

Figure 1: pegasus\_v\_chimera\_uc.tikz: shows extra edges added to chimera unit cell to make Pegasus unit cell

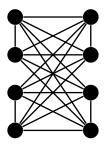


Figure 2: pegasus\_v\_chimera\_uc\_k44.tikz: shows extra edges added to chimera unit cell to make Pegasus unit cell



Figure 3:  $all_{to}aux.tikz$ 

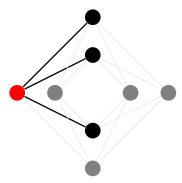


Figure 4: all\_to\_aux\_chimera.tikz

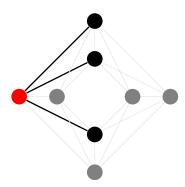


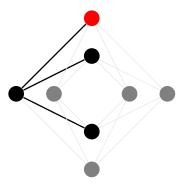
Figure 5: all\_to\_aux\_pegasus.tikz

Gadgets with adjacency graph corresponding to all\_to\_aux.tikz( $\bigwedge$ ):

- NTR-KZFD
- NTR-ABCG



Figure 6: logical\_fork.tikz



 $Figure~7:~logical\_fork\_chimera.tikz$ 

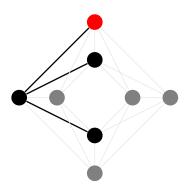


Figure 8: logical\_fork\_pegasus.tikz

Gadgets with adjacency graph corresponding to logical\_fork.tikz ( $\brule{\swarrow}$ ):

• NTR-ABCB



Figure 9: k4\_missing\_2edge.tikz

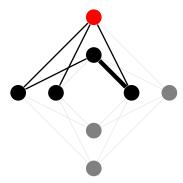


Figure 10: k4\_missing\_2edge\_chimera.tikz

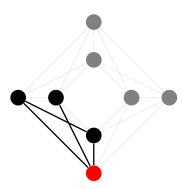


Figure 11: k4\_missing\_2edge\_pegasus.tikz

Gadgets with adjacency graph corresponding to k4\_missing\_2edge.tikz( $\buildrel \buildrel \build$ 

ullet Asymmetric reduction



Figure 12: k4\_missing\_edge.tikz

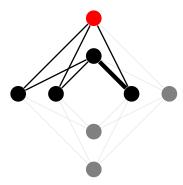


Figure 13:  $k4_missing_edge_chimera.tikz$ 

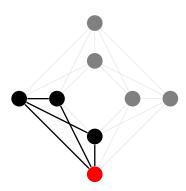


Figure 14: k4\_missing\_edge\_pegasus.tikz

Gadgets with adjacency graph corresponding to k4\_missing\_edge.tikz( $\wedge$ ):

• Asymmetric cubic reduction



Figure 15: k4.tikz

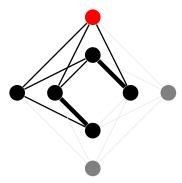


Figure 16: k4\_chimera.tikz

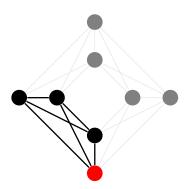


Figure 17: k4\_pegasus.tikz

Gadgets with adjacency graph corresponding to k4.tikz (riangleq ):

- PTR-Ishikawa
- PTR-BCR (1-4)
- PTR-KZ
- $\bullet~\rm Z$  version of PTR-KZ



Figure 18: k4\_missing\_edge.tikz

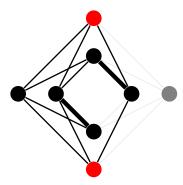


Figure 19:  $k4_missing_edge_chimera.tikz$ 

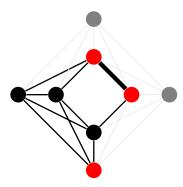


Figure 20: k4\_missing\_edge\_pegasus.tikz

Gadgets with adjacency graph corresponding to k4.tikz(🔊):

• SFR-BCR-1

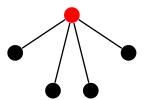


Figure 21: all\_to\_aux4.tikz

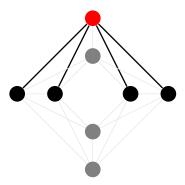


Figure 22: all\_to\_aux4\_inPegasus.tikz

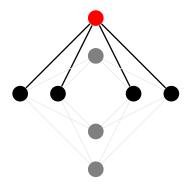


Figure 23: all\_to\_aux4\_inChimera.tikz

Gadgets with adjacency graph corresponding to all\_to\_aux4.tikz( \*\*):

• NTR-KZFD

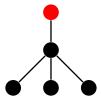


Figure 24: logical\_fork3.tikz

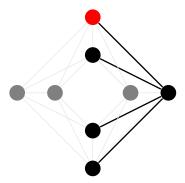


Figure 25: logical\_fork3\_inPegasus.tikz

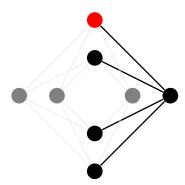


Figure 26: logical\_fork3\_inChimera.tikz

Gadgets with adjacency graph corresponding to logical\_fork3.tikz( ):

