

General Information

Date: Wed Mar 6 13:01:03 2019
Version: 2018.3 (Build 2405991 on Thu Dec 06 23:56:15 MST 2018)
Project: AES_Decrypt
Solution: solution1
Product family: zynq
Target device: xc7z020clg400-1

Performance Estimates

Timing (ns)

Summary

Clock	Target	Estimated	Uncertainty
ap_clk	10.00	9.441	1.25

Latency (clock cycles)

Summary

Latency		Interval		Type
min	max	min	max	
92	92	16	16	function

Detail

Instance

Instance	Module	Latency		Interval		Type
		min	max	min	max	
grp_AddRoundKey_fu_1032	AddRoundKey	1	1	1	1	function
grp_InvMixColumns_fu_1056	InvMixColumns	1	1	1	1	function
grp_InvSubBytes_fu_1078	InvSubBytes	1	1	1	1	function
grp_InvShiftRows_fu_1100	InvShiftRows	0	0	1	1	function

Loop

N/A

Utilization Estimates

Summary

Name	BRAM_18K	DSP48E	FF	LUT
DSP	-	-	-	-
Expression	-	-	0	638
FIFO	-	-	-	-
Instance	60	-	354	3621
Memory	-	-	-	-
Multiplexer	-	-	-	1797
Register	0	-	2392	480
Total	60	0	2746	6536
Available	280	220	106400	53200
Utilization (%)	21	0	2	12

Detail

Instance

Instance	Module	BRAM_18K	DSP48E	FF	LUT
AES_Decrypt_Decipher_s_axi_U	AES_Decrypt_Decipher_s_axi	4	0	218	212
grp_AddRoundKey_fu_1032	AddRoundKey	16	0	132	3013
grp_InvMixColumns_fu_1056	InvMixColumns	32	0	2	390
grp_InvShiftRows_fu_1100	InvShiftRows	0	0	0	0
grp_InvSubBytes_fu_1078	InvSubBytes	8	0	2	6
Total	5	60	0	354	3621

DSP48

N/A

Memory

N/A

FIFO

N/A

Expression

Variable Name	Operation	DSP48E	FF	LUT	Bitwidth P0	Bitwidth P1
tmp_1_fu_1521_p2	+	0	0	23	16	2
tmp_76_10_fu_1656_p2	+	0	0	23	16	5
tmp_76_11_fu_1661_p2	+	0	0	23	16	5
tmp_76_12_fu_1666_p2	+	0	0	23	16	5
tmp_76_1_fu_1541_p2	+	0	0	23	16	3
tmp_76_2_fu_1611_p2	+	0	0	23	16	3
tmp_76_3_fu_1616_p2	+	0	0	23	16	4
tmp_76_4_fu_1621_p2	+	0	0	23	16	4
tmp_76_5_fu_1626_p2	+	0	0	23	16	4
tmp_76_6_fu_1631_p2	+	0	0	23	16	4
tmp_76_7_fu_1636_p2	+	0	0	23	16	5
tmp_76_8_fu_1641_p2	+	0	0	23	16	5
tmp_76_9_fu_1646_p2	+	0	0	23	16	5
tmp_76_s_fu_1651_p2	+	0	0	23	16	5
tmp_s_fu_1529_p2	+	0	0	24	17	2
ap_block_pp0_stage0_11001	and	0	0	2	1	1
ap_predicate_op1016_call_state68_state67	and	0	0	2	1	1
ap_predicate_op1035_call_state69_state68	and	0	0	2	1	1
ap_predicate_op1089_call_state72_state71	and	0	0	2	1	1
ap_predicate_op1108_call_state73_state72	and	0	0	2	1	1
ap_predicate_op1162_call_state76_state75	and	0	0	2	1	1
ap_predicate_op1181_call_state77_state76	and	0	0	2	1	1
ap_predicate_op305_call_state26_state25	and	0	0	2	1	1
ap_predicate_op340_call_state27_state26	and	0	0	2	1	1
ap_predicate_op378_call_state30_state29	and	0	0	2	1	1
ap_predicate_op451_call_state34_state33	and	0	0	2	1	1
ap_predicate_op524_call_state39_state38	and	0	0	2	1	1
ap_predicate_op597_call_state43_state42	and	0	0	2	1	1
ap_predicate_op670_call_state47_state46	and	0	0	2	1	1
ap_predicate_op743_call_state52_state51	and	0	0	2	1	1

