Linux System Call Table

The following table lists the **system calls** for the **Linux** 2.2 kernel. It could also be thought of as an API for the interface between user space and kernel space. My motivation for making this table was to make programming in assembly language easier when using only **system calls** and not the C library (for more information on this topic, go to http://www.linuxassembly.org). On the left are the numbers of the **system calls**. This number will be put in register %eax. On the right of the table are the types of values to be put into the remaining registers before calling the software interrupt 'int 0x80'. After each syscall, an integer is returned in %eax.

For convenience, links go from the "Name" column to the man page for most of the **system calls**. Links to the kernel source file where each **system** call is located are linked to in the column labelled "Source". (You can also <u>download</u> a version of this page which has links directly to the source that is installed on your **system**.) Links to definitions are provided for the parameters that are typedefs or structs.

%eax	Name	Source	%ebx	%ecx	%edx	%esx	%edi
1	<u>sys_exit</u>	kernel/exit.c	int	-	-	-	1-
2	sys fork	arch/i386/kernel/process.c	struct pt_regs	-	-	i -	i -
3	sys_read	fs/read write.c	unsigned int	char *	size t	i -	i -
4	sys write	fs/read write.c	unsigned int	const char *	size t	i-	i-
5	sys open	fs/open.c	const char *	int	int	1-	1-
6	sys_close	fs/open.c	unsigned int	-	-	<u> </u> -	<u> </u> -
7	sys_waitpid	kernel/exit.c	pid_t	unsigned int *	int	1-	Ĭ-
8	<u>sys_creat</u>	fs/open.c	const char *	int	-	1-	1-
9	<u>sys link</u>	fs/namei.c	const char *	const char *	-	-	-
10	sys_unlink	fs/namei.c	const char *	-	-	<u> </u> -	<u> </u> -
11	sys_execve	arch/i386/kernel/process.c	struct_pt_regs	-	-]-	<u> </u> -
12	sys chdir	fs/open.c	const char *	-	-	-	1-
13	<u>sys_time</u>	kernel/time.c	int *	-	-	-	[-
14	sys_mknod	fs/namei.c	const char *	int	dev_t	<u> </u> -	<u> </u> -
15	sys chmod	fs/open.c	const char *	mode t	-	-	-
16	sys lchown	fs/open.c	const char *	uid t	g <u>id t</u>	-	-
18	<u>sys_stat</u>	fs/stat.c	char *	struct old kernel stat *	-	-	-
19	<u>sys_lseek</u>	fs/read write.c	unsigned int	off t	unsigned int	-	-
20	<u>sys_getpid</u>	kernel/sched.c	-	-	-	-	-
21	<u>sys_mount</u>	fs/super.c	char *	char *	char *	-	-
22	sys_oldumount	fs/super.c	char *	-	-	_	_
23	<u>sys_setuid</u>	kernel/sys.c	<u>uid t</u>	-	-	_	-
24	<u>sys_getuid</u>	kernel/sched.c	-	-	-	-	-
25	<u>sys_stime</u>	kernel/time.c	int *	-	-	_	_
26	<u>sys_ptrace</u>	arch/i386/kernel/ptrace.c	long	long	long	long]-
27	<u>sys_alarm</u>	kernel/sched.c	unsigned int	-	-]-]-
28	sys fstat	fs/stat.c	unsigned int	struct old kernel stat	-	-	-
29	<u>sys_pause</u>	arch/i386/kernel/sys i386.c	-	-	-	-	-
30	sys_utime	fs/open.c	char *	struct utimbuf *	-	-	1-
33	sys_access	fs/open.c	const char *	int	-	-	-
34	<u>sys nice</u>	kernel/sched.c	int	-	-	-	-
36	sys_sync	fs/buffer.c	-	-	-	-	-
37	<u>sys_kill</u>	kernel/signal.c	int	int	-	-	-
38	<u>sys_rename</u>	fs/namei.c	const char *	const char *	-	-	-
39	<u>sys mkdir</u>	fs/namei.c	const char *	int	-	-	-
40	<u>sys_rmdir</u>	fs/namei.c	const char *	-	-	-	-
41	<u>sys_dup</u>	fs/fcntl.c	unsigned int	-	-	-	-
42	<u>sys_pipe</u>	arch/i386/kernel/sys i386.c	unsigned long *	-	-	-	-
43	<u>sys_times</u>	kernel/sys.c	struct tms *	-	-	-	-
45	<u>sys_brk</u>	mm/mmap.c	unsigned long	-	-	-	-
46	<u>sys_setgid</u>	kernel/sys.c	gid_t	-	-	-	-

