

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

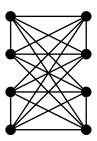


Figure 2: pegasus\_v\_chimera\_uc\_k44.tikz: shows extra edges added to chimera unit cell to make Pegasus unit cell



Figure 3: all\_to\_aux.tikz

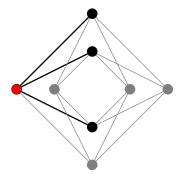


Figure 4: all\_to\_aux\_chimera.tikz

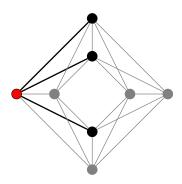


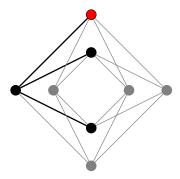
Figure 5: all\_to\_aux\_pegasus.tikz

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

- NTR-KZFD
- NTR-ABCG



Figure 6: logical\_fork.tikz



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

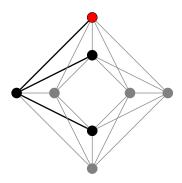


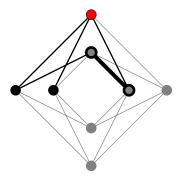
Figure 8: logical\_fork\_pegasus.tikz

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

• NTR-ABCB



Figure 9: k4\_missing\_2edge.tikz



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

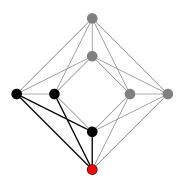


Figure 11: k4\_missing\_2edge\_pegasus.tikz

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

• Asymmetric reduction



Figure 12: k4\_missing\_edge.tikz

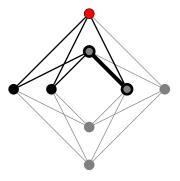


Figure 13: k4\_missing\_edge\_chimera.tikz

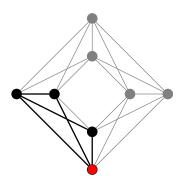


Figure 14: k4\_missing\_edge\_pegasus.tikz

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

ullet Asymmetric cubic reduction



Figure 15: k4.tikz

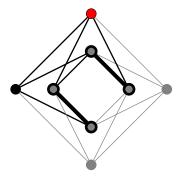


Figure 16: k4\_chimera.tikz

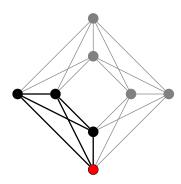


Figure 17: k4\_pegasus.tikz

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



Figure 18: k5\_missing\_edge.tikz

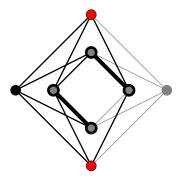


Figure 19: k5\_missing\_edge\_chimera.tikz

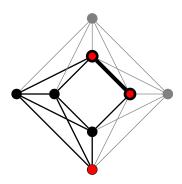


Figure 20: k5\_missing\_edge\_pegasus.tikz

Gadgets with adjacency graph corresponding to k5\_missing\_edge.tikz ( $\mbox{\ensuremath{\not \boxtimes}}\xspace):$ 

## • SFR-BCR-1

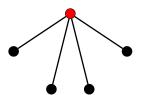


Figure 21: all\_to\_aux4.tikz

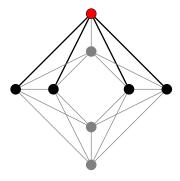


Figure 22: all\_to\_aux4\_inPegasus.tikz

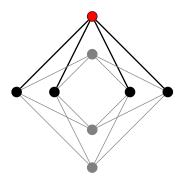


Figure 23: all\_to\_aux4\_inChimera.tikz

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

• NTR-KZFD



Figure 24: logical\_fork3.tikz

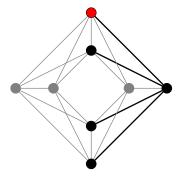


Figure 25: logical\_fork3\_inPegasus.tikz

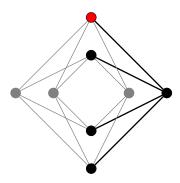


Figure 26: logical\_fork3\_inChimera.tikz

Gadgets with adjacency graph corresponding to logical\_fork3.tikz(  $\stackrel{\longleftarrow}{\swarrow}$  ):