ap_predicate_op797_call_state55_state54	and	0	0	2	1	1
ap_predicate_op816_call_state56_state55	and	0	0	2	1	1
ap_predicate_op870_call_state59_state58	and	0	0	2	1	1
ap_predicate_op889_call_state60_state59	and	0	0	2	1	1
tmp_2_fu_1535_p2	icmp	0	0	18	17	1
tmp_78_10_fu_1596_p2	icmp	0	0	18	17	4
tmp_78_11_fu_1601_p2	icmp	0	0	18	17	4
tmp_78_12_fu_1606_p2	icmp	0	0	18	17	4
tmp_78_1_fu_1546_p2	icmp	0	0	18	17	1
tmp_78_2_fu_1551_p2	icmp	0	0	18	17	2
tmp_78_3_fu_1556_p2	icmp	0	0	18	17	2
tmp_78_4_fu_1561_p2	icmp	0	0	18	17	3
tmp_78_5_fu_1566_p2	icmp	0	0	18	17	3
tmp_78_6_fu_1571_p2	icmp	0	0	18	17	3
tmp_78_7_fu_1576_p2	icmp	0	0	18	17	3
tmp_78_8_fu_1581_p2	icmp	0	0	18	17	4
tmp_78_9_fu_1586_p2	icmp	0	0	18	17	4
tmp_78_s_fu_1591_p2	icmp	0	0	18	17	4
ap_enable_pp0	xor	0	0	2	1	2
Total	49	0	0	638	499	124

□ Multiplexer

Name	LUT
ap_NS_fsm	85
ap_enable_reg_pp0_iter0	9
ap_enable_reg_pp0_iter5	9
ap_phi_mux_state_phi_fu_445_p30	9
ap_phi_reg_pp0_iter1_state_10_63_reg_663	9
ap_phi_reg_pp0_iter1_state_11_62_reg_626	9
ap_phi_reg_pp0_iter1_state_12_61_reg_589	9
ap_phi_reg_pp0_iter1_state_13_60_reg_552	9
ap_phi_reg_pp0_iter1_state_14_59_reg_515	9
ap_phi_reg_pp0_iter1_state_15_58_reg_478	9
ap_phi_reg_pp0_iter1_state_1_72_reg_996	9
ap_phi_reg_pp0_iter1_state_2_71_reg_959	9
ap_phi_reg_pp0_iter1_state_3_70_reg_922	9
ap_phi_reg_pp0_iter1_state_4_69_reg_885	9
ap_phi_reg_pp0_iter1_state_5_68_reg_848	9
ap_phi_reg_pp0_iter1_state_6_67_reg_811	9
ap_phi_reg_pp0_iter1_state_7_66_reg_774	9
ap_phi_reg_pp0_iter1_state_8_65_reg_737	9
ap_phi_reg_pp0_iter1_state_9_64_reg_700	9
ap_phi_reg_pp0_iter1_state_reg_442	9
ap_phi_reg_pp0_iter2_state_10_63_reg_663	9
ap_phi_reg_pp0_iter2_state_11_62_reg_626	9
ap_phi_reg_pp0_iter2_state_12_61_reg_589	9
ap_phi_reg_pp0_iter2_state_13_60_reg_552	9
ap_phi_reg_pp0_iter2_state_14_59_reg_515	9
ap_phi_reg_pp0_iter2_state_15_58_reg_478	9

ap_phi_reg_pp0_iter2_state_1_72_reg_996	9
ap_phi_reg_pp0_iter2_state_2_71_reg_959	9
ap_phi_reg_pp0_iter2_state_3_70_reg_922	9
ap_phi_reg_pp0_iter2_state_4_69_reg_885	9
ap_phi_reg_pp0_iter2_state_5_68_reg_848	9
ap_phi_reg_pp0_iter2_state_6_67_reg_811	9
ap_phi_reg_pp0_iter2_state_7_66_reg_774	9
ap_phi_reg_pp0_iter2_state_8_65_reg_737	9
ap_phi_reg_pp0_iter2_state_9_64_reg_700	9
ap_phi_reg_pp0_iter2_state_reg_442	9
ap_phi_reg_pp0_iter3_state_10_63_reg_663	9
ap_phi_reg_pp0_iter3_state_11_62_reg_626	9
ap_phi_reg_pp0_iter3_state_12_61_reg_589	9
ap_phi_reg_pp0_iter3_state_13_60_reg_552	9
ap_phi_reg_pp0_iter3_state_14_59_reg_515	9
ap_phi_reg_pp0_iter3_state_15_58_reg_478	9
ap_phi_reg_pp0_iter3_state_1_72_reg_996	9
ap_phi_reg_pp0_iter3_state_2_71_reg_959	9
ap_phi_reg_pp0_iter3_state_3_70_reg_922	9
ap_phi_reg_pp0_iter3_state_4_69_reg_885	9
ap_phi_reg_pp0_iter3_state_5_68_reg_848	9
ap_phi_reg_pp0_iter3_state_6_67_reg_811	9
ap_phi_reg_pp0_iter3_state_7_66_reg_774	9
ap_phi_reg_pp0_iter3_state_8_65_reg_737	9
ap_phi_reg_pp0_iter3_state_9_64_reg_700	9
ap_phi_reg_pp0_iter3_state_reg_442	9