		<u> </u>					
47	<u>sys_getgid</u>	kernel/sched.c	-	-	-	-	-
48	<u>sys_signal</u>	kernel/signal.c	int	<u>sighandler</u> t	-	-	-
49	<u>sys_geteuid</u>	kernel/sched.c	-	-	-	-	-
50	<u>sys_getegid</u>	kernel/sched.c	-	-	-	-	-
51	sys_acct	kernel/acct.c	const char *	-	-	-	-
52	<u>sys_umount</u>	fs/super.c	char *	int	-	-	-
54	sys ioctl	fs/ioctl.c	unsigned int		unsigned long	-	-
55	sys fcntl	fs/fcntl.c	unsigned int		unsigned long	-	-
57	sys_setpgid	kernel/sys.c	<u>pid_t</u>	<u>pid_t</u>	-	-	-
59	<u>sys_olduname</u>	arch/i386/kernel/sys_i386.c	struct oldold_utsname *	-	-	-	-
60	<u>sys_umask</u>	kernel/sys.c	int	-	-	-	-
61	sys_chroot	fs/open.c	const char *	-	-	-	-
62	sys_ustat	fs/super.c	dev_t	struct ustat *	-	-	-
63	sys dup2	fs/fcntl.c	unsigned int	unsigned int	-	-	-
64	sys getppid	kernel/sched.c	-	-	-	-	-
65	<u>sys_getpgrp</u>	kernel/sys.c	-	-	-	-	-
66	sys setsid	kernel/sys.c	-	-	-	-	-
67	sys_sigaction	arch/i386/kernel/signal.c	int	const struct old sigaction *	struct old sigaction *	-	-
68	<u>sys_sgetmask</u>	kernel/signal.c	-	-	-	-	-
69	<u>sys ssetmask</u>	kernel/signal.c	int	-	-	-	-
70	<u>sys_setreuid</u>	kernel/sys.c	uid t	uid t	-	-	-
71	<u>sys_setregid</u>	kernel/sys.c	g <u>id t</u>	gid_t	-	-	-
72	<u>sys_sigsuspend</u>	arch/i386/kernel/signal.c	int	int	old sigset t	-	-
73	sys sigpending	kernel/signal.c	old sigset t*	-	-	-	-
74	sys sethostname	kernel/sys.c	char *	int	-	-	-
75	<u>sys setrlimit</u>	kernel/sys.c	unsigned int	struct rlimit *	-	-	-
	sys_getrlimit	kernel/sys.c	unsigned int	struct rlimit *	_	-	_
77	sys_getrusage	kernel/sys.c	int	struct rusage *	_	-	-
78	sys_gettimeofday	kernel/time.c	struct timeval *	struct timezone *	_	-	_
79	sys settimeofday	kernel/time.c	struct timeval *	struct timezone *	_	-	-
80	sys getgroups	kernel/sys.c	int	gid t*	_	_	_
81	sys setgroups	kernel/sys.c	int	gid t*	-	-	-
82	old_select	arch/i386/kernel/sys_i386.c	struct sel arg struct *	-	-	-	-
83	<u>sys_symlink</u>	fs/namei.c	const char *	const char *	-	-	-
84	sys Istat	fs/stat.c	char *	struct old kernel stat *	-	-	-
85	sys_readlink	fs/stat.c	const char *	char *	int	-	-
86	sys_uselib	fs/exec.c	const char *	-	-	-	-
87	<u>sys swapon</u>	mm/swapfile.c	const char *	int	-	-	-
88	sys_reboot	kernel/sys.c	int	int	int	void *	-
89	old_readdir	fs/readdir.c	unsigned int	void *	unsigned int	-	-
90	old_mmap	arch/i386/kernel/sys_i386.c	struct mmap arg struct	-	-	-	-
91	<u>sys_munmap</u>	mm/mmap.c	unsigned long	size_t	-	-	-
92	sys_truncate	fs/open.c	const char *	unsigned long	-	-	-
93	sys ftruncate	fs/open.c	unsigned int	unsigned long	-	-	-
94	sys_fchmod	fs/open.c	unsigned int	mode_t	-	-	-
95	sys_fchown	fs/open.c	unsigned int		gid_t	-	-
96	sys getpriority	kernel/sys.c	int	int	-	-	-

