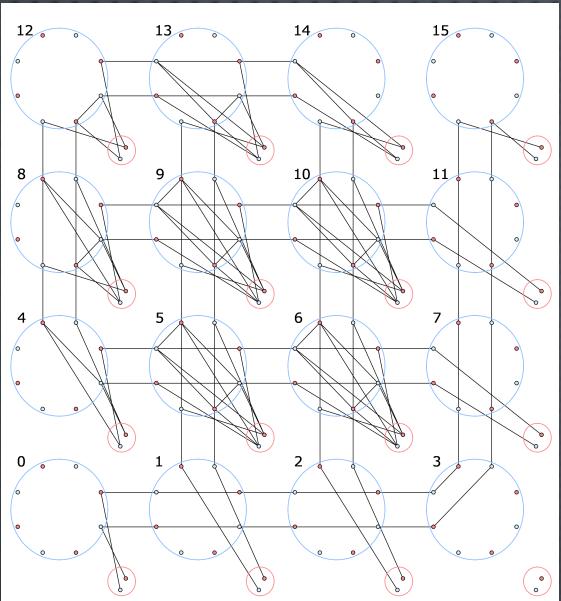


QOS IN NOC

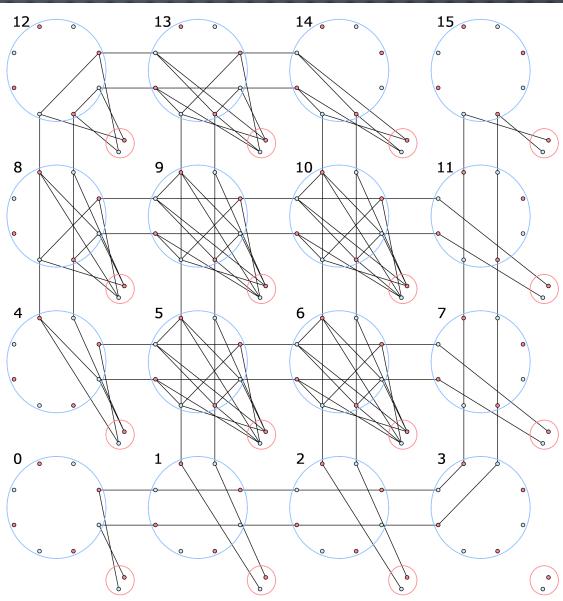
Characteristic \ Version	Baseline LBDR	LBDR - Separate Regions	Extended LBDR (20 routing bits)	Routing Table	Routers with Bypass
Isolation Guarantee	-	+ (via LBDR connectivity bits)	+	+	+
Avg. Connectivity (in scenario)	15 Adaptive	13 Adaptive	10.21 Adaptive	10.7 Adaptive	10.7 Adaptive
Avg. Latency (clk cycles)	21.77 Adaptive	19.75 Adaptive	20.52 Adaptive	26.87 Adaptive	25.75 Adaptive
Max. Latency (clk cycles)	-	44.5 Adaptive	33.5 Adaptive	82.5 Adaptive	82.5 Adaptive
Max. Critical Latency (clk cycles)	-	39.5 Adaptive	29.5 Adaptive	29.5 Adaptive	14.5 Adaptive
Avg. Throughput (Mb/s)	3.8 Adaptive	3.82 Adaptive	3.66 Adaptive	3.82 Adaptive	3.53 Adaptive
Avg. Critical Throughput (Mb/s)	-	1.92 Adaptive	0.52 Adaptive	0.52 Adaptive	0.52 Adaptive
No. of Critical Path Hops	-	1	6	6	1
Scalability	+	+	+	-	- (if using Routing Tables)
Non-Minimal Path Support	-	-	-	+	+
Requires Logic Modification	Not Applicable	NO	YES	NO	NO

NoC Size	4x4
Critical Nodes	0, 15
<b>Critical Path</b>	
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/Node
Flow Control	Credit Based Wormhole Switching
Buffer Size	4 Flits
Virtual Channel(s)	No
Packet Size	8 Flits

