## Ako zobraziť pipelining v ADOP-e

Ako prvé si stiahnite projekt adop-u pre xilinx.

Následne tento projekt otvorte.

V záložke Sources for: vyberte Behavioral Simulation



Zvoľte súbor ADOP\_system\_tb (viď obrázok):

🚾 Xilinx - ISE - D:\CYUT\ADOP\ADOP_system\ADOP_system.ise - [Design Summary]									
🔭 File Edit View Project Source Process	; Window Help								
] 🗋 🖻 🗗 😓  ] 🗶 🖻 🕱 🗙		[ 🔊 ] 🗟 🗄 🖬 🗖 ] 🌽 😽 ] 🌾	×						
Constant of Debusines Constants	🗵 FPGA Design Summary								
	E-Design Uverview	Project File: ADOF	ADOP_sys						
ADUP_system	□ Summary	Module Name: ADOF	<sup>o</sup> _sys						
ビー EI XC3S2UU-4ft236		Target Device: xc3s2	200-41						
ADOR system to behavior (D		Product Version: ISE 9	.2.04						
E-Muut - ADDP system - ADDI	Clock Report		0.4254025						
E- CoreB - ADOP core - :	Errors and Warnings								
🗄 🐘 Control - Controller	🛃 Synthesis Messages	No partition information was found							
🙀 Pipeline_flow - Flo		<u></u>							
🐂 PC - PC_reg - rtl (C	🛃 Map Messages								
🐂 Next_address - Ne	Place and Route Messages	Logic Utilization							
🔚 I_fetch - Instr_fetc	Timing Messages	Number of Slice Flore							
📋 🔆 🔚 I_cache - Instr_ca 💌	Bitgen Messages								
	All Current Messages	Number of 4 input LUTs							
🕫 Sources 👩 Snapshots 🚺 Libraries	Sunthesis Benort	Logic Distribution							
	Translation Beport	Number of occupied Slices							
	- Map Report	Number of Slices containing only related logic							
Processes for: ADOP_system_tb - behav		Number of Slices containing unrelated logic							
Add Existing Source	Project Properties	Total Number of 4 input LUTs							
Ureate New Source		Number used as logic							
Simulate Rehavioral Model	Display Incremental Messsages	Number used as a route-thru							
	Enhanced Design Summary Contents	Number used for Dual Port BAMs							
I	📕 🔤 Show Partition Data		-32						

Následne poklikajte na možnosť Simulate Behavioral Model:



Otvorí sa Vám ModelSim. Nechajte ho načítať všetko potrebné. Následne sám spustí simuláciu. Nechajte prebehnúť aj ju.

Po jej skončení si rozkliknite okno s wave:

▶ 🖛 👐   Eff 100 ps 븆 EL EL EL 🕺   ?) (} (} ?)	👔 💮 🛛 Contains 🔎 🧷
◣ ๒. !! ฿ํ ≫ ! ⑳   ལ ལ ལ ལ 🏼   💷 💵 ! !	
🚍 🖽 🔟 🔢 wave - default	+ <mark>a</mark> ×
nd Messages	
nal CORE - Pipeline	
mal CORE - IF Stage	
nnal 📕 🚽 if_pc F098	F098
anal 📕 🚽 if_instr 🛛 🖓 🖬 🗐 🗐 🖓 🖬	F110
gnal 🛛 💽 🚽 if_instr2 0000	
gnal 🔷 if_stall 0	
gnal 🧇 🚸 wb_jump 0	
gnal CORE - ID Stage	
gnal 📕 🚽 id_pc 0000	0000
gnal 📕 🖅 id_ra 🛛 0	0
anal did_rb 0	

V ňom uvidíte priebehy signálov a hodnoty v registroch v pipeline. Časti pipeliny sú oddelené a je teda vidieť, ktoré signály prislúchajú jednotlivým častiam.