97	sys_setpriority	kernel/sys.c	int	int	int	-	-
99	sys_statfs	fs/open.c	const char *	struct statfs *	-	-	-
100	sys fstatfs	fs/open.c	unsigned int	struct statfs *	-	-	-
101	sys_ioperm	arch/i386/kernel/ioport.c	unsigned long	unsigned long	int	-	-
102	sys socketcall	net/socket.c	int	unsigned long *	-	-	-
103	sys_syslog	kernel/printk.c	int	char *	int	-	-
104	sys_setitimer	kernel/itimer.c	int	struct itimerval *	struct itimerval *	-	-
105	sys getitimer	kernel/itimer.c	int	struct itimerval *	-	-	-
106	sys_newstat	fs/stat.c	char *	struct stat *	-	-	-
107	sys_newlstat	fs/stat.c	char *	struct stat *	-	-	-
108	sys_newfstat	fs/stat.c	unsigned int	struct stat *	-	-	-
109	sys uname	arch/i386/kernel/sys_i386.c	struct old utsname *	-	-	-	-
110	sys iopl	arch/i386/kernel/ioport.c	unsigned long	-	-	-	-
111	sys vhangup	fs/open.c	-	-	-	-	-
112	sys idle	arch/i386/kernel/process.c	_	-	_	_	_
113	sys_vm86old	arch/i386/kernel/vm86.c	unsigned long	struct vm86plus struct *	-	-	-
114	sys wait4	kernel/exit.c	<u>pid t</u>	unsigned long *	int options	struct rusage *	-
115	sys_swapoff	mm/swapfile.c	const char *	-	-	_	_
116	sys sysinfo	kernel/info.c	struct sysinfo *	-	-	-	-
117	sys_ipc(*Note)	arch/i386/kernel/sys i386.c	uint	int	int	int	void *
118	sys_fsync	fs/buffer.c	unsigned int	-	-	-	-
119	sys sigreturn	arch/i386/kernel/signal.c	unsigned long	-	-	-	-
120	sys clone	arch/i386/kernel/process.c	struct pt regs	-	-	-	_
121	sys setdomainname	kernel/sys.c	char *	int	-	-	-
122	sys_newuname	kernel/sys.c	struct new utsname *	-	_	-	-
123	sys modify ldt	arch/i386/kernel/ldt.c	int	void *	unsigned long	-	-
124	sys_adjtimex	kernel/time.c	struct timex *	-	-	-	-
125	sys mprotect	mm/mprotect.c	unsigned long	size t	unsigned long	-	-
126	sys sigprocmask	kernel/signal.c	int	old sigset t*	old_sigset_t *	-	_
127	sys_create_module	kernel/module.c	const char *	size_t	-	-	-
128	sys init module	kernel/module.c	const char *	struct module *	-	-	-
129	sys delete module	kernel/module.c	const char *	-	-	-	-
130	sys get kernel syms	kernel/module.c	struct kernel_sym *	-	-	-	-
131	sys_quotactl	fs/dquot.c	int	const char *	int	caddr_t	-
132	sys_getpgid	kernel/sys.c	pid_t	-	-	-	-
133	sys fchdir	fs/open.c	unsigned int	-	-	-	-
134	sys bdflush	fs/buffer.c	int	long	-	-	-
135	sys sysfs	fs/super.c	int	unsigned long	unsigned long	-	-
136	<u>sys_personality</u>	kernel/exec_domain.c	unsigned long	-	-	-	-
138	sys setfsuid	kernel/sys.c	uid t	-	-	-	-
139	sys setfsgid	kernel/sys.c	gid t	-	-	-	-
140	sys llseek	fs/read_write.c	unsigned int	unsigned long	unsigned long	loff_t*	unsigned int
141	sys_getdents	fs/readdir.c	unsigned int	void *	unsigned int	-	-
142	sys_select	fs/select.c	int	fd_set *	fd_set *	fd_set *	struct timeval *

