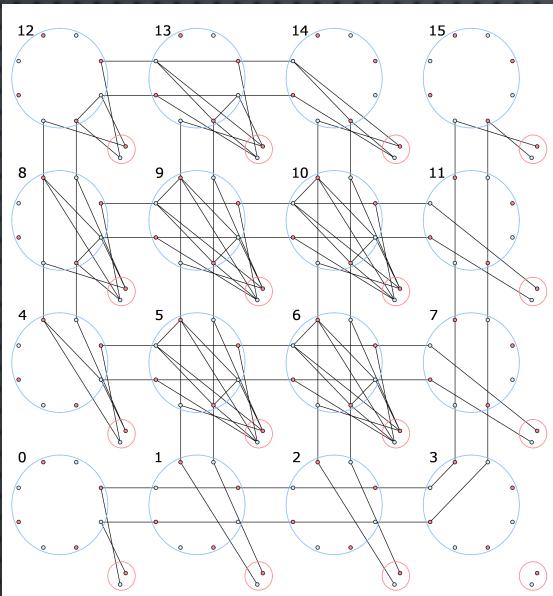


QOS IN NOC

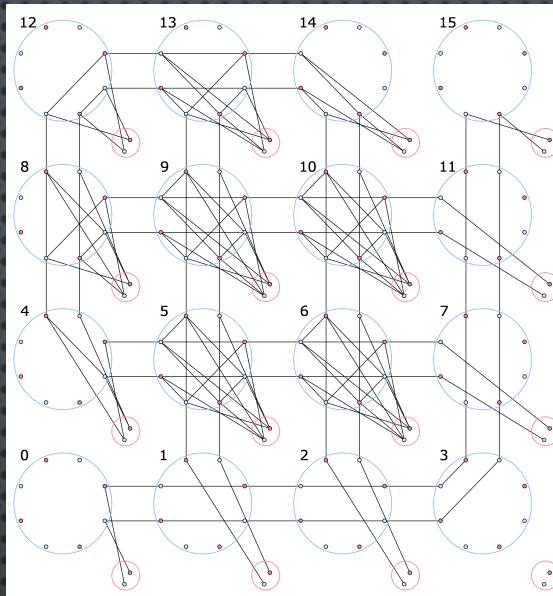
Version Characteristic	Baseline LBDR	LBDR - Separate Regions	Extended LBDR (20 routing bits)			Routing Table			Routers with Bypass	
Isolation Guarantee	-	+	+			+			+	
			SC1	SC2	SC3	SC1	SC2	SC3	SC1	SC2
Avg. Connectivity (in scenario)	15 Adaptive	13 Adaptive	10.21 Adaptive	7.5 Adaptive	9.5 Adaptive	10.7 Adaptive	10.42 Adaptive	10.78 Adaptive	10.7 Adaptive	10.42 Adaptive
Avg. Latency (clk cycles)	21.77 Adaptive	19.75 Adaptive	20.52 Adaptive	No adaptive	No adaptive	26.87 Adaptive	27.79 Adaptive	30.56 Adaptive	25.75 Adaptive	24.98 Adaptive
Avg. Throughput (Mb/s)	3.8 Adaptive	3.82 Adaptive	3.66 Adaptive	No adaptive	No adaptive	3.82 Adaptive	3.53 Adaptive	3.73 Adaptive	3.53 Adaptive	3.82 Adaptive
Scalability	+	+	+			-			-	
Non-Minimal Path Support	-	-	-			+			+	
Requires Logic Modification	Not Applicable	NO	YES			NO			YES (MUXes for Bypass)	

NoC Size	4x4
Critical Nodes	0, 15
Critical Path	
Scenario 1	0, 1, 2, 3, 7, 11, 13
Scenario 2	0, 1, 5, 9, 10, 14, 15
Scenario 3	0, 1, 5, 9, 13, 14, 15
Packet Injection Rate (PIR)	0.01 Packets/Cycle/No de
Flow Control	Credit Based Wormhole Switching
Buffer Size	4 Flits
Virtual Channel(s)	No
Packet Size	8 Flits

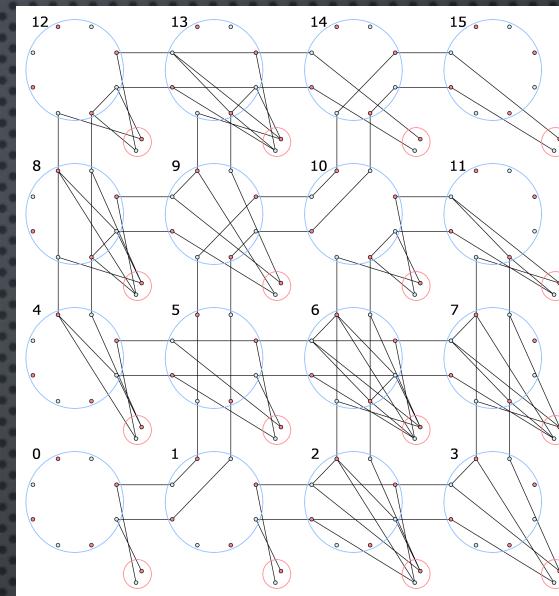
- Adaptive routing uses an algorithm which selects routing algorithm with highest connectivity.
- In Baseline and Separate Regions scenarios, North-Last Adaptive turn model routing is used.



