mxml-file.c, 533
 mxml.h, 556

 mxmlSaveFd
 mxml-file.c, 533
 mxml.h, 556

 mxmlSaveFile
 mxml-file.c, 533
 mxml.h, 556

 mxmlSaveString
 mxml-file.c, 533

mxml.h, 556
 mxmlSetCustom
 mxml-set.c, 543
 mxml.h, 556
 mxmlSetCustomHandlers
 mxml-file.c, 533
 mxml.h, 556
 mxmlSetElement
 mxml-set.c, 543
 mxml.h, 556
 mxmlSetErrorCallback
 mxml-file.c, 533
 mxml.h, 556
 mxmlSetInteger
 mxml-set.c, 543
 mxml.h, 556
 mxmlSetOpaque
 mxml-set.c, 543
 mxml.h, 557
 mxmlSetReal
 mxml-set.c, 543
 mxml.h, 557
 mxmlSetText
 mxml-set.c, 543
 mxml.h, 557
 mxmlSetTextf
 mxml-set.c, 544
 mxml.h, 557
 mxmlWalkNext
 mxml-search.c, 542
 mxml.h, 557
 mxmlWalkPrev
 mxml-search.c, 542
 mxml.h, 557
 my_ciphers
 ssl_server.c, 884
 my_debug
 ssl_client1.c, 880
 ssl_client2.c, 882
 ssl_server.c, 884
 ssl_test.c, 893
 my_dhm_G
 ssl_server.c, 885
 my_dhm_P
 ssl_server.c, 885
 my_get_session
 ssl_server.c, 884
 my_set_session
 ssl_server.c, 884
 myrand
 benchmark.c, 887

n
 mpi, 147
 N_UNDRSTD
 message.h, 393
 name
 agent_file_data_s, 49
 agent_s, 54
 fipa_agent_identifier_s, 90
 interpreter_variable_data_s, 122
 mxml_attr_s, 154
 mxml_value_s, 162
 nb_zero
 _ssl_context, 23
 net.c
 net_accept, 793
 net_bind, 793
 net_close, 793
 net_connect, 793
 net_htons, 794
 net_is_blocking, 794
 net_recv, 794
 net_send, 794
 net_set_block, 794
 net_set_nonblock, 795
 net_usleep, 795
 net.h
 net_accept, 649
 net_bind, 649
 net_close, 649
 net_connect, 649
 net_recv, 650
 net_send, 650
 net_set_block, 650
 net_set_nonblock, 650
 net_usleep, 651
 XYSSL_ERR_NET_ACCEPT_FAILED, 648
 XYSSL_ERR_NET_BIND_FAILED, 648
 XYSSL_ERR_NET_CONN_RESET, 648
 XYSSL_ERR_NET_CONNECT_FAILED, 648
 XYSSL_ERR_NET_LISTEN_FAILED, 648
 XYSSL_ERR_NET_RECV_FAILED, 648
 XYSSL_ERR_NET_SEND_FAILED, 648
 XYSSL_ERR_NET_SOCKET_FAILED, 648
 XYSSL_ERR_NET_TRY AGAIN, 648
 XYSSL_ERR_NET_UNKNOWN_HOST, 649
 net_accept
 net.c, 793
 net.h, 649
 net_bind
 net.c, 793
 net.h, 649
 net_close

net.c, 793
net.h, 649
net_connect
 net.c, 793
 net.h, 649
net_htons
 net.c, 794
net_is_blocking
 net.c, 794
net_recv
 net.c, 794
 net.h, 650
net_send
 net.c, 794
 net.h, 650
net_set_block
 net.c, 794
 net.h, 650
net_set_nonblock
 net.c, 795
 net.h, 650
net_usleep
 net.c, 795
 net.h, 651
network
 fipa_comm_protocol_t, 97
next
 _ssl_session, 29
 _x509_cert, 32
 _x509_name, 35
 fipa_comm_action_t, 92
 fipa_comm_message_check_t, 93
 fipa_comm_protocol_t, 97
 fipa_list_t, 105
 listNode_s, 124
 mxml_node_s, 159
NO_CONTENT
 mtp_http.h, 399
node_data
 listNode_s, 124
nodes
 mxml_index_s, 157
NON_AUTHORITATIVE_INFORMATION
 mtp_http.h, 399
nonce
 connection_s, 69
NOT_ACCEPTABLE
 mtp_http.h, 399
NOT_FOUND
 mtp_http.h, 399
nr
 aes_context, 41
num
 fipa_agent_identifier_set_s, 91
 fipa_url_sequence_s, 110
 NUM_MESSAGE_TYPE
 message.h, 393
 num_args
 command_s, 68
 num_attrs
 mxml_value_s, 162
 num_callbacks
 mxml-entity.c, 527
 num_nodes
 mxml_index_s, 157
 num_params
 fipa_acl_envelope_s, 84
 num_readers
 mc_rwlock_s, 132
 num_registered
 barrier_node_s, 60
 num_results
 df.h, 274
 num_saved_variables
 agent_task_s, 57
 num_services
 df.h, 274
 num_waiting
 barrier_node_s, 60
number
 fipa_expression_s::content_u, 71
number_of_elements
 agent_task_s, 57
number_of_tasks
 agent_datastate_s, 47
offset
 havege_state, 117
oid
 _x509_name, 35
OID_CN
 x509.h, 713
OID_PKCS1
 x509.h, 713
OID_PKCS1_RSA
 x509.h, 713
OID_PKCS1_RSA_SHA
 x509.h, 713
OID_PKCS9
 x509.h, 713
OID_PKCS9_EMAIL
 x509.h, 713
OID_X520
 x509.h, 713
OK
 mtp_http.h, 399
ONE_ITERATION
 havege.c, 779

ontology
 fipa_acl_message_s, 86

opad
 md2_context, 137
 md4_context, 139
 md5_context, 141
 sha1_context, 173
 sha2_context, 175
 sha4_context, 177

opaque
 hr_time, 120
 mxml_value_u, 163

openssl.h
 __RSA_Passthrough, 655
 AES_BLOCK_SIZE, 653
 AES_cbc_encrypt, 653
 AES_KEY, 653
 AES_set_decrypt_key, 653
 AES_set_encrypt_key, 653
 AES_SIZE, 653
 d2i_RSA_PUBKEY, 655
 d2i_RSAPrivateKey, 653
 ERR_get_error, 653
 MD5_CTX, 653
 MD5_Final, 653
 MD5_Init, 654
 MD5_Update, 654
 RSA, 654
 RSA_blinding_off, 654
 RSA_free, 654
 RSA_PKCS1_PADDING, 654
 RSA_private_decrypt, 655
 RSA_private_encrypt, 655
 RSA_public_decrypt, 655
 RSA_public_encrypt, 655
 RSA_size, 654
 SHA1_Final, 654
 SHA1_Init, 654
 SHA1_Update, 654
 SHA_CTX, 654

opmode
 options, 166

OPMODE_CLIENT
 ssl_test.c, 892

OPMODE_NONE
 ssl_test.c, 892

OPMODE_SERVER
 ssl_test.c, 892

options, 165
 buffer_size, 165
 command, 165
 conn_timeout, 165
 debug_level, 165
 force_cipher, 165

iomode, 166
 max_bytes, 166
 max_connections, 166
 opmode, 166
 server_name, 166
 server_port, 166
 session_lifetime, 166
 session_reuse, 166

orphan
 agent_s, 54

out_ctr
 __ssl_context, 23

out_hdr
 __ssl_context, 23

out_left
 __ssl_context, 23

out_msg
 __ssl_context, 23

out_msflen
 __ssl_context, 23

out_msctype
 __ssl_context, 24

own_cert
 __ssl_context, 24

owner
 agent_s, 54

P

 dhm_context, 78
 md5.c, 784
 rsa_context, 170
 sha1.c, 809
 sha2.c, 817
 sha4.c, 826

p
 __x509_buf, 30
 __x509_node, 36
 mpi, 147

p_dbg
 __ssl_context, 24

p_recv
 __ssl_context, 24

p_rng
 __ssl_context, 24
 rsa_context, 170

p_send
 __ssl_context, 24

PACKAGE_STRING
 winconfig.h, 569

PACKAGE_VERSION
 winconfig.h, 569

padding
 rsa_context, 170

params

fipa_acl_envelope_s, 84
parent
 mxml_node_s, 159
parse
 fipa_message_string_s, 106
PARTIAL_CONTENT
 mtp_http.h, 399
passphrase
 MCAgencyOptions_s, 135
PATH
 interface.h, 585
payload_encoding
 fipa_acl_Param_s, 89
payload_length
 fipa_acl_Param_s, 89
PAYMENT_REQUIRED
 mtp_http.h, 399
pCallbacks
 fipa_comm_t, 100
peer_cert
 _ssl_context, 25
peer_cn
 _ssl_context, 25
PEM_LINE_LENGTH
 x509.h, 714
performative
 fipa_acl_message_s, 86
 fipa_comm_t, 101
persistent
 agent_datastate_s, 47
 agent_task_s, 57
pk_oid
 _x509_cert, 32
PKCS9_EMAIL
 x509.h, 714
plainchar
 base64::base64_decodestate, 64
 base64_decodestate, 63
PLAINTEXT
 dh_server.c, 874
pmslen
 _ssl_context, 25
pool
 havege_state, 117
port
 acc.h, 234
 host_id_s, 119
 mc_platform_s, 130
portno
 agency_s, 44
portnoc
 agency_s, 44
PRECONDITION_FAILED
 mtp_http.h, 399

premaster
 _ssl_context, 25
prev
 mxml_node_s, 159
print_connectlist
 commands.x.h, 267
print_usage
 mc_genkey.c, 895
printlist_agents
 commands.x.h, 267
priv_key_filename
 agency_s, 44
 MCAgencyOptions_s, 135
private_key
 mc_platform_s, 130
privatekey
 message_send_arg_s, 146
process_command
 cmd_prompt.c, 204
 cmd_prompt.h, 262
PROCESSING
 mtp_http.h, 399
progress_modifier
 agent_datastate_s, 47
proposal_func
 fipa_comm_protocol_cn_t, 95
protocol
 fipa_acl_message_s, 86
 fipa_comm_t, 101
protocol_contract_net_callback
 fipa_comm.h, 308
PROXY_AUTHENTICATION_REQUIRED
 mtp_http.h, 399
prv
 ssl_server.c, 885
PT1
 havege_state, 117
PT2
 havege_state, 117
PT_LEN
 rsa.c, 798
PTHREAD_STACK_SIZE
 macros.h, 380
PUT_UINT64_BE
 sha4.c, 827
PUT ULONG_BE
 des.c, 764
 sha1.c, 809
 sha2.c, 817
PUT ULONG LE
 aes.c, 725
 md5.c, 784