143	sys flock	fs/locks.c	unsigned int	unsigned int	 _	L I	L I
144	sys msync	mm/filemap.c		size t	int	_	_
145	sys_readv	fs/read_write.c	unsigned long	const struct iovec		-	-
146	sys_writev	fs/read_write.c	unsigned long	const struct iovec	unsigned long	-	-
147	sys_getsid	kernel/sys.c	pid t	_	-	-	-
148	sys fdatasync	fs/buffer.c	unsigned int	_	-	-	-
149	sys_sysctl	kernel/sysctl.c	struct sysctl args *	-	-	-	-
150	sys mlock	mm/mlock.c	unsigned long	size t	-	-	-
151	sys munlock	mm/mlock.c	unsigned long	size t	-	-	-
152	sys mlockall	mm/mlock.c	int	-	-	-	-
153	sys munlockall	mm/mlock.c	-	-	-	-	-
154	sys sched setparam	kernel/sched.c	<u>pid t</u>	struct sched_param *	-	-	-
155	sys sched getparam	kernel/sched.c	<u>pid t</u>	struct sched param *	-	-	-
156	sys sched setscheduler	kernel/sched.c	<u>pid t</u>	int	struct sched param *	-	-
157	sys sched getscheduler	kernel/sched.c	<u>pid_t</u>	-	-	-	-
158	sys_sched_yield	kernel/sched.c	-	-	-	-	-
159	sys sched get priority max	kernel/sched.c	int	-	-	-	-
160		kernel/sched.c	int	-	-	-	-
161	sys sched rr get interval	kernel/sched.c	pid t	struct timespec *	-	-	-
162	sys nanosleep	kernel/sched.c	struct timespec *	struct timespec *	-	-	-
163	sys mremap	mm/mremap.c	unsigned long	unsigned long	unsigned long	unsigned long	-
164	sys_setresuid	kernel/sys.c	uid_t	uid_t	uid_t	-	-
165	<u>sys_getresuid</u>	kernel/sys.c	uid t*	uid t*	uid t*	-	-
166	sys_vm86	arch/i386/kernel/vm86.c	struct vm86 struct	-	-	-	-
167	sys_query_module	kernel/module.c	const char *	int	char *	<u>size_t</u>	size_t *
168	sys_poll	<u>fs/select.c</u>	struct pollfd *	unsigned int	long	-	-
169	sys nfsservctl	<u>fs/filesystems.c</u>	int	void *	void *	-	-
170	<u>sys_setresgid</u>	kernel/sys.c	g <u>id</u> t	g <u>id</u> t	g <u>id</u> t	-	-
171	sys_getresgid	kernel/sys.c	gid_t *	g <u>id_t *</u>	gid t*	-	-
172	sys_prctl	kernel/sys.c	int	unsigned long	unsigned long	unsigned long	unsigned long
173	sys_rt_sigreturn	arch/i386/kernel/signal.c	unsigned long	-	-		-
174	sys_rt_sigaction	kernel/signal.c	int	const struct sigaction *	struct sigaction *	size_t	-
175	sys_rt_sigprocmask	kernel/signal.c	int	sigset t*	sigset t*	<u>size t</u>	-
176	sys_rt_sigpending	kernel/signal.c	sigset t*	<u>size_t</u>	-		-
177	sys_rt_sigtimedwait	kernel/signal.c	const sigset_t *	siginfo_t *	const struct timespec *	size_t	-
178	sys_rt_sigqueueinfo	<u>kernel/signal.c</u>	int	int	<u>siginfo_t *</u>	-	-
179	sys_rt_sigsuspend	arch/i386/kernel/signal.c	sigset_t *	<u>size_t</u>	-	-	-
180	<u>sys_pread</u>	fs/read_write.c	unsigned int	char *	<u>size t</u>	<u>loff_t</u>	-
181	<u>sys_pwrite</u>	fs/read_write.c	unsigned int	const char *	<u>size_t</u>	<u>loff_t</u>	-
182	sys_chown	<u>fs/open.c</u>	const char *	<u>uid_t</u>	g <u>id</u> t	-	-
183	sys_getcwd	fs/dcache.c	char *	unsigned long	-		-
184	<u>sys_capget</u>	kernel/capability.c	<u>cap user header t</u>	<u>cap user data t</u>	-	-	
185	sys_capset	kernel/capability.c	<u>cap_user_header_t</u>	const cap user data t	-	-	-
186	sys_sigaltstack	arch/i386/kernel/signal.c	const stack_t *	stack_t *	-	-	-
187	sys_sendfile	mm/filemap.c	int	int	off_t*	size_t	-

190	sys vfork	arch/i386/kernel/process.c	struct pt_regs	-	_	_	_
130	Sys VIOIK	arch/1300/Reffiel/process.c	struct pt regs				

Note for sys_ipc (117): this syscall takes six arguments, so it can't fit into the five registers %ebx - %edi; the last parameter (not shown) is of type 'long'. This syscall requires a special call method where a pointer is put in %ebx which points to an array containing the six arguments.

System Call Numbers

For the numbers of the syscalls, look in arch/i386/kernel/entry.5 for sys_call_table. The syscall numbers are offsets into that table. Several spots in the table are occupied by the syscall sys_ni_syscall. This is a placeholder that either replaces an obsolete syscall or reserves a spot for future syscalls.

Incidentally, the **system calls** are called from the function **system_call** in the same file; in particular, they are called with the assembly instruction 'call *SYMBOL_NAME(sys_call_table)(,%eax,4)'. The part '*SYMBOL_NAME(sys_call_table)' just gets replaced by a symbol name in **sys_call_table**. **SYMBOL_NAME** is a macro defined in include/linux/linkage.h, and it just replaces itself with its argument.