• NTR-ABCB

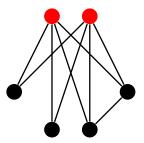


Figure 27:  $2aux_to_all_{1conn.tikz}$ 

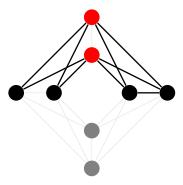


Figure 28: 2aux\_to\_all4\_1conn\_inPegasus.tikz

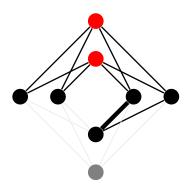


Figure 29: 2aux\_to\_all4\_1conn\_inChimera.tikz

Gadgets with adjacency graph corresponding to 2aux\_to\_all4\_1conn.tikz(



ullet positive term reduction

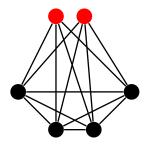


Figure 30:  $2aux_to_all4_allConn.tikz$ 

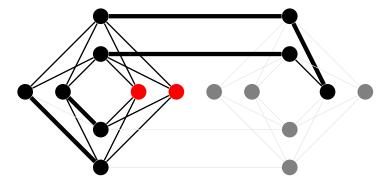


Figure 31:  $2aux\_to\_all4\_allConn\_inChimera.tikz$ 

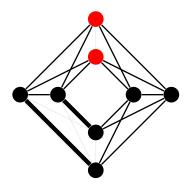


Figure 32: 2aux\_to\_all4\_allConn\_inPegasus.tikz

Gadgets with adjacency graph corresponding to 2aux\_to\_all4\_allConn.tikz(  $\stackrel{\frown}{\longrightarrow}$  ):



• PTR-Ishikawa

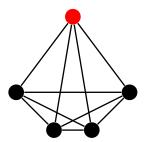


Figure 33:  $aux_to_all4_allConn.tikz$ 

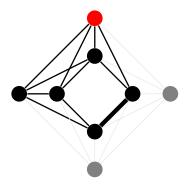


Figure 34: aux\_to\_all4\_allConn\_inPegasus.tikz

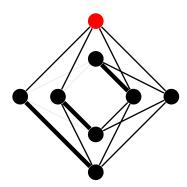


Figure 35: aux\_to\_all4\_allConn\_inChimera.tikz

Gadgets with adjacency graph corresponding to aux\_to\_all4\_allConn.tikz(



- PTR-BCR-2
- PTR-BCR-4

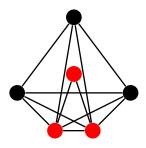
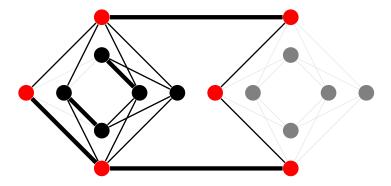


Figure 36:  $aux_to_all4_allConn_extra_qb.tikz$ 



 $Figure~37:~aux\_to\_all4\_allConn\_inChimera\_extra\_qb.tikz$ 

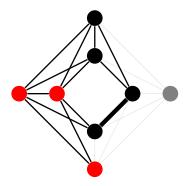


Figure 38: aux\_to\_all4\_allConn\_inPegasus\_extra\_qb.tikz

Gadgets with adjacency graph corresponding to aux\_to\_all4\_allConn\_extra\_qb.tikz(



• RBL (even)

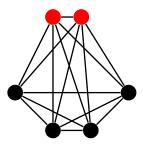


Figure 39: 2auxConn\_to\_all4\_allConn.tikz

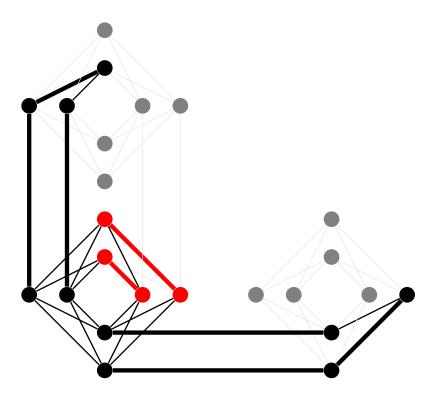


Figure 40: 2auxConn\_to\_all4\_allConn\_inChimera.tikz

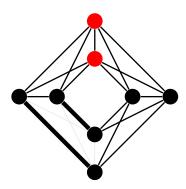


Figure 41: 2auxConn\_to\_all4\_allConn\_inPegasus.tikz

Gadgets with adjacency graph corresponding to 2auxConn\_to\_all4\_allConn.tikz(



• PTR-BCR-3

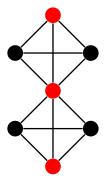


Figure 42: 2k4\_shared\_aux.tikz

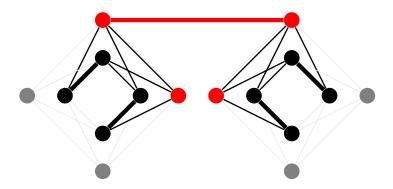


Figure 43: 2k4\_shared\_aux\_inChimera.tikz

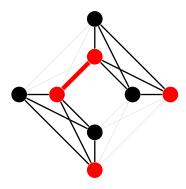


Figure 44: 2k4\_shared\_aux\_inPegasus.tikz

Gadgets with adjacency graph corresponding to 2k4\_shared\_aux.tikz(

- $\bullet\,$  Two copies of PTR-KZ sharing an auxilla
- $\bullet\,$  Two copies of z-version of PTR-KZ sharing an auxilla