Q

rsa_context, 170
 QP
 rsa_context, 170
 QUER_IF
 message.h, 393
 QUER_REF
 message.h, 393
 queue
 fipa_comm_protocol_cn_t, 95
 quit
 mc_platform_s, 130
 quit_cond
 mc_platform_s, 130
 quit_lock
 mc_platform_s, 130

R
 sha1.c, 809
 sha2.c, 818
 randbytes
 _ssl_context, 25
 raw
 _x509_cert, 32
 _x509_raw, 37
 RCON
 aes.c, 731
 read_encrypted_file
 interface.c, 581
 interface.h, 586
 read_known_host_file
 interface.c, 581
 interface.h, 587
 reader_cond
 rwlock_s, 172
 readers
 rwlock_s, 172
 real
 mxml_value_u, 163
 rece_de_msg
 mtp_http.c, 520
 receive_AES_en_MA
 interface.c, 582
 interface.h, 587
 receive_decrypt_AES_key
 interface.h, 587
 received
 fipa_acl_Param_s, 89
 received_by
 fipa_acl_envelope_Received_s, 82
 received_date
 fipa_acl_envelope_Received_s, 82
 received_from
 fipa_acl_envelope_Received_s, 82
 received_id

fipa_acl_envelope_Received_s, 82
 received_via
 fipa_acl_envelope_Received_s, 82
 receiver
 fipa_acl_message_s, 86
 receiver_num
 fipa_acl_message_s, 86
 receiving_decrypting_MA_RSA
 interface.h, 587
 receiving_verifying_MA_RSA
 interface.h, 587
 register
 df_request.x.h, 276
 RELAY
 message.h, 393
 remote_hostname
 connection_s, 69
 remove_nonce_from_MA
 interface.c, 582
 replies
 fipa_comm_protocol_cn_t, 95
 reply
 fipa_comm_action_t, 92
 reply_by
 fipa_acl_message_s, 86
 reply_migration_process
 interface.c, 582
 interface.h, 587
 reply_to
 fipa_acl_message_s, 87
 reply_with
 fipa_acl_message_s, 87
 REQUEST
 df.c, 206
 df.h, 271, 273, 274
 df_request.x.h, 276
 message.h, 393
 REQUEST_ENCRYPTION_INITIALIZE
 message.h, 393
 REQUEST_TIMEOUT
 mtp_http.h, 399
 REQUEST_URI_TOO_LONG
 mtp_http.h, 399
 request_handler_DEREGISTER
 df.c, 209
 request_handler_REGISTER
 df.c, 209
 request_handler_SEARCH
 df.c, 209
 request_handler_SUBSCRIBE
 df.c, 209
 REQUESTED_RANGE_NOT_SATISFIABLE
 mtp_http.h, 400
 require_inform

fipa_comm_protocol_cn_t, 95
REQUEST_ENTITY_TOO_LARGE
 mtp_http.h, 399
RESET_CONTENT
 mtp_http.h, 399
resolvers
 fipa_agent_identifier_s, 90
response_code
 mtp_http_s, 152
response_string
 mtp_http_s, 152
result
 base64::base64_encodestate, 66
 base64_encodestate, 65
resume
 _ssl_context, 25
retain_order
 fipa_agent_identifier_set_s, 91
RETRY_WITH
 mtp_http.h, 400
RETURN_MSG
 message.h, 393
return_code
 mtp_http_s, 152
return_data
 agent_datastate_s, 47
 agent_s, 54
RHs
 des.c, 770
rk
 aes_context, 41
RN
 rsa_context, 170
ROTL8
 aes.c, 726
ROTR
 sha2.c, 818
 sha4.c, 827
RP
 dhm_context, 78
 rsa_context, 170
RQ
 rsa_context, 171
RSA
 openssl.h, 654
rsa
 _x509_cert, 32
rsa.c
 KEY_LEN, 798
 PT_LEN, 798
 rsa_check_privkey, 800
 rsa_check_pubkey, 801
 RSA_D, 798
 RSA_DP, 798
RSA_DQ, 799
RSA_E, 799
rsa_free, 801
rsa_gen_key, 801
rsa_init, 802
RSA_N, 799
RSA_P, 799
rsa_pkcs1_decrypt, 802
rsa_pkcs1_encrypt, 803
rsa_pkcs1_sign, 803
rsa_pkcs1_verify, 804
rsa_private, 804
RSA_PT, 800
rsa_public, 805
RSA_Q, 800
RSA_QP, 800
rsa_self_test, 805
rsa.h
 ASN1_HASH_MDX, 658
 ASN1_HASH_SHA1, 658
 rsa_check_privkey, 661
 rsa_check_pubkey, 661
 RSA_CRYPT, 659
 rsa_free, 662
 rsa_gen_key, 662
 rsa_init, 662
 RSA_MD2, 659
 RSA_MD4, 659
 RSA_MD5, 659
 rsa_pkcs1_decrypt, 663
 rsa_pkcs1_encrypt, 663
 rsa_pkcs1_sign, 664
 rsa_pkcs1_verify, 664
 RSA_PKCS_V15, 659
 RSA_PKCS_V21, 659
 RSA_PRIVATE, 659
 rsa_private, 665
 RSA_PUBLIC, 659
 rsa_public, 666
 RSA_RAW, 660
 rsa_self_test, 666
 RSA_SHA1, 660
 RSA_SHA256, 660
 RSA_SIGN, 660
 XYSSL_ERR_RSA_BAD_INPUT_DATA,
 660
 XYSSL_ERR_RSA_INVALID_PADDING,
 660
 XYSSL_ERR_RSA_KEY_CHECK_-
 FAILED, 660
 XYSSL_ERR_RSA_KEY_GEN_FAILED,
 660
 XYSSL_ERR_RSA_PRIVATE_FAILED, 661
 XYSSL_ERR_RSA_PUBLIC_FAILED, 661

XYSSL_ERR_RSA_VERIFY_FAILED, 661
RSA_blinding_off
 openssl.h, 654
rsa_check_privkey
 rsa.c, 800
 rsa.h, 661
rsa_check_pubkey
 rsa.c, 801
 rsa.h, 661
rsa_context, 168
 D, 168
 DP, 168
 DQ, 168
 E, 169
 f_rng, 169
 hash_id, 169
 len, 169
 N, 169
 P, 170
 p_rng, 170
 padding, 170
 Q, 170
 QP, 170
 RN, 170
 RP, 170
 RQ, 171
 ver, 171
RSA_CRYPT
 rsa.h, 659
RSA_D
 rsa.c, 798
RSA_DE
 interface.h, 585
rsa_decryption
 interface.c, 582
 interface.h, 587
RSA_DP
 rsa.c, 798
RSA_DQ
 rsa.c, 799
RSA_E
 rsa.c, 799
RSA_EN
 interface.h, 585
rsa_encryption
 interface.c, 582
 interface.h, 587
RSA_free
 openssl.h, 654
rsa_free
 rsa.c, 801
 rsa.h, 662
rsa_gen_key
 rsa.c, 801

rsa.h, 662
rsa_genkey.c
 EXPONENT, 876
 KEY_SIZE, 876
 main, 876
rsa_init
 rsa.c, 802
 rsa.h, 662
rsa_key
 _ssl_context, 26
RSA_MD2
 rsa.h, 659
RSA_MD4
 rsa.h, 659
RSA_MD5
 rsa.h, 659
RSA_N
 rsa.c, 799
RSA_P
 rsa.c, 799
rsa_pkcs1_decrypt
 rsa.c, 802
 rsa.h, 663
rsa_pkcs1_encrypt
 rsa.c, 803
 rsa.h, 663
RSA_PKCS1_PADDING
 openssl.h, 654
rsa_pkcs1_sign
 rsa.c, 803
 rsa.h, 664
rsa_pkcs1_verify
 rsa.c, 804
 rsa.h, 664
RSA_PKCS_V15
 rsa.h, 659
RSA_PKCS_V21
 rsa.h, 659
RSA_PRIVATE
 rsa.h, 659
rsa_private
 rsa.c, 804
 rsa.h, 665
RSA_private_decrypt
 openssl.h, 655
RSA_private_encrypt
 openssl.h, 655
RSA_PT
 rsa.c, 800
RSA_PUBLIC
 rsa.h, 659
rsa_public
 rsa.c, 805
 rsa.h, 666

RSA_public_decrypt
 openssl.h, 655
RSA_public_encrypt
 openssl.h, 655
RSA_Q
 rsa.c, 800
RSA_QP
 rsa.c, 800
RSA_RAW
 rsa.h, 660
rsa_self_test
 rsa.c, 805
 rsa.h, 666
RSA_SHA1
 rsa.h, 660
RSA_SHA256
 rsa.h, 660
RSA_SIGN
 rsa.h, 660
rsa_sign.c
 main, 877
RSA_size
 openssl.h, 654
rsa_verify.c
 main, 878
RSb
 aes.c, 731
RT0
 aes.c, 731
RT1
 aes.c, 731
RT2
 aes.c, 731
RT3
 aes.c, 731
run_lock
 agent_s, 54
rwlock
 list_s, 123
rwlock.c
 rwlock_Destroy, 570
 rwlock_New, 570
 rwlock_rdlock, 570
 rwlock_rdunlock, 570
 rwlock_rdwait, 570
 rwlock_wrlock, 571
 rwlock_wrunlock, 571
rwlock.h
 rwlock_Destroy, 403
 rwlock_New, 403
 rwlock_rdlock, 403
 rwlock_rdunlock, 404
 rwlock_rdwait, 404
 rwlock_t, 403
rwlock_wrlock, 404
rwlock_wrunlock, 404
RWLOCK_DESTROY
 macros.h, 380
rwlock_Destroy
 rwlock.c, 570
 rwlock.h, 403
RWLOCK_INIT
 macros.h, 381
rwlock_New
 rwlock.c, 570
 rwlock.h, 403
RWLOCK_RDLOCK
 macros.h, 381
rwlock_rdlock
 rwlock.c, 570
 rwlock.h, 403
RWLOCK_RDUNLOCK
 macros.h, 381
rwlock_rdunlock
 rwlock.c, 570
 rwlock.h, 404
rwlock_rdwait
 rwlock.c, 570
 rwlock.h, 404
rwlock_s, 172
 lock, 172
 reader_cond, 172
 readers, 172
 writer_cond, 172
RWLOCK_T
 macros.h, 381
rwlock_t
 rwlock.h, 403
RWLOCK_WRLOCK
 macros.h, 381
rwlock_wrlock
 rwlock.c, 571
 rwlock.h, 404
RWLOCK_WRUNLOCK
 macros.h, 381
rwlock_wrunlock
 rwlock.c, 571
 rwlock.h, 404