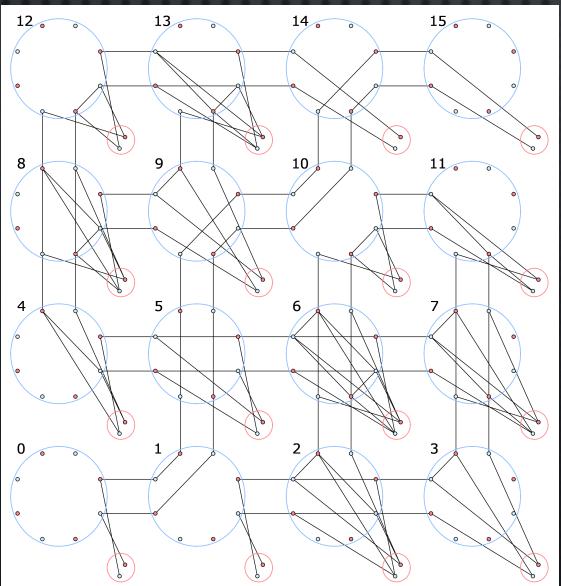
- Adaptive routing uses an algorithm which selects routing algorithm with highest connectivity.
- In Baseline and Separate Regions scenarios, North-Last Adaptive turn model routing is used.