📲 wave - default														_ 8 ×
File Edit View Add Format Tool	s Window													
🗋 • 😹 🖬 🖏 🎒 🛔 🖿 🛙	8122   <b>M</b> 8		)	1 🕇 🔶 =	→ 1 IF 100	) ps 🛊 🗄	1 11 14 🕺   7	1 🔐 🚯 🖓 🗄 ሮ	0 🐵 🛛 🕹	t t t	±₹₹1	F _ I = 4	. <b>9 9</b> 9	ď
💽 🕞 🗈 I 📴 🛪 I 🎕	Q Q Q Q			r J J										
Messages		7 7 1								7 7				
CORE - Pipeline														
CORE - IF Stage														
	F098	F098				)F)F09¢	)F)F0A0		)F	)F0A4	F)F0A8			<u>کتھ</u>
	F110	F110				) 8010	))F110		X:	(A000	1			
	0000	0000		<u>) ( )000</u> 0	0 ()0000 ))⊭	)8)00F0	) )F)(0000	<u>))0000 ()(0000 )</u>	(0000 ))F	A JO2AC	<u>)1)0000</u>		<u>) (0000 ) (000</u>	00 ()0
🔶 if_stall	0								-					
wb_jump	U		_											
- CORE - ID Stage	0000	0000				VE Yoooo	VE Yodoo		Ve	10000	E EOAG		Yoooo	
id ra	0	0000				<u>// /0000</u> Yı Yo	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		/E Y1	Yo	12 Y1		<u>700000</u> Yo	
u id_rb	0	0	=			<u>NE 10</u>			A	18	115 1		Yo To	
+wb_rw	0	0					Ĭ1	10					No	
wb_spe	0													
	0000	0000					)x)o)o.				)x)oood	) (F35	0	
	0000	0000		8			)F)0)X.				)F)0000	) CFF	E	
■→ Register File	{0000} {C000} {000	{0000} {COC	10} {0000} {01	000} {0000} {000	00} {0000} {0000	} {0000} {0	0000} {0000} {0000	\${0000} {00F0} {0000	)} {0000} {000	0) {0000} ·	{0000} {0000} {	0000} {0000}	{0000} {0000}	{0000}
■→ Stack Pointer	D000	D000											<u>CFFE</u>	
	0000	0000				<u>)c)0000</u>	<u>, jc jodoo</u>		<u>ű</u>		<u>)00F0</u>		<u>,0000</u>	
· · · · · · · · · · · · · · · · · · ·	0000	0000				v	v- v			v	1D)0000		v	
	0000	0000	_			)F )0000	<u> </u>		E	10000	1010003		20000	
id b mux	0000	0000				Yoood	Yo Yodoo				JF JUUFU		<u>10000</u>	
	0000	0000	=			YE Y0000	Yy Yodoo		/////	Y0000	1010003		Y0000	
id stall	0	0000				<u>, ,0000</u>	///////////////////////////////////////				<u></u>		10000	
🤞 id_clear	1					F				Fi				
CORE - MEM Stage														
·	0000	0000				)F098	<u>)0)F)0000</u>			FOAO	0)F0A4	)0000		<u>کات ا</u>
· <b>· · · · · · · · · ·</b> · · · · · · · ·	0000	0000				) <u>(</u> COOQ	)0)C)0000			,00F0	10)F0A6	)0000		
œ mem_b	0000	0000				XXXX	<u>)0)0)0000</u>			XXXXX	0)02AC	)0000		
	0000	0000		2		)FC06	<u>)0)x)0000</u>			FC52	D)CFFE	)0000		
mem_flags	0004	0004										1		
mem_addr	0000	0000				JFC06	<u>,0 )x )0000</u>			FC52	10)CFFE	20000		
	UUUU 2222	0000		10010	VELLO	1,000			1010	100F0	10 )FOA6	,0000	Nora N	
mem_uou.	la la la la			(8010 <u>)</u>	10r0 /F110	/P		-52 JAUUU JUZAC	1013	<u>U</u>		0 <u>UUF</u>	, juure )	
Now Now	50000000 ps			21200000 ps			21400000 ps		21600	0000 ps			21800000 ps	
Cursor 1	21127674 ps	21	127674 ps											
4 F	•	4												•
21058315 ps to 21878635 ps	Now: 50 us Delta:	: 8	0000											