S
 md5.c, 785
 sha1.c, 809
s
 mpi, 147
S0
 sha2.c, 818
 sha4.c, 827
S1

sha2.c, 818
 sha4.c, 827
S2
 sha2.c, 818
 sha4.c, 827
S3
 sha2.c, 818
 sha4.c, 827
s_get
 _ssl_context, 26
s_list_1st
 ssl_server.c, 885
s_set
 _ssl_context, 26
SAFE_FREE
 mtp_http.c, 517
safe_strcpy
 mxmldoc.c, 559
saved_variables
 agent_task_s, 57
SB1
 des.c, 771
SB2
 des.c, 771
SB3
 des.c, 772
SB4
 des.c, 772
SB5
 des.c, 772
SB6
 des.c, 773
SB7
 des.c, 773
SB8
 des.c, 774
scan_file
 mxmldoc.c, 559
search
 df_request.x.h, 276
sec
 _x509_time, 39
second
 fipa_DateTime_s, 103
security/xyssl-0.9/include/xyssl/config.h
 XYSSL_AES_C, 522
 XYSSL_ARC4_C, 522
 XYSSL_BASE64_C, 522
 XYSSL_BIGNUM_C, 522
 XYSSL_CERTS_C, 522
 XYSSL_DEBUG_C, 523
 XYSSL_DEBUG_MSG, 523
 XYSSL_DES_C, 523
 XYSSL_DHM_C, 523
 XYSSL_GENPRIME, 523
 XYSSL_HAVE_ASM, 523
 XYSSL_HAVEGE_C, 523
 XYSSL_MD5_C, 523
 XYSSL_NET_C, 523
 XYSSL_PADLOCK_C, 523
 XYSSL_RSA_C, 523
 XYSSL_SELF_TEST, 524
 XYSSL_SHA1_C, 524
 XYSSL_SHA2_C, 524
 XYSSL_SHA4_C, 524
 XYSSL_SSL_CLI_C, 524
 XYSSL_SSL_SRV_C, 524
 XYSSL_SSL_TLS_C, 524
 XYSSL_TIMING_C, 524
 XYSSL_X509_PARSE_C, 524
 XYSSL_X509_WRITE_C, 524
selftest.c
 main, 888
sem
 syncListNode_s, 180
SEMAPHORE_DESTROY
 macros.h, 381
SEMAPHORE_INIT
 macros.h, 381
SEMAPHORE_POST
 macros.h, 381
SEMAPHORE_T
 macros.h, 381
SEMAPHORE_WAIT
 macros.h, 382
send
 commands.x.h, 267
send_AES_en_MA
 interface.c, 582
 interface.h, 587
sender
 agent_s, 54
 fipa_acl_message_s, 87
sending_agent_name
 message_s, 144
separate_key_parts
 interface.c, 582
serial
 _x509_cert, 32
 _x509_raw, 37
server
 agency_s, 44
 mtp_http_s, 152
server_fd
 acc.h, 234
 ssl_test.c, 894
SERVER_NAME
 dh_client.c, 872

ssl_client1.c, 879
ssl_client2.c, 881
server_name
 agent_task_s, 57
 options, 166
SERVER_PORT
 dh_client.c, 872
 dh_server.c, 874
 ssl_client1.c, 879
 ssl_client2.c, 881
server_port
 options, 166
serverfd
 connection_s, 70
service_name
 df.h, 275
service_names
 df.h, 275
service_types
 df.h, 275
service_types_e
 df.h, 271
session
 _ssl_context, 26
session_lifetime
 options, 166
session_reuse
 options, 166
set_alarm
 timing.c, 855
 timing.h, 707
set_bar
 foo_c, 113
 foo_s, 115
set_foo
 foo_c, 113
 foo_s, 116
set_foobar
 foo_c, 113
SET_THREAD_OFF
 macros.h, 382
SET_THREAD_ON
 macros.h, 382
sha1
 sha1.c, 809
 sha1.h, 668
sha1.c
 F, 808
 GET ULONG_BE, 808
 K, 808, 809
 P, 809
 PUT ULONG_BE, 809
 R, 809
 S, 809
sha1
 sha1_file, 810
 sha1_finish, 810
 sha1_hmac, 810
 sha1_hmac_finish, 811
 sha1_hmac_starts, 811
 sha1_hmac_test_buf, 813
 sha1_hmac_test buflen, 813
 sha1_hmac_test_key, 813
 sha1_hmac_test_keylen, 814
 sha1_hmac_test_sum, 814
 sha1_hmac_update, 811
 sha1_padding, 814
 sha1_process, 811
 sha1_self_test, 812
 sha1_starts, 812
 sha1_test_buf, 814
 sha1_test buflen, 815
 sha1_test_sum, 815
 sha1_update, 812
sha1.h
 sha1, 668
 sha1_file, 668
 sha1_finish, 668
 sha1_hmac, 668
 sha1_hmac_finish, 669
 sha1_hmac_starts, 669
 sha1_hmac_update, 669
 sha1_self_test, 670
 sha1_starts, 670
 sha1_update, 670
sha1_check
 sha1sum.c, 870
sha1_context, 173
 buffer, 173
 ipad, 173
 opad, 173
 state, 173
 total, 173
sha1_file
 sha1.c, 810
 sha1.h, 668
SHA1_Final
 openssl.h, 654
sha1_finish
 sha1.c, 810
 sha1.h, 668
sha1_hmac
 sha1.c, 810
 sha1.h, 668
sha1_hmac_finish
 sha1.c, 811
 sha1.h, 669
sha1_hmac_starts

sha1.c, 811
 sha1.h, 669
 sha1_hmac_test_buf
 sha1.c, 813
 sha1_hmac_test buflen
 sha1.c, 813
 sha1_hmac_test_key
 sha1.c, 813
 sha1_hmac_test_keylen
 sha1.c, 814
 sha1_hmac_test_sum
 sha1.c, 814
 sha1_hmac_update
 sha1.c, 811
 sha1.h, 669
 SHA1_Init
 openssl.h, 654
 sha1_padding
 sha1.c, 814
 sha1_print
 sha1sum.c, 870
 sha1_process
 sha1.c, 811
 sha1_self_test
 sha1.c, 812
 sha1.h, 670
 sha1_starts
 sha1.c, 812
 sha1.h, 670
 sha1_test_buf
 sha1.c, 814
 sha1_test buflen
 sha1.c, 815
 sha1_test_sum
 sha1.c, 815
 SHA1_Update
 openssl.h, 654
 sha1_update
 sha1.c, 812
 sha1.h, 670
 sha1_wrapper
 sha1sum.c, 870
 sha1sum.c
 main, 870
 sha1_check, 870
 sha1_print, 870
 sha1_wrapper, 870
 sha2
 sha2.c, 818
 sha2.h, 673
 sha2.c
 F0, 817
 F1, 817
 GET ULONG BE, 817
 P, 817
 PUT ULONG BE, 817
 R, 818
 ROTR, 818
 S0, 818
 S1, 818
 S2, 818
 S3, 818
 sha2, 818
 sha2_file, 819
 sha2_finish, 819
 sha2_hmac, 819
 sha2_hmac_finish, 820
 sha2_hmac_starts, 820
 sha2_hmac_test_buf, 822
 sha2_hmac_test buflen, 822
 sha2_hmac_test_key, 822
 sha2_hmac_test_keylen, 823
 sha2_hmac_test_sum, 823
 sha2_hmac_update, 820
 sha2_padding, 823
 sha2_process, 820
 sha2_self_test, 821
 sha2_starts, 821
 sha2_test_buf, 823
 sha2_test buflen, 823
 sha2_test_sum, 824
 sha2_update, 821
 SHR, 818
 sha2.h
 sha2, 673
 sha2_file, 673
 sha2_finish, 673
 sha2_hmac, 673
 sha2_hmac_finish, 674
 sha2_hmac_starts, 674
 sha2_hmac_update, 674
 sha2_self_test, 675
 sha2_starts, 675
 sha2_update, 675
 sha2_check
 sha2sum.c, 871
 sha2_context, 175
 buffer, 175
 ipad, 175
 is224, 175
 opad, 175
 state, 175
 total, 176
 sha2_file
 sha2.c, 819
 sha2.h, 673
 sha2_finish
 sha2.c, 819