Typedefs

Here are the typedef declarations in the prototypes above:

atomic_t	<u>include/asm/atomic.h</u> : #ifdefSMP
	typedef struct { volatile int counter; } atomic_t;
	#else
	typedef struct { int counter; } atomic_t;
	#endif
caddr_t	include/asm/posix_types.h:typedef char *kernel_caddr_t;
cadai_t	include/linux/types.h:typedefkernel_caddr_t caddr_t;
can user header t	include/ linux /capability.h:
cup_user_neuder_e	typedef structuser_cap_header_struct {
	<u>u32</u> version;
	int pid;
	} *cap_user_header_t;
cap_user_data_t	include/ linux /capability.h:
	typedef structuser_cap_data_struct {
	<u>u32</u> effective;
	<u>u32</u> permitted;
	<u>u32</u> inheritable;
	} *cap_user_data_t;
clock_t	<u>include/asm/posix_types.h</u> :typedef longkernel_clock_t;
	<u>include/linux/types.h</u> :typedefkernel_clock_t clock_t;
dev_t	<u>include/asm/posix_types.h</u> :typedef unsigned shortkernel_dev_t;
	<u>include/linux/types.h</u> :typedefkernel_dev_t dev_t;
fd_set	include/ linux /posix_types.h
	#defineFD_SETSIZE 1024
	#defineNFDBITS (8 * sizeof(unsigned long))
	#defineFDSET_LONGS (FD_SETSIZE/NFDBITS)
	(==>FDSET_LONGS == 32)
	typedef struct {
1	
	unsigned long fds_bits [FDSET_LONGS];
	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set;
gid t	unsigned long fds_bits [FDSET_LONGS]; kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set;
gid_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t;
	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t;
kernel_daddr_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t;
	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h:
kernel_daddr_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h:typedef intkernel_daddr_t;
kernel_daddr_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h: typedef struct { intval[2];
kernel_daddr_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h:typedef intkernel_daddr_t;
kernel_daddr_t kernel_fsid_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h: typedef struct { intval[2]; }kernel_fsid_t;
kernel_daddr_tkernel_fsid_tkernel_ino_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h: typedef struct { intval[2]; }kernel_fsid_t; include/asm/posix_types.h:typedef unsigned longkernel_ino_t;
kernel_daddr_tkernel_fsid_t kernel_ino_tkernel_size_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h: typedef struct { intval[2]; }kernel_fsid_t; include/asm/posix_types.h:typedef unsigned longkernel_ino_t; include/asm/posix_types.h:typedef unsigned intkernel_size_t;
kernel_daddr_tkernel_fsid_tkernel_ino_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h:typedef intkernel_daddr_t; intval[2]; }kernel_fsid_t; include/asm/posix_types.h:typedef unsigned longkernel_ino_t; include/asm/posix_types.h:typedef unsigned intkernel_size_t; include/asm/posix_types.h:typedef long longkernel_loff_t;
kernel_daddr_tkernel_fsid_t kernel_ino_tkernel_size_t	unsigned long fds_bits [FDSET_LONGS]; }kernel_fd_set; include/linux/types.h:typedefkernel_fd_set fd_set; include/asm/posix_types.h:typedef unsigned shortkernel_gid_t; include/linux/types.h:typedefkernel_gid_t gid_t; include/asm/posix_types.h:typedef intkernel_daddr_t; include/asm/posix_types.h:typedef intkernel_daddr_t; typedef struct { intval[2]; }kernel_fsid_t; include/asm/posix_types.h:typedef unsigned longkernel_ino_t; include/asm/posix_types.h:typedef unsigned intkernel_size_t;

```
include/asm/posix_types.h:typedef unsigned short __kernel_mode_t;
  mode_t
                 include/linux/types.h:typedef __kernel_mode_t mode_t;
   off_t
                 <u>include/asm/posix_types.h</u>:typedef long __kernel_off_t; <u>include/linux/types.h</u>:typedef
                                                                                                          _kernel_off_t off_t;
old_sigset_t
                 include/asm/signal.h:typedef unsigned long old_sigset_t;
   pid_t
                 include/asm/posix types.h:typedef int __kernel_pid_t;
                 include/linux/types.h:typedef __kernel_pid_t pid_t;
_sighandler_t
                 include/asm/signal.h:typedef void (*__sighandler_t)(int);
 siginfo_t
                 include/asm/siginfo.h:
                 #define SI_MAX_SIZE 128
                 #define SI_PAD_SIZE ((SI_MAX_SIZE/sizeof(int)) - 3)
                 (==> SI_PAD_SIZE == 29)
                 typedef struct siginfo {
                    int si_signo;
                    int si_errno;
                    int si_code;
                    union {
                       int _pad[SI_PAD_SIZE];
                       /* kill() */
                       struct {
                          pid_t _pid; /* sender's pid */
                          uid t _uid; /* sender's uid */
                       } _kill;
                       /* POSIX.1b timers */
                       struct {
                          unsigned int _timer1;
                          unsigned int _timer2;
                       } _timer;
                       /* POSIX.1b signals */
                       struct {
                          pid_t _pid; /* sender's pid */
                          uid t _uid; /* sender's uid */
                          sigval_t _sigval;
                       } _rt;
                       /* SIGCHLD */
                       struct {
                          pid t _pid; /* which child */
                          uid_t_uid; /* sender's uid */
                          int _status; /* exit code */
                          clock_t _utime;
                          clock t stime;
                       } _sigchld;
                       /* SIGILL, SIGFPE, SIGSEGV, SIGBUS */
                          void *_addr; /* faulting insn/memory ref. */
                       } _sigfault;
                       /* SIGPOLL */
                       struct {
                          int _band; /* POLL_IN, POLL_OUT, POLL_MSG */
                          int fd;
                       } _sigpoll;
                    } sifields;
                 } siginfo_t;
                 include/asm/signal.h:typedef unsigned long sigset_t;
  sigset_t
   size_t
                 include/asm/posix_types.h:typedef unsigned int __kernel_size_t;
                 include/linux/types.h:typedef __kernel_size_t size_t;
                 include/asm/posix_types.h:typedef int __kernel_ssize_t;
  ssize_t
                 include/linux/types.h:typedef __kernel_ssize_t ssize_t;
  stack_t
                 include/asm/signal.h:
                 typedef struct sigaltstack {
                    void *ss_sp;
                    int ss_flags;
```