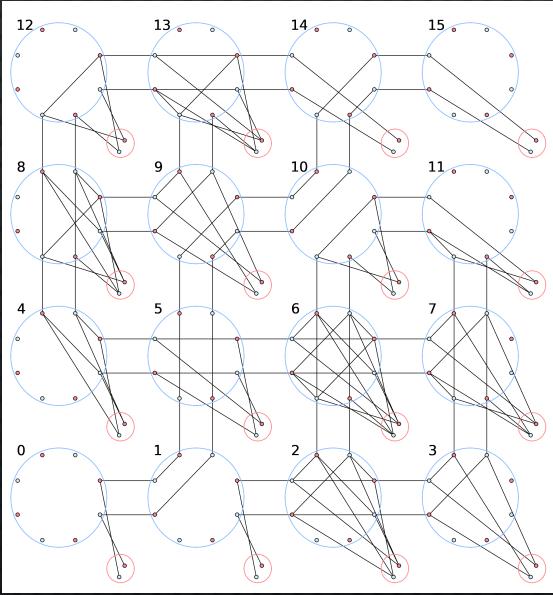
Scenario 1 Minimal



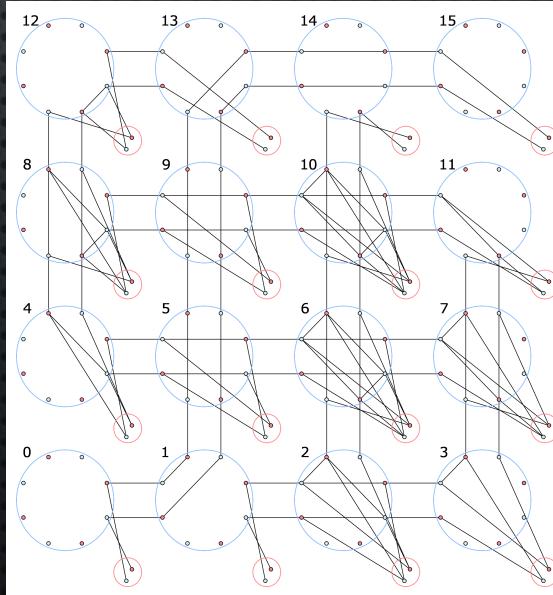
Scenario 1 Non-Minimal



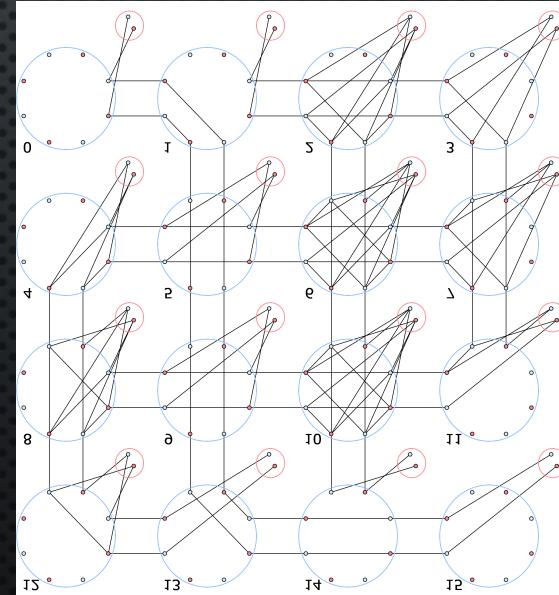
Scenario 2 Minimal XY