sha2.h, 673
sha2_hmac
 sha2.c, 819
 sha2.h, 673
sha2_hmac_finish
 sha2.c, 820
 sha2.h, 674
sha2_hmac_starts
 sha2.c, 820
 sha2.h, 674
sha2_hmac_test_buf
 sha2.c, 822
sha2_hmac_test buflen
 sha2.c, 822
sha2_hmac_test_key
 sha2.c, 822
sha2_hmac_test_keylen
 sha2.c, 823
sha2_hmac_test_sum
 sha2.c, 823
sha2_hmac_update
 sha2.c, 820
 sha2.h, 674
sha2_padding
 sha2.c, 823
sha2_print
 sha2sum.c, 871
sha2_process
 sha2.c, 820
sha2_self_test
 sha2.c, 821
 sha2.h, 675
sha2_starts
 sha2.c, 821
 sha2.h, 675
sha2_test_buf
 sha2.c, 823
sha2_test buflen
 sha2.c, 823
sha2_test_sum
 sha2.c, 824
sha2_update
 sha2.c, 821
 sha2.h, 675
sha2_wrapper
 sha2sum.c, 871
sha2sum.c
 main, 871
 sha2_check, 871
 sha2_print, 871
 sha2_wrapper, 871
sha4
 sha4.c, 827
 sha4.h, 678
 sha4.c
 F0, 826
 F1, 826
 GET_UINT64_BE, 826
 K, 830
 P, 826
 PUT_UINT64_BE, 827
 ROTR, 827
 S0, 827
 S1, 827
 S2, 827
 S3, 827
 sha4, 827
 sha4_file, 827
 sha4_finish, 828
 sha4_hmac, 828
 sha4_hmac_finish, 828
 sha4_hmac_starts, 829
 sha4_hmac_test_buf, 830
 sha4_hmac_test buflen, 831
 sha4_hmac_test_key, 831
 sha4_hmac_test_keylen, 832
 sha4_hmac_test_sum, 832
 sha4_hmac_update, 829
 sha4_padding, 832
 sha4_process, 829
 sha4_self_test, 829
 sha4_starts, 830
 sha4_test_buf, 832
 sha4_test buflen, 832
 sha4_test_sum, 833
 sha4_update, 830
 SHR, 827
 sha4.h
 int64, 678
 sha4, 678
 sha4_file, 678
 sha4_finish, 678
 sha4_hmac, 679
 sha4_hmac_finish, 679
 sha4_hmac_starts, 679
 sha4_hmac_update, 680
 sha4_self_test, 680
 sha4_starts, 680
 sha4_update, 681
 UL64, 678
 sha4_context, 177
 buffer, 177
 ipad, 177
 is384, 177
 opad, 177
 state, 177
 total, 178
 sha4_file

sha4.c, 827
 sha4.h, 678
 sha4_finish
 sha4.c, 828
 sha4.h, 678
 sha4_hmac
 sha4.c, 828
 sha4.h, 679
 sha4_hmac_finish
 sha4.c, 828
 sha4.h, 679
 sha4_hmac_starts
 sha4.c, 829
 sha4.h, 679
 sha4_hmac_test_buf
 sha4.c, 830
 sha4_hmac_test buflen
 sha4.c, 831
 sha4_hmac_test_key
 sha4.c, 831
 sha4_hmac_test_keylen
 sha4.c, 832
 sha4_hmac_test_sum
 sha4.c, 832
 sha4_hmac_update
 sha4.c, 829
 sha4.h, 680
 sha4_padding
 sha4.c, 832
 sha4_process
 sha4.c, 829
 sha4_self_test
 sha4.c, 829
 sha4.h, 680
 sha4_starts
 sha4.c, 830
 sha4.h, 680
 sha4_test_buf
 sha4.c, 832
 sha4_test buflen
 sha4.c, 832
 sha4_test_sum
 sha4.c, 833
 sha4_update
 sha4.c, 830
 sha4.h, 681
 SHA_CTX
 openssl.h, 654
 SHR
 sha2.c, 818
 sha4.c, 827
 sig
 _x509_cert, 32
 sig_oid1
 _x509_cert, 32
 sig_oid2
 _x509_cert, 33
 sighandler
 timing.c, 855
 sign
 _x509_raw, 37
 fipa_DateTime_s, 103
 SIGNAL
 macros.h, 382
 signalg
 _x509_raw, 37
 signalled
 syncListNode_s, 180
 size
 barrier_queue_s, 62
 dynstring_s, 79
 interpreter_variable_data_s, 122
 list_s, 123
 size_of_element_array
 agent_task_s, 57
 sk
 des3_context, 75
 des_context, 76
 SLEEP_QUEUE
 macros.h, 382
 SLEEP_RESET
 macros.h, 382
 small_prime
 bignum.c, 754
 SOCKET_ERROR
 macros.h, 382
 SOCKET_INPUT_SIZE
 message.c, 511
 mtp_http.h, 398
 sockfd
 mc_platform_s, 130
 SOME
 df.h, 271
 sort_node
 mxmldoc.c, 560
 split_string
 cmd_prompt.c, 204
 cmd_prompt.h, 262
 ssl.h
 SSL_CERTIFICATE_REQUEST, 694
 SSL_CERTIFICATE_VERIFY, 694
 SSL_CLIENT_CERTIFICATE, 694
 SSL_CLIENT_CHANGE_CIPHER_SPEC,
 694
 SSL_CLIENT_FINISHED, 694
 SSL_CLIENT_HELLO, 694
 SSL_CLIENT_KEY_EXCHANGE, 694
 SSL_FLUSH_BUFFERS, 694

SSL_HANDSHAKE_OVER, 694
SSL_HELLO_REQUEST, 694
SSL_SERVER_CERTIFICATE, 694
SSL_SERVER_CHANGE_CIPHER_SPEC,
 694
SSL_SERVER_FINISHED, 694
SSL_SERVER_HELLO, 694
SSL_SERVER_HELLO_DONE, 694
SSL_SERVER_KEY_EXCHANGE, 694
SSL_ALERT_CLOSE_NOTIFY, 686
SSL_ALERT_FATAL, 686
SSL_ALERT_NO_CERTIFICATE, 686
SSL_ALERT_WARNING, 686
SSL_BUFFER_LEN, 686
ssl_calc_verify, 694
ssl_close_notify, 694
SSL_COMPRESS_NULL, 686
ssl_context, 694
ssl_default_ciphers, 705
ssl_derive_keys, 695
SSL_EDH_RSA_AES_256_SHA, 686
SSL_EDH_RSA DES_168_SHA, 686
ssl_fetch_input, 695
ssl_flush_output, 695
ssl_free, 695
ssl_get_bytes_avail, 696
ssl_get_cipher, 696
ssl_get_verify_result, 696
ssl_handshake, 696
ssl_handshake_client, 697
ssl_handshake_server, 697
SSL_HS_CERTIFICATE, 687
SSL_HS_CERTIFICATE_REQUEST, 687
SSL_HS_CERTIFICATE_VERIFY, 687
SSL_HS_CLIENT_HELLO, 687
SSL_HS_CLIENT_KEY_EXCHANGE, 687
SSL_HS_FINISHED, 687
SSL_HS_HELLO_REQUEST, 687
SSL_HS_SERVER_HELLO, 687
SSL_HS_SERVER_HELLO_DONE, 687
SSL_HS_SERVER_KEY_EXCHANGE, 688
ssl_init, 697
SSL_IS_CLIENT, 688
SSL_IS_SERVER, 688
SSL_MAJOR_VERSION_3, 688
SSL_MAX_CONTENT_LEN, 688
SSL_MINOR_VERSION_0, 688
SSL_MINOR_VERSION_1, 688
SSL_MINOR_VERSION_2, 689
SSL_MSG_ALERT, 689
SSL_MSG_APPLICATION_DATA, 689
SSL_MSG_CHANGE_CIPHER_SPEC, 689
SSL_MSG_HANDSHAKE, 689
ssl_parse_certificate, 698
ssl_parse_change_cipher_spec, 698
ssl_parse_finished, 698
ssl_read, 698
ssl_read_record, 699
SSL_RSA_AES_128_SHA, 689
SSL_RSA_AES_256_SHA, 689
SSL_RSA DES_168_SHA, 689
SSL_RSA_RC4_128_MD5, 690
SSL_RSA_RC4_128_SHA, 690
ssl_session, 694
ssl_set_authmode, 699
ssl_set_bio, 700
ssl_set_ca_chain, 700
ssl_set_ciphers, 700
ssl_set_dbg, 701
ssl_set_dh_param, 701
ssl_set_endpoint, 701
ssl_set_hostname, 701
ssl_set_own_cert, 702
ssl_set_rng, 702
ssl_set_scb, 702
ssl_set_session, 703
ssl_states, 694
SSL_VERIFY_NONE, 690
SSL_VERIFY_OPTIONAL, 690
SSL_VERIFY_REQUIRED, 690
ssl_write, 703
ssl_write_certificate, 704
ssl_write_change_cipher_spec, 704
ssl_write_finished, 704
ssl_write_record, 704
TLS_EXT_SERVERNAME, 690
TLS_EXT_SERVERNAME_HOSTNAME,
 690
XYSSL_ERR_SSL_BAD_HS_-
 CERTIFICATE, 690
XYSSL_ERR_SSL_BAD_HS_-
 CERTIFICATE_REQUEST, 690
XYSSL_ERR_SSL_BAD_HS_-
 CERTIFICATE_VERIFY, 691
XYSSL_ERR_SSL_BAD_HS_CHANGE_-
 CIPHER_SPEC, 691
XYSSL_ERR_SSL_BAD_HS_CLIENT_-
 HELLO, 691
XYSSL_ERR_SSL_BAD_HS_CLIENT_-
 KEY_EXCHANGE, 691
XYSSL_ERR_SSL_BAD_HS_FINISHED,
 691
XYSSL_ERR_SSL_BAD_HS_SERVER_-
 HELLO, 691
XYSSL_ERR_SSL_BAD_HS_SERVER_-
 HELLO_DONE, 691
XYSSL_ERR_SSL_BAD_HS_SERVER_-
 KEY_EXCHANGE, 691