	size_t ss_size; } stack_t;
suseconds_t	<pre>include/asm/posix_types.h:typedef longkernel_suseconds_t; include/linux/types.h:typedefkernel_suseconds_t suseconds_t;</pre>
time_t	<pre>include/asm/posix_types.h:typedef longkernel_time_t; include/linux/types.h:typedefkernel_time_t;</pre>
uid_t	<pre>include/asm/posix_types.h:typedef unsigned shortkernel_uid_t; include/linux/types.h:typedefkernel_uid_t uid_t;</pre>
uint	include/linux/types.h:typedef unsigned int uint;
u32	include/asm/types.h:typedef unsigned intu32;

Structs

Here are the struct declarations for the table at the top:

<u> </u>	
exception_table_entry	<u>include/linux/module.h</u> :
	struct exception_table_entry {
	unsigned long insn, fixup;
	};
iovec	include/linux/uio.h:
-57.55	struct iovec {
	void *iov_base;
	<u>kernel size t</u> iov_len; };
itimerval	include/linux/time.h:
lulliervai	struct itimerval {
	struct timerval { struct timeval it_interval; /* timer interval */
	struct timeval it_value; /* current value */
	<u>};</u>
kernel_sym	include/linux/module.h:
	struct kernel_sym {
	unsigned long value;
	char name[60];
	 } ;
mmap_arg_struct	arch/i386/kernel/sys_i386.c:
1- 3-	struct mmap_arg_struct {
	unsigned long addr;
	unsigned long len;
	unsigned long prot;
	unsigned long flags;
	unsigned long fd;
	unsigned long offset;
	};
module	include/linux/module.h:
inounc	struct module {
	unsigned long size_of_struct; /* sizeof(module) */
	struct module *next;
	const char *name;
	· · · · · · · · · · · · · · · · · · ·
	unsigned long size; union {
	atomic_t usecount;
	long pad;
	} uc;
	unsigned long flags; /* AUTOCLEAN et al */
	unsigned ndose
	unsigned ndeps;
	struct module_symbol *syms;
	struct module ref *deps;
	struct module ref "deps; struct module ref *refs;
	int (*init)(void);
	void (*cleanup)(void);
	const <u>struct exception table entry</u> *ex_table_start; const <u>struct exception table entry</u> *ex_table_end;
	u consistruct exception table entry *ex table end:
	/* Members past this point are extensions to the basic
	/* Members past this point are extensions to the basic module support and are optional. Use mod_opt_member()
	/* Members past this point are extensions to the basic

```
const struct module persist *persist_start;
                        const struct module persist *persist_end;
                        int (*can_unload)(void);
module_persist
                     include/linux/module.h:
                     struct module_persist; /* yes, it's empty */
                     include/linux/module.h:
  module_ref
                     struct module ref {
                        struct module *dep; /* "parent" pointer */
                        struct module *ref; /* "child" pointer */
                        struct module ref *next ref;
module_symbol
                     include/linux/module.h:
                     struct module symbol {
                        unsigned long value;
                        const char *name;
                     include/linux/utsname.h:
 new_utsname
                     struct new_utsname {
                        char sysname[65];
                        char nodename[65];
                        char release[65];
                        char version[65];
                        char machine[65];
                        char domainname[65];
 _old_kernel_stat
                     include/asm/stat.h:
                     struct __old_kernel_stat {
                        unsigned short st_dev;
                        unsigned short st_ino;
                        unsigned short st_mode;
                        unsigned short st_nlink;
                        unsigned short st_uid;
                        unsigned short st_gid;
                        unsigned short st_rdev;
                        unsigned long st_size;
                        unsigned long st_atime;
                        unsigned long st_mtime;
                        unsigned long st_ctime;
oldold_utsname
                     include/linux/utsname.h:
                     struct oldold_utsname {
                        char sysname[9];
                        char nodename[9];
                        char release[9];
                        char version[9];
                        char machine[9];
                     include/asm/signal.h:
 old_sigaction
                     struct old_sigaction {
                          sighandler t sa handler;
                        old sigset t sa_mask;
                        unsigned long sa_flags;
                        void (*sa_restorer)(void);
 old_utsname
                     include/linux/utsname.h:
                     struct old utsname {
                        char sysname[65];
                        char nodename[65];
                        char release[65];
                        char version[65];
                        char machine[65];
     pollfd
                     include/asm/poll.h:
                     struct pollfd {
                        int fd;
                        short events;
                        short revents;
```

```
include/asm/ptrace.h:
     pt_regs
                       struct pt_regs {
                          long ebx;
                          long ecx;
                          long edx;
                          long esi;
                          long edi;
                          long ebp;