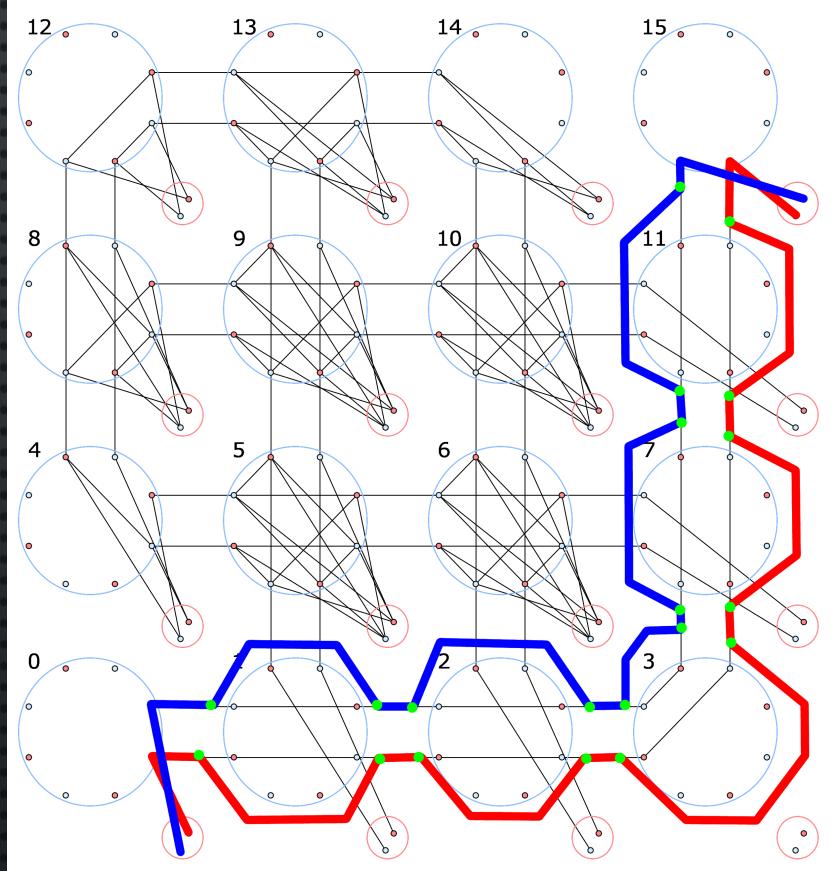
Scenario 2 Non-Minimal



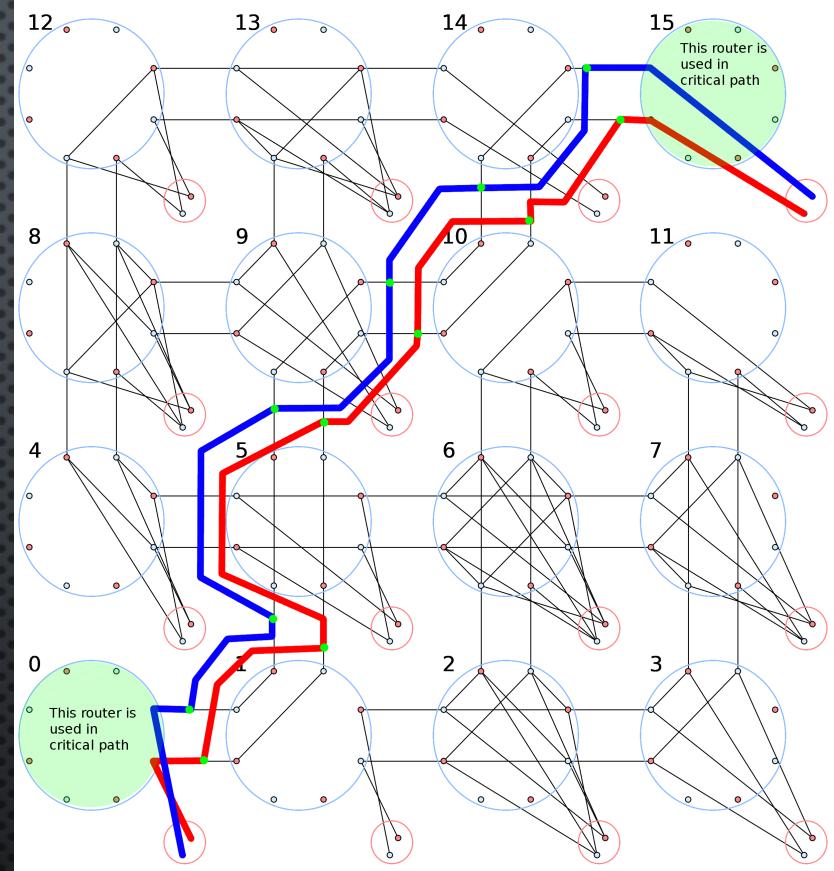
Scenario 3 Minimal XY



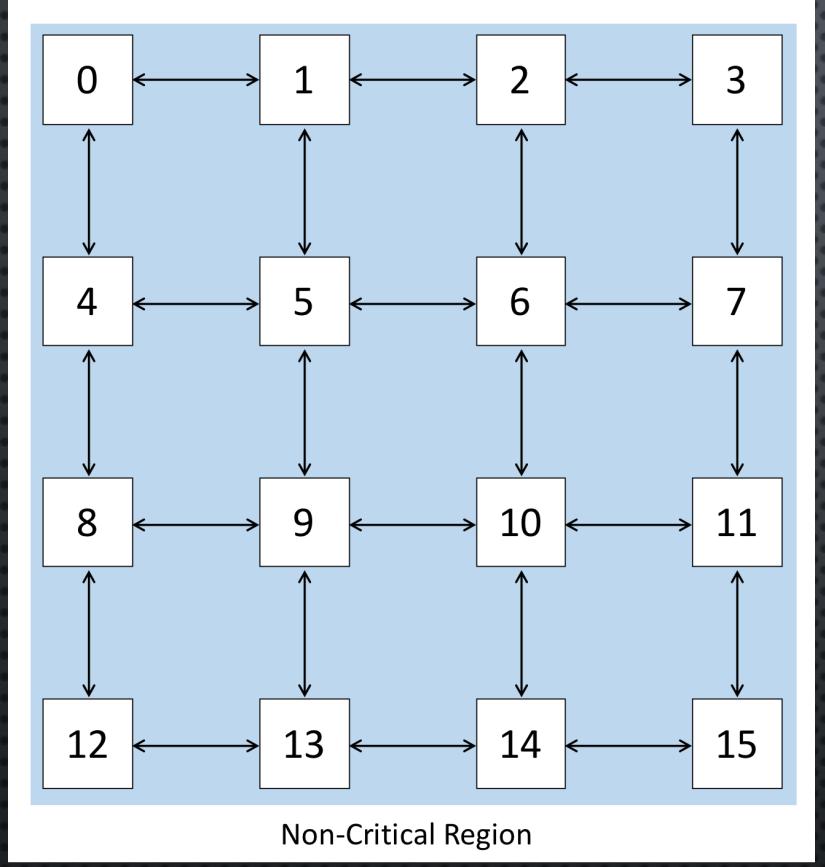
Scenario 3 Non-Minimal