XYSSL_ERR_SSL_BAD_INPUT_DATA,
 691
 XYSSL_ERR_SSL_CA_CHAIN_-
 REQUIRED, 692
 XYSSL_ERR_SSL_CERTIFICATE_-
 REQUIRED, 692
 XYSSL_ERR_SSL_CERTIFICATE_TOO_-
 LARGE, 692
 XYSSL_ERR_SSL_FATAL_ALERT_-
 MESSAGE, 692
 XYSSL_ERR_SSL_FEATURE_-
 UNAVAILABLE, 692
 XYSSL_ERR_SSL_INVALID_MAC, 692
 XYSSL_ERR_SSL_INVALID_MODULUS_-
 SIZE, 692
 XYSSL_ERR_SSL_INVALID_RECORD,
 692
 XYSSL_ERR_SSL_NO_CIPHER_CHOSEN,
 693
 XYSSL_ERR_SSL_NO_CLIENT_-
 CERTIFICATE, 693
 XYSSL_ERR_SSL_NO_SESSION_FOUND,
 693
 XYSSL_ERR_SSL_PEER_CLOSE_-
 NOTIFY, 693
 XYSSL_ERR_SSL_PEER_VERIFY_-
 FAILED, 693
 XYSSL_ERR_SSL_PRIVATE_KEY_-
 REQUIRED, 693
 XYSSL_ERR_SSL_UNEXPECTED_-
 MESSAGE, 693
 XYSSL_ERR_SSL_UNKNOWN_CIPHER,
 693
SSL_CERTIFICATE_REQUEST
 ssl.h, 694
SSL_CERTIFICATE_VERIFY
 ssl.h, 694
SSL_CLIENT_CERTIFICATE
 ssl.h, 694
SSL_CLIENT_CHANGE_CIPHER_SPEC
 ssl.h, 694
SSL_CLIENT_FINISHED
 ssl.h, 694
SSL_CLIENT_HELLO
 ssl.h, 694
SSL_CLIENT_KEY_EXCHANGE
 ssl.h, 694
SSL_FLUSH_BUFFERS
 ssl.h, 694
SSL_HANDSHAKE_OVER
 ssl.h, 694
SSL_HELLO_REQUEST
 ssl.h, 694
SSL_SERVER_CERTIFICATE
 ssl.h, 694
 ssl.h, 694
SSL_SERVER_CHANGE_CIPHER_SPEC
 ssl.h, 694
SSL_SERVER_FINISHED
 ssl.h, 694
SSL_SERVER_HELLO
 ssl.h, 694
SSL_SERVER_HELLO_DONE
 ssl.h, 694
SSL_SERVER_KEY_EXCHANGE
 ssl.h, 694
SSL_ALERT_CLOSE_NOTIFY
 ssl.h, 686
SSL_ALERT_FATAL
 ssl.h, 686
SSL_ALERT_NO_CERTIFICATE
 ssl.h, 686
SSL_ALERT_WARNING
 ssl.h, 686
SSL_BUFFER_LEN
 ssl.h, 686
ssl_calc_finished
 ssl_tls.c, 842
ssl_calc_verify
 ssl.h, 694
 ssl_tls.c, 842
ssl_cli.c
 ssl_handshake_client, 834
 ssl_parse_certificate_request, 834
 ssl_parse_server_hello, 834
 ssl_parse_server_hello_done, 835
 ssl_parse_server_key_exchange, 835
 ssl_write_certificate_verify, 835
 ssl_write_client_hello, 835
 ssl_write_client_key_exchange, 836
ssl_client1.c
 DEBUG_LEVEL, 879
 GET_REQUEST, 879
 main, 880
 my_debug, 880
 SERVER_NAME, 879
 SERVER_PORT, 879
ssl_client2.c
 DEBUG_LEVEL, 881
 GET_REQUEST, 881
 main, 882
 my_debug, 882
 SERVER_NAME, 881
 SERVER_PORT, 881
ssl_close_notify
 ssl.h, 694
 ssl_tls.c, 842
SSL_COMPRESS_NULL
 ssl.h, 686

ssl_context
 ssl.h, 694
SSL_DEBUG_BUF
 debug.h, 619
SSL_DEBUG_CRT
 debug.h, 619
SSL_DEBUG_MPI
 debug.h, 620
SSL_DEBUG_MSG
 debug.h, 620
SSL_DEBUG_RET
 debug.h, 620
ssl_decrypt_buf
 ssl_tls.c, 842
ssl_default_ciphers
 ssl.h, 705
 ssl_tls.c, 853
ssl_derive_keys
 ssl.h, 695
 ssl_tls.c, 843
SSL_EDH_RSA_AES_256_SHA
 ssl.h, 686
SSL_EDH_RSA DES_168_SHA
 ssl.h, 686
ssl_encrypt_buf
 ssl_tls.c, 843
ssl_fetch_input
 ssl.h, 695
 ssl_tls.c, 843
ssl_flush_output
 ssl.h, 695
 ssl_tls.c, 843
ssl_free
 ssl.h, 695
 ssl_tls.c, 843
ssl_get_bytes_avail
 ssl.h, 696
 ssl_tls.c, 844
ssl_get_cipher
 ssl.h, 696
 ssl_tls.c, 844
ssl_get_verify_result
 ssl.h, 696
 ssl_tls.c, 844
ssl_handshake
 ssl.h, 696
 ssl_tls.c, 845
ssl_handshake_client
 ssl.h, 697
 ssl_cli.c, 834
ssl_handshake_server
 ssl.h, 697
 ssl_srv.c, 837
SSL_HS_CERTIFICATE
 ssl.h, 687
 SSL_HS_CERTIFICATE_REQUEST
 ssl.h, 687
 SSL_HS_CERTIFICATE_VERIFY
 ssl.h, 687
 SSL_HS_CLIENT_HELLO
 ssl.h, 687
 SSL_HS_CLIENT_KEY_EXCHANGE
 ssl.h, 687
 SSL_HS_FINISHED
 ssl.h, 687
 SSL_HS_HELLO_REQUEST
 ssl.h, 687
 SSL_HS_SERVER_HELLO
 ssl.h, 687
 SSL_HS_SERVER_HELLO_DONE
 ssl.h, 687
 SSL_HS_SERVER_KEY_EXCHANGE
 ssl.h, 688
 ssl_init
 ssl.h, 697
 ssl_tls.c, 845
 SSL_IS_CLIENT
 ssl.h, 688
 SSL_IS_SERVER
 ssl.h, 688
 ssl_mac_md5
 ssl_tls.c, 845
 ssl_mac_sha1
 ssl_tls.c, 845
 SSL_MAJOR_VERSION_3
 ssl.h, 688
 SSL_MAX_CONTENT_LEN
 ssl.h, 688
 SSL_MINOR_VERSION_0
 ssl.h, 688
 SSL_MINOR_VERSION_1
 ssl.h, 688
 SSL_MINOR_VERSION_2
 ssl.h, 689
 SSL_MSG_ALERT
 ssl.h, 689
 SSL_MSG_APPLICATION_DATA
 ssl.h, 689
 SSL_MSG_CHANGE_CIPHER_SPEC
 ssl.h, 689
 SSL_MSG_HANDSHAKE
 ssl.h, 689
 ssl_parse_certificate
 ssl.h, 698
 ssl_tls.c, 846
 ssl_parse_certificate_request
 ssl_cli.c, 834
 ssl_parse_certificate_verify

ssl_srv.c, 837
 ssl_parse_change_cipher_spec
 ssl.h, 698
 ssl_tls.c, 846
 ssl_parse_client_hello
 ssl_srv.c, 838
 ssl_parse_client_key_exchange
 ssl_srv.c, 838
 ssl_parse_finished
 ssl.h, 698
 ssl_tls.c, 846
 ssl_parse_server_hello
 ssl_cli.c, 834
 ssl_parse_server_hello_done
 ssl_cli.c, 835
 ssl_parse_server_key_exchange
 ssl_cli.c, 835
 ssl_read
 ssl.h, 698
 ssl_tls.c, 846
 ssl_read_record
 ssl.h, 699
 ssl_tls.c, 847
 SSL_RSA_AES_128_SHA
 ssl.h, 689
 SSL_RSA_AES_256_SHA
 ssl.h, 689
 SSL_RSA DES_168_SHA
 ssl.h, 689
 SSL_RSA_RC4_128_MD5
 ssl.h, 690
 SSL_RSA_RC4_128_SHA
 ssl.h, 690
 ssl_server.c
 cur, 884
 DEBUG_LEVEL, 883
 HTTP_RESPONSE, 883
 main, 884
 my_ciphers, 884
 my_debug, 884
 my_dhm_G, 885
 my_dhm_P, 885
 my_get_session, 884
 my_set_session, 884
 prv, 885
 s_list_1st, 885
 ssl_session
 ssl.h, 694
 ssl_set_authmode
 ssl.h, 699
 ssl_tls.c, 847
 ssl_set_bio
 ssl.h, 700
 ssl_tls.c, 847
 ssl_set_ca_chain
 ssl.h, 700
 ssl_tls.c, 848
 ssl_set_ciphers
 ssl.h, 700
 ssl_tls.c, 848
 ssl_set_dbg
 ssl.h, 701
 ssl_tls.c, 848
 ssl_set_dh_param
 ssl.h, 701
 ssl_tls.c, 849
 ssl_set_endpoint
 ssl.h, 701
 ssl_tls.c, 849
 ssl_set_hostname
 ssl.h, 701
 ssl_tls.c, 849
 ssl_set_own_cert
 ssl.h, 702
 ssl_tls.c, 850
 ssl_set_rng
 ssl.h, 702
 ssl_tls.c, 850
 ssl_set_scb
 ssl.h, 702
 ssl_tls.c, 850
 ssl_set_session
 ssl.h, 703
 ssl_tls.c, 851
 ssl_srv.c
 ssl_handshake_server, 837
 ssl_parse_certificate_verify, 837
 ssl_parse_client_hello, 838
 ssl_parse_client_key_exchange, 838
 ssl_write_certificate_request, 838
 ssl_write_server_hello, 838
 ssl_write_server_hello_done, 839
 ssl_write_server_key_exchange, 839
 ssl_states
 ssl.h, 694
 ssl_test
 ssl_test.c, 893
 ssl_test.c
 COMMAND_BOTH, 890
 COMMAND_READ, 890
 COMMAND_WRITE, 890
 DFL_BUFFER_SIZE, 890
 DFL_COMMAND, 890
 DFL_CONN_TIMEOUT, 890
 DFL_DEBUG_LEVEL, 890
 DFL_FORCE_CIPHER, 890
 DFL_IOMODE, 891
 DFL_MAX_BYTES, 891