                          long eax;
                          int xds;
                          int xes;
                          long orig_eax;
                          long eip;
                          int xcs;
                          long eflags;
                          long esp;
                          int xss;
revectored_struct
                       include/asm/vm86.h:
                       struct revectored_struct {
                          unsigned long __map[8];
      rlimit
                       include/linux/resource.h:
                       struct rlimit {
                          long rlim_cur;
                          long rlim_max;
                       include/linux/resource.h:
     rusage
                       struct rusage {
                          struct timeval ru_utime; /* user time used */
                          struct timeval ru stime; /* system time used */
                          long ru maxrss; /* maximum resident set size */
                          long ru_ixrss; /* integral shared memory size */
                          long ru_idrss; /* integral unshared data size */
                          long ru_isrss; /* integral unshared stack size */
                          long ru_minflt; /* page reclaims */
                          long ru_majflt; /* page faults */
long ru_nswap; /* swaps */
long ru_inblock; /* block input operations */
                          long ru_oublock; /* block output operations */
                          long ru_msgsnd; /* messages sent */
                          long ru_msgrcv; /* messages received */
                          long ru_nsignals; /* signals received */
                          long ru_nvcsw; /* voluntary context switches */
                          long ru_nivcsw; /* involuntary " */
  sched_param
                       include/linux/sched.h:
                       struct sched_param {
                          int sched_priority;
                       }:
                       arch/i386/kernel/sys_i386.c:
 sel_arg_struct
                       struct sel_arg_struct {
                          unsigned long n;
                          fd set *inp, *outp, *exp;
                          struct timeval *tvp;
                       include/asm/signal.h:
    sigaction
                       struct sigaction {
                            <u>sighandler</u> t sa_handler;
                          unsigned long sa_flags;
                          void (*sa_restorer)(void);
                          sigset t sa_mask; /* mask last for extensibility */
                       include/asm/stat.h:
       stat
                       struct stat {
                          unsigned short st_dev;
                          unsigned short __pad1;
                          unsigned long st_ino;
                          unsigned short st_mode;
                          unsigned short st_nlink;
```

```
unsigned short st uid;
                     unsigned short st_gid;
                     unsigned short st_rdev;
                     unsigned short __pad2;
                     unsigned long st_size;
                     unsigned long st_blksize;
                     unsigned long st blocks;
                     unsigned long st_atime;
                     unsigned long __unused1;
                     unsigned long st_mtime;
                     unsigned long __unused2;
                     unsigned long st_ctime;
                     unsigned long __unused3;
                     unsigned long __unused4;
                     unsigned long __unused5;
  statfs
                  include/asm/statfs.h:
                  struct statfs {
                     long f_type;
                     long f_bsize;
                     long f_blocks;
                     long f_bfree;
                     long f_bavail;
                     long f_files;
                     long f_ffree;
                       kernel fsid t f_fsid;
                     long f_namelen;
                     long f_spare[6];
_sysctl_args
                  include/linux/sysctl.h
                  struct __sysctl_args {
  int *name;
                     int nlen;
                     void *oldval;
                     size t *oldlenp;
                     void *newval;
                     size t newlen;
                     unsigned long __unused[4];
                  include/linux/kernel.h:
 sysinfo
                  struct sysinfo {
                     long uptime; /* Seconds since boot */
                     unsigned long loads[3]; /* 1, 5, and 15 minute load averages */
                     unsigned long totalram; /* Total usable main memory size */
                     unsigned long freeram; /* Available memory size */
                     unsigned long sharedram; /* Amount of shared memory */
                     unsigned long bufferram; /* Memory used by buffers */
                     unsigned long totalswap; /* Total swap space size */
                     unsigned long freeswap; /* swap space still available */
                     unsigned short procs; /* Number of current processes */
                     char _f[22]; /* Pads structure to 64 bytes */
  timex
                  include/linux/timex.h:
                  struct timex {
                     unsigned int modes; /* mode selector */