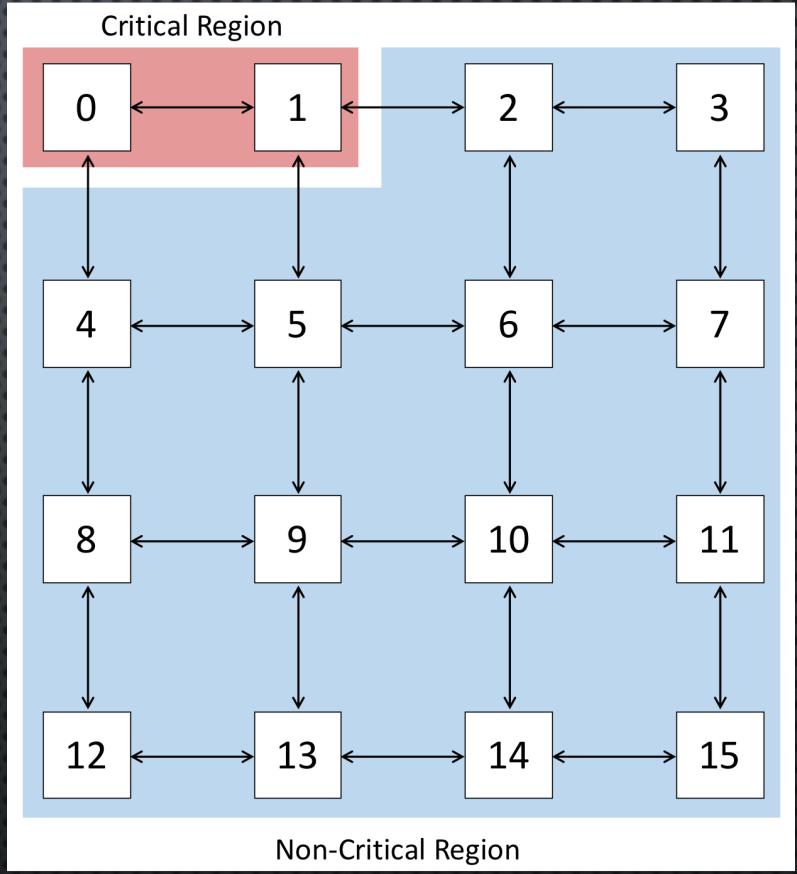
Scenario 1 with Bypass Routers
(Non-Minimal)



Scenario 2 with Bypass Routers
(Non-Minimal)



Baseline Scenario



Scenario with
Separate Regions