DFL_MAX_CONNECTIONS, 891
DFL_OPMODE, 891
DFL_SERVER_NAME, 891
DFL_SERVER_PORT, 891
DFL_SESSION_LIFETIME, 891
DFL_SESSION_REUSE, 891
dhm_G, 893
dhm_P, 894
IOMODE_BLOCK, 891
IOMODE_NONBLOCK, 892
lcppm5, 893
main, 893
my_debug, 893
OPMODE_CLIENT, 892
OPMODE_NONE, 892
OPMODE_SERVER, 892
server_fd, 894
ssl_test, 893
USAGE, 892

ssl_tls.c

- ssl_calc_finished, 842
- ssl_calc_verify, 842
- ssl_close_notify, 842
- ssl_decrypt_buf, 842
- ssl_default_ciphers, 853
- ssl_derive_keys, 843
- ssl_encrypt_buf, 843
- ssl_fetch_input, 843
- ssl_flush_output, 843
- ssl_free, 843
- ssl_get_bytes_avail, 844
- ssl_get_cipher, 844
- ssl_get_verify_result, 844
- ssl_handshake, 845
- ssl_init, 845
- ssl_mac_md5, 845
- ssl_mac_sha1, 845
- ssl_parse_certificate, 846
- ssl_parse_change_cipher_spec, 846
- ssl_parse_finished, 846
- ssl_read, 846
- ssl_read_record, 847
- ssl_set_authmode, 847
- ssl_set_bio, 847
- ssl_set_ca_chain, 848
- ssl_set_ciphers, 848
- ssl_set_dbg, 848
- ssl_set_dh_param, 849
- ssl_set_endpoint, 849
- ssl_set_hostname, 849
- ssl_set_own_cert, 850
- ssl_set_rng, 850
- ssl_set_scb, 850
- ssl_set_session, 851

ssl_write, 851
ssl_write_certificate, 852
ssl_write_change_cipher_spec, 852
ssl_write_finished, 852
ssl_write_record, 852
tls1_prf, 853

SSL_VERIFY_NONE

- ssl.h, 690

SSL_VERIFY_OPTIONAL

- ssl.h, 690

SSL_VERIFY_REQUIRED

- ssl.h, 690

ssl_write

- ssl.h, 703
- ssl_tls.c, 851

ssl_write_certificate

- ssl.h, 704
- ssl_tls.c, 852

ssl_write_certificate_request

- ssl_srv.c, 838

ssl_write_certificate_verify

- ssl_cli.c, 835

ssl_write_change_cipher_spec

- ssl.h, 704
- ssl_tls.c, 852

ssl_write_client_hello

- ssl_cli.c, 835

ssl_write_client_key_exchange

- ssl_cli.c, 836

ssl_write_finished

- ssl.h, 704
- ssl_tls.c, 852

ssl_write_record

- ssl.h, 704
- ssl_tls.c, 852

ssl_write_server_hello

- ssl_srv.c, 838

ssl_write_server_hello_done

- ssl_srv.c, 839

ssl_write_server_key_exchange

- ssl_srv.c, 839

stack_size

- agency_s, 44
- mc_platform_s, 130
- MCAgencyOptions_s, 135

start

- _hr_time, 15
- _ssl_session, 29

state

- _ssl_context, 26
- fipa_comm_protocol_t, 97
- md2_context, 137
- md4_context, 139
- md5_context, 141

sha1_context, 173
 sha2_context, 175
 sha4_context, 177
STATE_C_COMMENT
 mxmldoc.c, 558
STATE_CHARACTER
 mxmldoc.c, 558
STATE_CXX_COMMENT
 mxmldoc.c, 558
STATE_IDENTIFIER
 mxmldoc.c, 558
STATE_NONE
 mxmldoc.c, 559
STATE_PREPROCESSOR
 mxmldoc.c, 559
STATE_STRING
 mxmldoc.c, 559
stationary_agent_info_s, 179
 agency, 179
 agent, 179
 args, 179
 attr, 179
 thread, 179
stationary_agent_info_t
 libmc.h, 325
step
 base64::base64_decodestate, 64
 base64::base64_encodestate, 66
 base64_decodestate, 63
 base64_encodestate, 65
step_A
 base64, 14
 cencode.h, 418
step_a
 base64, 13
 cdecode.h, 416
step_B
 base64, 14
 cencode.h, 418
step_b
 base64, 13
 cdecode.h, 416
step_C
 base64, 14
 cencode.h, 418
step_c
 base64, 13
 cdecode.h, 416
step_d
 base64, 14
 cdecode.h, 416
stepcount
 base64::base64_encodestate, 66
 base64_encodestate, 65

str
 fipa_number_s, 107
 fipa_url_s, 109
strdup
 mxml-2.2.2/winconfig.h, 567
 winconfig.h, 569
string
 fipa_expression_s::content_u, 71
 mxml_text_s, 161
strtok_r
 winconfig.h, 569
STRUCT
 acc.h, 234
 ams.h, 258
 df.h, 274
 macros.h, 383
 xml_parser.h, 414
struct.cxx
 foo_t, 565
subject
 _x509_cert, 33
 _x509_raw, 37
subject_id
 _x509_cert, 33
subject_raw
 _x509_cert, 33
subpubkey
 _x509_raw, 37
SUBSCRIBE
 message.h, 393
SWAP
 des.c, 765
 havege.c, 779
SWITCHING_PROTOCOLS
 mtp_http.h, 399
sync_list.c
 syncListAddNode, 505
 syncListDelete, 505
 syncListNew, 505
 syncListNode_CmpID, 505
 syncListNodeDestroy, 506
 syncListNodeInit, 506
 syncListNodeNew, 506
 syncListRemove, 506
sync_list.h
 syncListAddNode, 507
 syncListDelete, 507
 syncListGet, 508
 syncListNew, 508
 syncListNode_CmpID, 508
 syncListNode_p, 507
 syncListNode_t, 507
 syncListNodeDestroy, 508
 syncListNodeInit, 508

syncListNodeNew, 508
syncListRemove, 508
syncList
 mc_platform_s, 131
syncListAddNode
 sync_list.c, 505
 sync_list.h, 507
syncListDelete
 sync_list.c, 505
 sync_list.h, 507
syncListGet
 sync_list.h, 508
syncListNew
 sync_list.c, 505
 sync_list.h, 508
syncListNode_CmpID
 sync_list.c, 505
 sync_list.h, 508
syncListNode_p
 sync_list.h, 507
syncListNode_s, 180
 cond, 180
 id, 180
 lock, 180
 sem, 180
 signalled, 180
syncListNode_t
 sync_list.h, 507
syncListNodeDestroy
 sync_list.c, 506
 sync_list.h, 508
syncListNodeInit
 sync_list.c, 506
 sync_list.h, 508
syncListNodeNew
 sync_list.c, 506
 sync_list.h, 508
syncListRemove
 sync_list.c, 506
 sync_list.h, 508
t_dbl
 bignum.h, 603
t_int
 bignum.h, 603
tag
 _x509_buf, 30
target
 message_s, 144
 mtp_http_s, 152
task_progress
 agent_datastate_s, 47
tasks
 agent_datastate_s, 47
tbs
 _x509_cert, 33
 _x509_raw, 38
tbs_signalg
 _x509_raw, 38
test_ca_crt
 certs.c, 756
 certs.h, 617
test_ca_key
 certs.c, 756
 certs.h, 617
test_ca_pwd
 certs.c, 756
 certs.h, 617
test_cli_crt
 certs.c, 757
 certs.h, 617
test_cli_key
 certs.c, 757
 certs.h, 617
test_srv_crt
 certs.c, 758
 certs.h, 617
test_srv_key
 certs.c, 758
 certs.h, 618
testxml.c
 main, 566
 type_cb, 566
 whitespace_cb, 566
text
 mxml_value_u, 163
thread
 cmd_prompt_s, 67
 stationary_agent_info_s, 179
THREAD_CANCEL
 macros.h, 383
THREAD_CREATE
 macros.h, 383
THREAD_DETACH
 macros.h, 383
THREAD_EXIT
 macros.h, 383
THREAD_JOIN
 macros.h, 384
threads
 agency_s, 45
 MCAgencyOptions_s, 135
time_out
 fipa_comm_protocol_cn_t, 95
timeout
 _ssl_context, 26
timing.c
 alarmed, 855

get_timer, 854
 hardclock, 855
 hardclock_init, 855
 m_sleep, 855
 set_alarm, 855
 sighandler, 855
 tv_init, 855
 timing.h
 alarmed, 707
 get_timer, 706
 hardclock, 706
 m_sleep, 707
 set_alarm, 707
 tls1_prf
 ssl_tls.c, 853
 TLS_EXT_SERVERNAME
 ssl.h, 690
 TLS_EXT_SERVERNAME_HOSTNAME
 ssl.h, 690
 to
 fipa_acl_Param_s, 89
 to_address
 message_s, 145
 total
 md4_context, 139
 md5_context, 141
 sha1_context, 173
 sha2_context, 176
 sha4_context, 178
 TST1_ENTER
 havege.c, 779
 TST1_LEAVE
 havege.c, 779
 TST2_ENTER
 havege.c, 779
 TST2_LEAVE
 havege.c, 780
 tv_init
 timing.c, 855
 type
 fipa_comm_action_t, 92
 fipa_comm_message_check_t, 93
 fipa_comm_protocol_t, 97
 fipa_comm_reply_t, 99
 fipa_expression_s, 104
 mxml_node_s, 160
 type_cb
 testxml.c, 566
 TYPES
 df.h, 271
 udplisten_Thread
 acc.c, 187
 acc.h, 234
 UDPPORT
 acc.c, 185
 UL64
 sha4.h, 678
 UNAUTHORIZED
 mtp_http.h, 399
 UNORDERED_COLLECTION
 mtp_http.h, 400
 UNPROCESSABLE_ENTITY
 mtp_http.h, 400
 UNSUPPORTED_MEDIA_TYPE
 mtp_http.h, 399
 update_comment
 mxmldoc.c, 560
 update_name
 message_s, 145
 update_num
 message_s, 145
 UPGRADE_REQUIRED
 mtp_http.h, 400
 urls
 fipa_url_sequence_s, 110
 USAGE
 aescrypt2.c, 866
 ssl_test.c, 892
 usage
 base64.cc, 415
 user_agent
 mtp_http_s, 153
 v3_ext
 _x509_cert, 33
 val
 _x509_name, 35
 valid_from
 _x509_cert, 33
 valid_to
 _x509_cert, 33
 validity
 _x509_raw, 38
 value
 mxml_attr_s, 154
 mxml_node_s, 160
 var_name
 agent_task_s, 57
 ver
 rsa_context, 171
 verify_result
 _ssl_context, 27
 version
 _x509_cert, 33
 _x509_raw, 38
 vsnprintf
 mxml-2.2.2/winconfig.h, 568