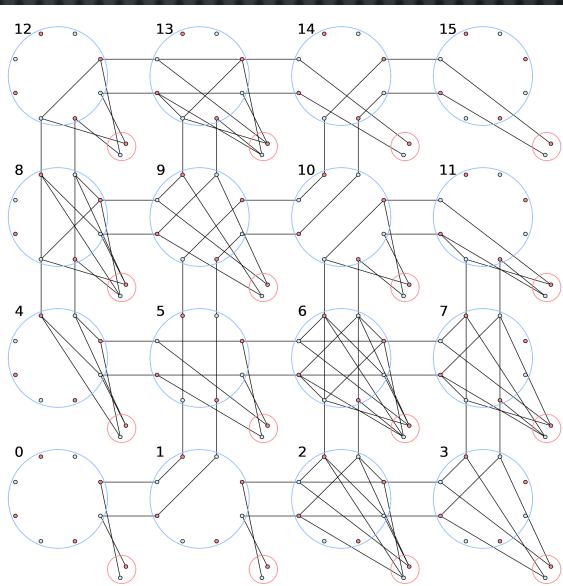
Scenario 1 Minimal



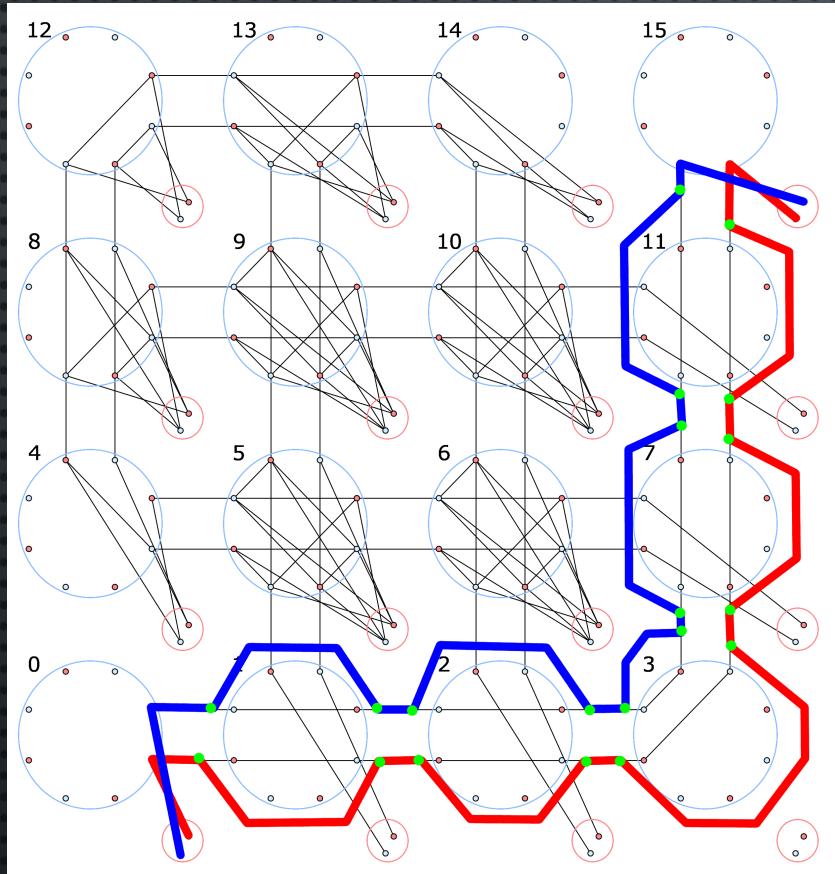
Scenario 1 Non-Minimal



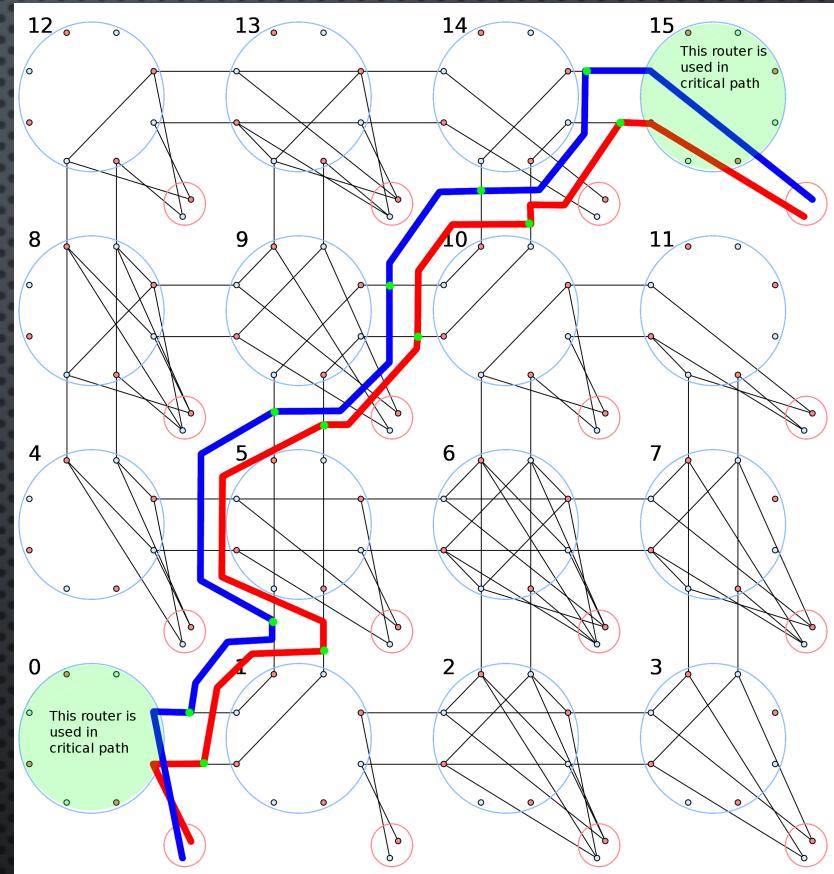
Scenario 2 Minimal XY



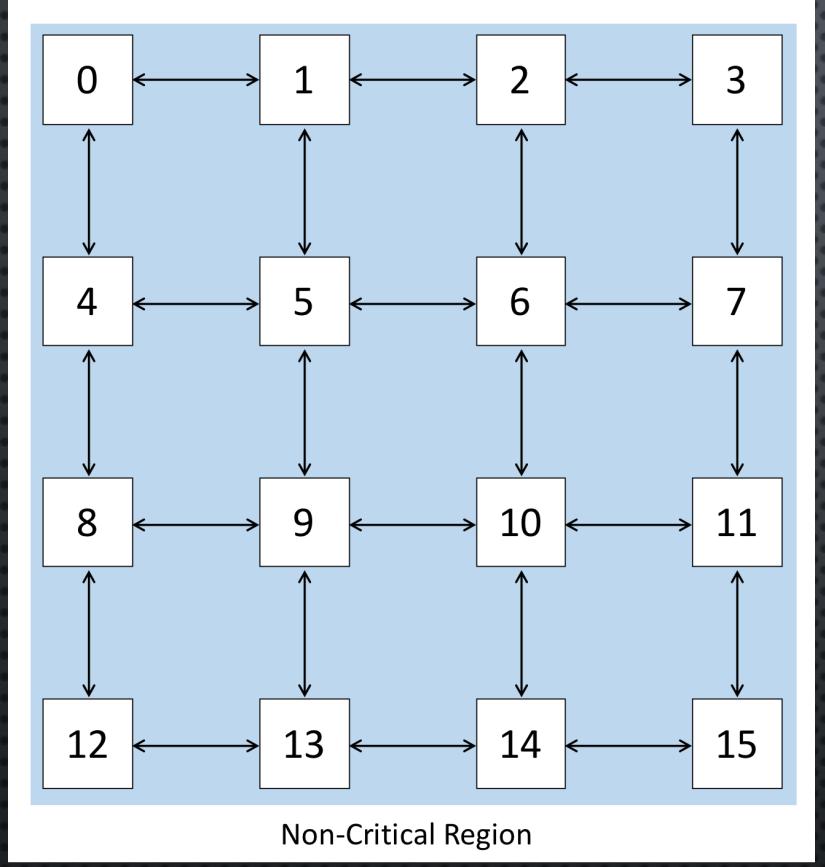