• NTR-ABCB

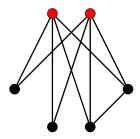


Figure 27:  $2aux_to_all_{1conn.tikz}$ 

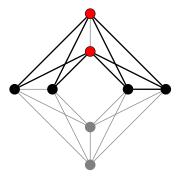


Figure 28: 2aux\_to\_all4\_1conn\_inPegasus.tikz

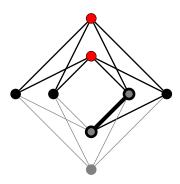


Figure 29: 2aux\_to\_all4\_1conn\_inChimera.tikz

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



ullet positive term reduction

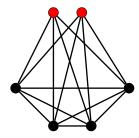


Figure 30:  $2aux\_to\_all4\_allConn.tikz$ 

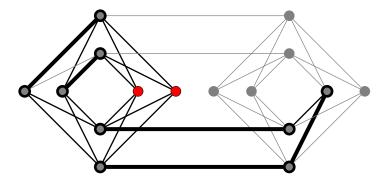


Figure 31:  $2aux\_to\_all4\_allConn\_inChimera.tikz$ 

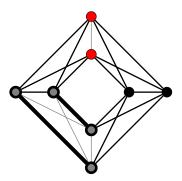


Figure 32: 2aux\_to\_all4\_allConn\_inPegasus.tikz

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



## • PTR-Ishikawa

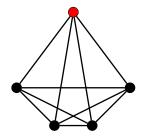
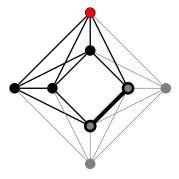


Figure 33:  $aux_to_all_allConn.tikz$ 



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

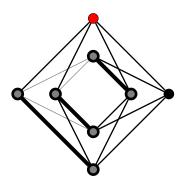


Figure 35: aux\_to\_all4\_allConn\_inChimera.tikz

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



- PTR-BCR-2
- $\bullet$  PTR-BCR-4

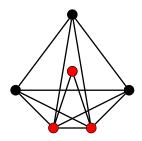
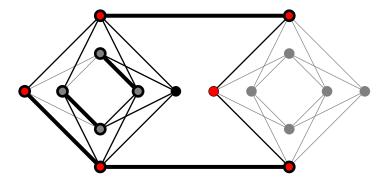
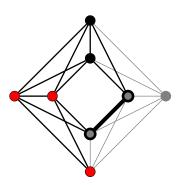


Figure 36: aux\_to\_all4\_allConn\_extra\_qb.tikz



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



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

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



• RBL (even)

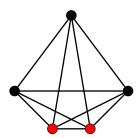


Figure 39:  $2aux_to_3.tikz$ 

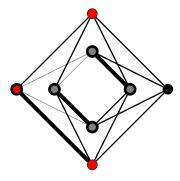


Figure 40:  $2aux\_to\_3\_inChimera.tikz$ 

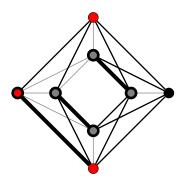


Figure 41: 2aux\_to\_3\_inPegasus.tikz

Gadgets with adjacency graph corresponding to 2aux\_to\_3.tikz(



• RBL (even)

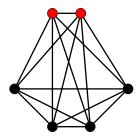


Figure 42:  $2auxConn_to_all4_allConn.tikz$ 

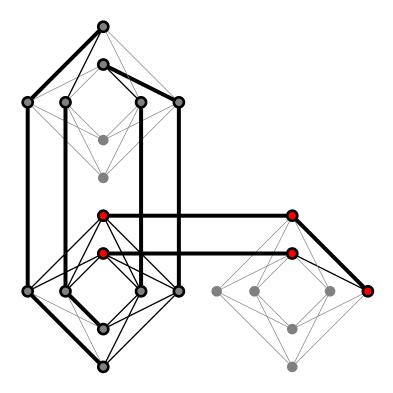


Figure 43: 2auxConn\_to\_all4\_allConn\_inChimera.tikz

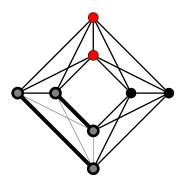


Figure 44: 2auxConn\_to\_all4\_allConn\_inPegasus.tikz

 $Gadgets\ with\ adjacency\ graph\ corresponding\ to\ 2auxConn\_to\_all4\_allConn.tikz(\ref{thm:conn})$ 



• PTR-BCR-3

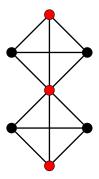


Figure 45:  $2k4\_shared\_aux.tikz$ 

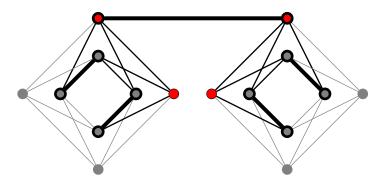


Figure 46:  $2k4\_shared\_aux\_inChimera.tikz$ 

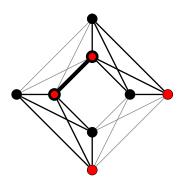


Figure 47:  $2k4\_shared\_aux\_inPegasus.tikz$ 

Gadgets with adjacency graph corresponding to 2k4\_shared\_aux.tikz(\(\frac{1}{2}\)):

• Two copies of PTR-KZ sharing an auxilla

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