WAKE_QUEUE
 macros.h, 384

WALK
 havege_state, 117

WARN
 macros.h, 384

wg_code
 agent_s, 54

whitespace
 mxml_text_s, 161

whitespace_cb
 testxml.c, 566
 xml_helper.c, 900
 xml_helper.h, 409

winconfig.h
 PACKAGE_STRING, 569
 PACKAGE_VERSION, 569
 strdup, 569
 strtok_r, 569

word
 fipa_expression_s::content_u, 71

write_documentation
 mxmldoc.c, 560

write_element
 mxmldoc.c, 560

write_flag
 mc_rwlock_s, 132

write_request
 mc_rwlock_s, 132

write_string
 mxmldoc.c, 560

writer_cond
 rwlock_s, 172

ws_cb
 mxmldoc.c, 561

X
 dham_context, 78

x
 arc4_context, 59

x509.h
 ASN1_BIT_STRING, 710
 ASN1_BMP_STRING, 710
 ASN1_BOOLEAN, 710
 ASN1_CONSTRUCTED, 711
 ASN1_CONTEXT_SPECIFIC, 711
 ASN1_IA5_STRING, 711
 ASN1_INTEGER, 711
 ASN1_NULL, 711
 ASN1_OCTET_STRING, 711
 ASN1_OID, 711
 ASN1_PRIMITIVE, 711
 ASN1_PRINTABLE_STRING, 712
 ASN1_SEQUENCE, 712

ASN1_SET, 712
ASN1_T61_STRING, 712
ASN1_UNIVERSAL_STRING, 712
ASN1_UTC_TIME, 712
ASN1_UTF8_STRING, 712

BADCERT_CN_MISMATCH, 712
BADCERT_EXPIRED, 712
BADCERT_NOT_TRUSTED, 713
BADCERT_REVOKED, 713

OID_CN, 713
OID_PKCS1, 713

OID_PKCS1_RSA, 713
OID_PKCS1_RSA_SHA, 713

OID_PKCS9, 713
OID_PKCS9_EMAIL, 713

OID_X520, 713
PEM_LINE_LENGTH, 714

PKCS9_EMAIL, 714

x509_buf, 719
x509_cert, 719
x509_free, 719
X509_ISSUER, 714

x509_name, 719
x509_node, 719

X509_OUTPUT_DER, 714
X509_OUTPUT_PEM, 714

x509_raw, 719
x509_self_test, 719

X509 SUBJECT, 714

x509_time, 719

x509parse_cert_info, 719
x509parse_crt, 719
x509parse_crtfile, 720

x509parse_dn_gets, 720
x509parse_expired, 721

x509parse_key, 721
x509parse_keyfile, 721

x509parse_verify, 722

X520_COMMON_NAME, 714
X520_COUNTRY, 714
X520_LOCALITY, 714

X520_ORG_UNIT, 714
X520_ORGANIZATION, 715

X520_STATE, 715

XYSSL_ERR ASN1_INVALID_DATA, 715
XYSSL_ERR ASN1_INVALID_LENGTH,
 715

XYSSL_ERR ASN1_LENGTH_-
 MISMATCH, 715

XYSSL_ERR ASN1_OUT_OF_DATA, 715
XYSSL_ERR ASN1_UNEXPECTED_TAG,
 715

XYSSL_ERR X509_CERT_INVALID_ALG,
 715

XYSSL_ERR_X509_CERT_INVALID_DATE, 716
 XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS, 716
 XYSSL_ERR_X509_CERT_INVALID_FORMAT, 716
 XYSSL_ERR_X509_CERT_INVALID_NAME, 716
 XYSSL_ERR_X509_CERT_INVALID_PEM, 716
 XYSSL_ERR_X509_CERT_INVALID_PUBKEY, 716
 XYSSL_ERR_X509_CERT_INVALID_SERIAL, 716
 XYSSL_ERR_X509_CERT_INVALID_SIGNATURE, 716
 XYSSL_ERR_X509_CERT_INVALID_VERSION, 716
 XYSSL_ERR_X509_CERT_SIG_MISMATCH, 717
 XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG, 717
 XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG, 717
 XYSSL_ERR_X509_CERT_UNKNOWN_VERSION, 717
 XYSSL_ERR_X509_CERT_VERIFY_FAILED, 717
 XYSSL_ERR_X509_FEATURE_UNAVAILABLE, 717
 XYSSL_ERR_X509_KEY_INVALID_ENC_IV, 717
 XYSSL_ERR_X509_KEY_INVALID_FORMAT, 717
 XYSSL_ERR_X509_KEY_INVALID_PEM, 717
 XYSSL_ERR_X509_KEY_INVALID_VERSION, 718
 XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH, 718
 XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED, 718
 XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG, 718
 XYSSL_ERR_X509_POINT_ERROR, 718
 XYSSL_ERR_X509_VALUE_TO_LENGTH, 718
 x509_buf
 x509.h, 719
 x509_cert
 x509.h, 719
 x509_des3_decrypt
 x509parse.c, 859
 x509_free

x509_get_alg
 x509parse.c, 859
 x509_get_dates
 x509parse.c, 859
 x509_get_ext
 x509parse.c, 860
 x509_get_iv
 x509parse.c, 860
 x509_get_name
 x509parse.c, 860
 x509_get_pubkey
 x509parse.c, 860
 x509_get_serial
 x509parse.c, 860
 x509_get_sig
 x509parse.c, 861
 x509_get_uid
 x509parse.c, 861
 x509_get_version
 x509parse.c, 861
 x509_hash
 x509parse.c, 861
 X509_ISSUER
 x509.h, 714
 x509_name
 x509.h, 719
 x509_node
 x509.h, 719
 X509_OUTPUT_DER
 x509.h, 714
 X509_OUTPUT_PEM
 x509.h, 714
 x509_raw
 x509.h, 719
 x509_self_test
 x509.h, 719
 x509parse.c, 861
 X509 SUBJECT
 x509.h, 714
 x509_time
 x509.h, 719
 x509parse.c
 asn1_get_bool, 858
 asn1_get_int, 858
 asn1_get_len, 858
 asn1_get_mpi, 858
 asn1_get_tag, 859
 x509_des3_decrypt, 859
 x509_free, 859
 x509_get_alg, 859
 x509_get_dates, 859
 x509_get_ext, 860

x509_get_iv, 860
x509_get_name, 860
x509_get_pubkey, 860
x509_get_serial, 860
x509_get_sig, 861
x509_get_uid, 861
x509_get_version, 861
x509_hash, 861
x509_self_test, 861
x509parse_cert_info, 862
x509parse_crt, 862
x509parse_crtfile, 862
x509parse_dn_gets, 863
x509parse_expired, 863
x509parse_key, 863
x509parse_keyfile, 864
x509parse_verify, 864
x509parse_cert_info
 x509.h, 719
 x509parse.c, 862
x509parse_crt
 x509.h, 719
 x509parse.c, 862
x509parse_crtfile
 x509.h, 720
 x509parse.c, 862
x509parse_dn_gets
 x509.h, 720
 x509parse.c, 863
x509parse_expired
 x509.h, 721
 x509parse.c, 863
x509parse_key
 x509.h, 721
 x509parse.c, 863
x509parse_keyfile
 x509.h, 721
 x509parse.c, 864
x509parse_verify
 x509.h, 722
 x509parse.c, 864
X520_COMMON_NAME
 x509.h, 714
X520_COUNTRY
 x509.h, 714
X520_LOCALITY
 x509.h, 714
X520_ORG_UNIT
 x509.h, 714
X520_ORGANIZATION
 x509.h, 715
X520_STATE
 x509.h, 715
xml_agent_root
 agent_datastate_s, 48
xml_compose.c
 agent_xml_compose, 896
 agent_xml_compose_agent_code, 896
 agent_xml_compose_agent_data, 896
 agent_xml_compose_create_row_nodes, 897
 agent_xml_compose_data, 897
 agent_xml_compose_file, 897
 agent_xml_compose_gaf_message, 897
 agent_xml_compose_home, 897
 agent_xml_compose_message, 898
 agent_xml_compose_mobile_agent, 898
 agent_xml_compose_name, 898
 agent_xml_compose_owner, 898
 agent_xml_compose_row, 898
 agent_xml_compose_task, 898
 agent_xml_compose_tasks, 899
 agent_xml_compose_wg_code, 899
xml_compose.h
 agent_xml_compose, 405
 agent_xml_compose_agent_code, 405
 agent_xml_compose_agent_data, 405
 agent_xml_compose_create_row_nodes, 406
 agent_xml_compose_data, 406
 agent_xml_compose_file, 406
 agent_xml_compose_gaf_message, 406
 agent_xml_compose_home, 406
 agent_xml_compose_message, 407
 agent_xml_compose_mobile_agent, 407
 agent_xml_compose_name, 407
 agent_xml_compose_owner, 407
 agent_xml_compose_row, 407
 agent_xml_compose_task, 407
 agent_xml_compose_tasks, 408
 agent_xml_compose_wg_code, 408
xml_find_sibling
 xml_helper.c, 900
 xml_helper.h, 409
xml_get_cdata
 xml_helper.c, 900
 xml_helper.h, 409
xml_get_child
 xml_helper.c, 900
 xml_helper.h, 409
xml_get_deep_child
 xml_helper.c, 901
 xml_helper.h, 410
xml_get_element_name
 xml_helper.c, 901
 xml_helper.h, 410
xml_get_next_element
 xml_helper.c, 901
 xml_helper.h, 410
xml_get_text