                     long offset; /* time offset (usec) */
                     long freq; /* frequency offset (scaled ppm) */
                     long maxerror; /* maximum error (usec) */
                     long esterror; /* estimated error (usec) */
                     int status; /* clock command/status */
                     long constant; /* pll time constant */
                     long precision; /* clock precision (usec) (read only) */
                     long tolerance; /* clock frequency tolerance (ppm)
                      * (read only)
                     struct timeval time; /* (read only) */
                     long tick; /* (modified) usecs between clock ticks */
                     long ppsfreq; /* pps frequency (scaled ppm) (ro) */
                     long jitter; /* pps jitter (us) (ro) */
                     int shift; /* interval duration (s) (shift) (ro) */
                     long stabil; /* pps stability (scaled ppm) (ro) */
                     long jitcnt; /* jitter limit exceeded (ro) */
```

```
long calcnt; /* calibration intervals (ro) */
                           long errcnt; /* calibration errors (ro) */
                           long stbcnt; /* stability limit exceeded (ro) */
                           int:32; int:32; int:32;
                           int:32; int:32; int:32; int:32;
                           int:32; int:32; int:32;
                        include/linux/time.h:
      timespec
                        struct timespec {
                           time t tv_sec; /* seconds */
                           long tv_nsec; /* nanoseconds */
                        include/linux/time.h:
       timeval
                        struct timeval {
                           time t tv_sec; /* seconds */
                           suseconds t tv_usec; /* microseconds */
                        };
                        include/linux/time.h:
      timezone
                        struct timezone {
                           int tz_minuteswest; /* minutes west of Greenwich */
                           int tz_dsttime; /* type of dst correction */
                        include/linux/times.h
         tms
                        struct tms {
                           clock t tms_utime;
                           clock t tms stime;
                           clock t tms_cutime;
                           clock t tms_cstime;
        ustat
                        include/linux/types.h:
                        struct ustat {
                             <u>kernel_daddr_t</u> f_tfree;
                             <u>kernel_ino_t</u> f_tinode;
                           char f_fname[6];
                           char f_fpack[6];
       utimbuf
                        include/linux/utime.h:
                        struct utimbuf {
                           time_t actime;
                           time t modtime;
vm86plus_info_struct | include/asm/vm86.h:
                        struct vm86plus info struct {
                           unsigned long force return for pic:1;
                           unsigned long vm86dbg_active:1;
                           unsigned long vm86dbg_TFpendig:1;
                           unsigned long unused:28;
                           unsigned long is vm86pus:1;
                           unsigned char vm86dbg_intxxtab[32];
                        include/asm/vm86.h:
  vm86plus_struct
                        struct vm86plus_struct {
                           struct vm86 regs regs;
                           unsigned long flags;
                           unsigned long screen_bitmap;
                           unsigned long cpu_type;
                           struct revectored struct int revectored;
                           struct revectored struct int21_revectored;
                           struct vm86plus info struct vm86plus;
                        include/asm/vm86.h:
     vm86_regs
                        struct vm86_regs {
                        /* normal regs, with special meaning for the segment descriptors.. */
                           long ebx;
                           long ecx;
                           long edx;
                           long esi;
                           long edi;
```

```
long ebp;
                            long eax;
                            long __null_ds;
long __null_es;
long __null_fs;
long __null_gs;
                            long orig_eax;
                            long eip;
                            unsigned short cs, __csh;
                            long eflags;
                            long esp;
                            unsigned short ss, __ssh;
                           these are specific to v86 mode: */
                            unsigned short es, __esh;
unsigned short ds, __dsh;
unsigned short fs, __fsh;
                            unsigned short gs, __gsh;
                        include/asm/vm86.h:
vm86_struct
                        struct vm86_struct {
                            struct vm86 regs regs; unsigned long flags;
                            unsigned long screen_bitmap;
                            unsigned long cpu_type;
                            struct revectored struct int_revectored;
                            struct revectored struct int21_revectored;
```