Scenario 2 Non-Minimal



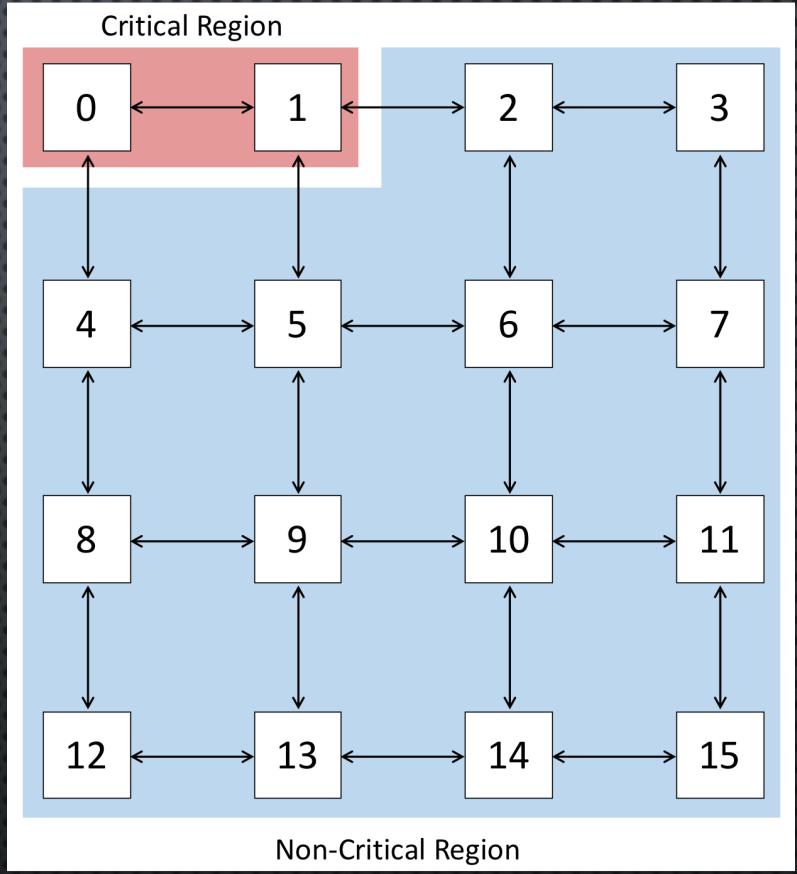
## Scenario 1 with Bypass Routers (Non-Minimal)



# Scenario 2 with Bypass Routers (Non-Minimal)



Baseline Scenario



Scenario with  
Separate Regions