xml_helper.c, 901
 xml_helper.h, 410
xml_helper.c
 whitespace_cb, 900
 xml_find_sibling, 900
 xml_get_cdata, 900
 xml_get_child, 900
 xml_get_deep_child, 901
 xml_get_element_name, 901
 xml_get_next_element, 901
 xml_get_text, 901
 xml_new_cdata, 901
xml_helper.h
 whitespace_cb, 409
 xml_find_sibling, 409
 xml_get_cdata, 409
 xml_get_child, 409
 xml_get_deep_child, 410
 xml_get_element_name, 410
 xml_get_next_element, 410
 xml_get_text, 410
 xml_new_cdata, 410
xml_new_cdata
 xml_helper.c, 901
 xml_helper.h, 410
xml_parser.c
 _XOPEN_SOURCE, 902
 agent_return_xml_parse, 903
 agent_xml_parse, 903
 agent_xml_parse_agent_code, 903
 agent_xml_parse_agent_data, 903
 agent_xml_parse_data, 903
 agent_xml_parse_file, 903
 agent_xml_parse_fill_row_data, 904
 agent_xml_parse_home, 904
 agent_xml_parse_mobile_agent, 904
 agent_xml_parse_name, 904
 agent_xml_parse_owner, 904
 agent_xml_parse_row, 904
 agent_xml_parse_sender, 905
 agent_xml_parse_task, 905
 agent_xml_parse_tasks, 905
 agent_xml_parse_wg_code, 905
 message_xml_parse, 905
 message_xml_parse_message, 906
xml_parser.h
 agent_xml_parse, 411
 agent_xml_parse_agent_code, 411
 agent_xml_parse_agent_data, 411
 agent_xml_parse_data, 412
 agent_xml_parse_file, 412
 agent_xml_parse_fill_row_data, 412
 agent_xml_parse_home, 412
 agent_xml_parse_mobile_agent, 412
 agent_xml_parse_name, 413
 agent_xml_parse_owner, 413
 agent_xml_parse_row, 413
 agent_xml_parse_sender, 413
 agent_xml_parse_task, 413
 agent_xml_parse_tasks, 413
 agent_xml_parse_wg_code, 414
 message_xml_parse, 414
 message_xml_parse_message, 414
 STRUCT, 414
xml_payload
 message_s, 145
xml_root
 agent_datastate_s, 48
 message_s, 145
XTIME
 aes.c, 726
XYSSL_AES_C
 security/xyssl-0.9/include/xyssl/config.h, 522
XYSSL_ARC4_C
 security/xyssl-0.9/include/xyssl/config.h, 522
XYSSL_BASE64_C
 security/xyssl-0.9/include/xyssl/config.h, 522
XYSSL_BIGNUM_C
 security/xyssl-0.9/include/xyssl/config.h, 522
xyssl_ca_crt
 certs.c, 759
 certs.h, 618
XYSSL_CERTS_C
 security/xyssl-0.9/include/xyssl/config.h, 522
XYSSL_DEBUG_C
 security/xyssl-0.9/include/xyssl/config.h, 523
XYSSL_DEBUG_MSG
 security/xyssl-0.9/include/xyssl/config.h, 523
XYSSL_DES_C
 security/xyssl-0.9/include/xyssl/config.h, 523
XYSSL_DHM_C
 security/xyssl-0.9/include/xyssl/config.h, 523
XYSSL_ERR ASN1_INVALID_DATA
 x509.h, 715
XYSSL_ERR ASN1_INVALID_LENGTH
 x509.h, 715
XYSSL_ERR ASN1_LENGTH_MISMATCH
 x509.h, 715
XYSSL_ERR ASN1_OUT_OF_DATA
 x509.h, 715
XYSSL_ERR ASN1_UNEXPECTED_TAG
 x509.h, 715
XYSSL_ERR BASE64_BUFFER_TOO_SMALL
 base64.h, 597
XYSSL_ERR BASE64_INVALID_CHARACTER
 base64.h, 597
XYSSL_ERR DHM_BAD_INPUT_DATA
 dhm.h, 628

XYSSL_ERR_DHM_CALC_SECRET_FAILED dhm.h, 628	XYSSL_ERR_RSA_PUBLIC_FAILED rsa.h, 661
XYSSL_ERR_DHM_MAKE_PARAMS_FAILED dhm.h, 628	XYSSL_ERR_RSA_VERIFY_FAILED rsa.h, 661
XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED dhm.h, 628	XYSSL_ERR_SSL_BAD_HS_CERTIFICATE ssl.h, 690
XYSSL_ERR_DHM_READ_PARAMS_FAILED dhm.h, 628	XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_- REQUEST ssl.h, 690
XYSSL_ERR_DHM_READ_PUBLIC_FAILED dhm.h, 628	XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_- VERIFY ssl.h, 691
XYSSL_ERR_MPI_BAD_INPUT_DATA bignum.h, 602	XYSSL_ERR_SSL_BAD_HS_CHANGE_- CIPHER_SPEC ssl.h, 691
XYSSL_ERR_MPI_BUFFER_TOO_SMALL bignum.h, 602	XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO ssl.h, 691
XYSSL_ERR_MPI_DIVISION_BY_ZERO bignum.h, 602	XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_- EXCHANGE ssl.h, 691
XYSSL_ERR_MPI_FILE_IO_ERROR bignum.h, 602	XYSSL_ERR_SSL_BAD_HS_FINISHED ssl.h, 691
XYSSL_ERR_MPI_INVALID_CHARACTER bignum.h, 602	XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO ssl.h, 691
XYSSL_ERR_MPI_NEGATIVE_VALUE bignum.h, 602	XYSSL_ERR_SSL_BAD_HS_SERVER_- HELLO_DONE ssl.h, 691
XYSSL_ERR_MPI_NOT_ACCEPTABLE bignum.h, 602	XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_- EXCHANGE ssl.h, 691
XYSSL_ERR_NET_ACCEPT_FAILED net.h, 648	XYSSL_ERR_SSL_BAD_INPUT_DATA ssl.h, 691
XYSSL_ERR_NET_BIND_FAILED net.h, 648	XYSSL_ERR_SSL_CA_CHAIN_REQUIRED ssl.h, 692
XYSSL_ERR_NET_CONN_RESET net.h, 648	XYSSL_ERR_SSL_CERTIFICATE_REQUIRED ssl.h, 692
XYSSL_ERR_NET_CONNECT_FAILED net.h, 648	XYSSL_ERR_SSL_CERTIFICATE_TOO_- LARGE ssl.h, 692
XYSSL_ERR_NET_LISTEN_FAILED net.h, 648	XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE ssl.h, 692
XYSSL_ERR_NET_RECV_FAILED net.h, 648	XYSSL_ERR_SSL_FEATURE_UNAVAILABLE ssl.h, 692
XYSSL_ERR_NET_SEND_FAILED net.h, 648	XYSSL_ERR_SSL_INVALID_MAC ssl.h, 692
XYSSL_ERR_NET_SOCKET_FAILED net.h, 648	XYSSL_ERR_SSL_INVALID_MODULUS_SIZE ssl.h, 692
XYSSL_ERR_NET_TRY AGAIN net.h, 648	XYSSL_ERR_SSL_INVALID_RECORD ssl.h, 692
XYSSL_ERR_NET_UNKNOWN_HOST net.h, 649	XYSSL_ERR_SSL_NO_CIPHER_CHOSEN ssl.h, 693
XYSSL_ERR_RSA_BAD_INPUT_DATA rsa.h, 660	XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE ssl.h, 693
XYSSL_ERR_RSA_INVALID_PADDING rsa.h, 660	XYSSL_ERR_SSL_NO_SESSION_FOUND
XYSSL_ERR_RSA_KEY_CHECK_FAILED rsa.h, 660	
XYSSL_ERR_RSA_KEY_GEN_FAILED rsa.h, 660	
XYSSL_ERR_RSA_PRIVATE_FAILED rsa.h, 661	

ssl.h, [693](#)
XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY
 ssl.h, [693](#)
XYSSL_ERR_SSL_PEER_VERIFY_FAILED
 ssl.h, [693](#)
XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED
 ssl.h, [693](#)
XYSSL_ERR_SSL_UNEXPECTED_MESSAGE
 ssl.h, [693](#)
XYSSL_ERR_SSL_UNKNOWN_CIPHER
 ssl.h, [693](#)
XYSSL_ERR_X509_CERT_INVALID_ALG
 x509.h, [715](#)
XYSSL_ERR_X509_CERT_INVALID_DATE
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_INVALID_FORMAT
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_INVALID_NAME
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_INVALID_PEM
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_INVALID_PUBKEY
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_INVALID_SERIAL
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_INVALID_SIGNATURE
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_INVALID_VERSION
 x509.h, [716](#)
XYSSL_ERR_X509_CERT_SIG_MISMATCH
 x509.h, [717](#)
XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG
 x509.h, [717](#)
XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG
 x509.h, [717](#)
XYSSL_ERR_X509_CERT_UNKNOWN_VERSION
 x509.h, [717](#)
XYSSL_ERR_X509_CERT_VERIFY_FAILED
 x509.h, [717](#)
XYSSL_ERR_X509_FEATURE_UNAVAILABLE
 x509.h, [717](#)
XYSSL_ERR_X509_KEY_INVALID_ENC_IV
 x509.h, [717](#)
XYSSL_ERR_X509_KEY_INVALID_FORMAT
 x509.h, [717](#)
XYSSL_ERR_X509_KEY_INVALID_PEM
 x509.h, [717](#)

XYSSL_ERR_X509_KEY_INVALID_VERSION
 x509.h, [718](#)
XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH
 x509.h, [718](#)
XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED
 x509.h, [718](#)
XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG
 x509.h, [718](#)
XYSSL_ERR_X509_POINT_ERROR
 x509.h, [718](#)
XYSSL_ERR_X509_VALUE_TO_LENGTH
 x509.h, [718](#)
XYSSL_GENPRIME
 security/xyssl-0.9/include/xyssl/config.h, [523](#)
XYSSL_HAVE_ASM
 security/xyssl-0.9/include/xyssl/config.h, [523](#)
XYSSL_HAVEGE_C
 security/xyssl-0.9/include/xyssl/config.h, [523](#)
XYSSL_MD5_C
 security/xyssl-0.9/include/xyssl/config.h, [523](#)
XYSSL_NET_C
 security/xyssl-0.9/include/xyssl/config.h, [523](#)
XYSSL_PADLOCK_C
 security/xyssl-0.9/include/xyssl/config.h, [523](#)
XYSSL_RSA_C
 security/xyssl-0.9/include/xyssl/config.h, [523](#)
XYSSL_SELF_TEST
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_SHA1_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_SHA2_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_SHA4_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_SSL_CLI_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_SSL_SRV_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_SSL_TLS_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_TIMING_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_X509_PARSE_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)
XYSSL_X509_WRITE_C
 security/xyssl-0.9/include/xyssl/config.h, [524](#)

y
 arc4_context, [59](#)

year
 _x509_time, [39](#)

fipa_DateTime_s, [103](#)
ZERO
df.h, [271](#)