Register

Name	
Nr_read_reg_1826	
ap_CS_fsm	
ap_enable_reg_pp0_iter0_reg	
ap_enable_reg_pp0_iter1	
ap_enable_reg_pp0_iter2	
ap_enable_reg_pp0_iter3	
ap_enable_reg_pp0_iter4	
ap_enable_reg_pp0_iter5	
ap_phi_reg_pp0_iter1_state_10_63_reg_663	
ap_phi_reg_pp0_iter1_state_11_62_reg_626	
ap_phi_reg_pp0_iter1_state_12_61_reg_589	
ap_phi_reg_pp0_iter1_state_13_60_reg_552	
ap_phi_reg_pp0_iter1_state_14_59_reg_515	
ap_phi_reg_pp0_iter1_state_15_58_reg_478	
ap_phi_reg_pp0_iter1_state_1_72_reg_996	
ap_phi_reg_pp0_iter1_state_2_71_reg_959	
ap_phi_reg_pp0_iter1_state_3_70_reg_922	
ap_phi_reg_pp0_iter1_state_4_69_reg_885	
ap_phi_reg_pp0_iter1_state_5_68_reg_848	
ap_phi_reg_pp0_iter1_state_6_67_reg_811	
ap_phi_reg_pp0_iter1_state_7_66_reg_774	

ap_phi_reg_pp0_iter1_state_8_65_reg_737
 ap_phi_reg_pp0_iter1_state_9_64_reg_700
 ap_phi_reg_pp0_iter1_state_reg_442
 ap_phi_reg_pp0_iter2_state_10_63_reg_663
 ap_phi_reg_pp0_iter2_state_11_62_reg_626
 ap_phi_reg_pp0_iter2_state_12_61_reg_589
 ap_phi_reg_pp0_iter2_state_13_60_reg_552
 ap_phi_reg_pp0_iter2_state_14_59_reg_515
 ap_phi_reg_pp0_iter2_state_15_58_reg_478
 ap_phi_reg_pp0_iter2_state_1_72_reg_996
 ap_phi_reg_pp0_iter2_state_2_71_reg_959
 ap_phi_reg_pp0_iter2_state_3_70_reg_922
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 ap_phi_reg_pp0_iter2_state_6_67_reg_811
 ap_phi_reg_pp0_iter2_state_7_66_reg_774
 ap_phi_reg_pp0_iter2_state_8_65_reg_737
 ap_phi_reg_pp0_iter2_state_9_64_reg_700
 ap_phi_reg_pp0_iter2_state_reg_442
 ap_phi_reg_pp0_iter3_state_10_63_reg_663
 ap_phi_reg_pp0_iter3_state_11_62_reg_626
 ap_phi_reg_pp0_iter3_state_12_61_reg_589
 ap_phi_reg_pp0_iter3_state_13_60_reg_552
 ap_phi_reg_pp0_iter3_state_14_59_reg_515
 ap_phi_reg_pp0_iter3_state_15_58_reg_478
 ap_phi_reg_pp0_iter3_state_1_72_reg_996
 ap_phi_reg_pp0_iter3_state_2_71_reg_959
 ap_phi_reg_pp0_iter3_state_3_70_reg_922
 ap_phi_reg_pp0_iter3_state_4_69_reg_885
 ap_phi_reg_pp0_iter3_state_5_68_reg_848
 ap_phi_reg_pp0_iter3_state_6_67_reg_811

Interface

Summary

RTL Ports	Dir	Bits	Protocol	Source Object	C Type
s_axi_Decipher_AWVALID	in	1	s_axi	Decipher	array
s_axi_Decipher_AWREADY	out	1	s_axi	Decipher	array
s_axi_Decipher_AWADDR	in	6	s_axi	Decipher	array
s_axi_Decipher_WVALID	in	1	s_axi	Decipher	array
s_axi_Decipher_WREADY	out	1	s_axi	Decipher	array
s_axi_Decipher_WDATA	in	32	s_axi	Decipher	array
s_axi_Decipher_WSTRB	in	4	s_axi	Decipher	array
s_axi_Decipher_ARVALID	in	1	s_axi	Decipher	array
s_axi_Decipher_ARREADY	out	1	s_axi	Decipher	array
s_axi_Decipher_ARADDR	in	6	s_axi	Decipher	array
s_axi_Decipher_RVALID	out	1	s_axi	Decipher	array
s_axi_Decipher_RREADY	in	1	s_axi	Decipher	array
s_axi_Decipher_RDATA	out	32	s_axi	Decipher	array
s_axi_Decipher_RRESP	out	2	s_axi	Decipher	array

s_axi_Decipher_BVALID	out	1	s_axi	Decipher	array
s_axi_Decipher_BREADY	in	1	s_axi	Decipher	array
s_axi_Decipher_BRESP	out	2	s_axi	Decipher	array
ap_clk	in	1	ap_ctrl_hs	AES_Decrypt	return value
ap_rst_n	in	1	ap_ctrl_hs	AES_Decrypt	return value
interrupt	out	1	ap_ctrl_hs	AES_Decrypt	return value

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