

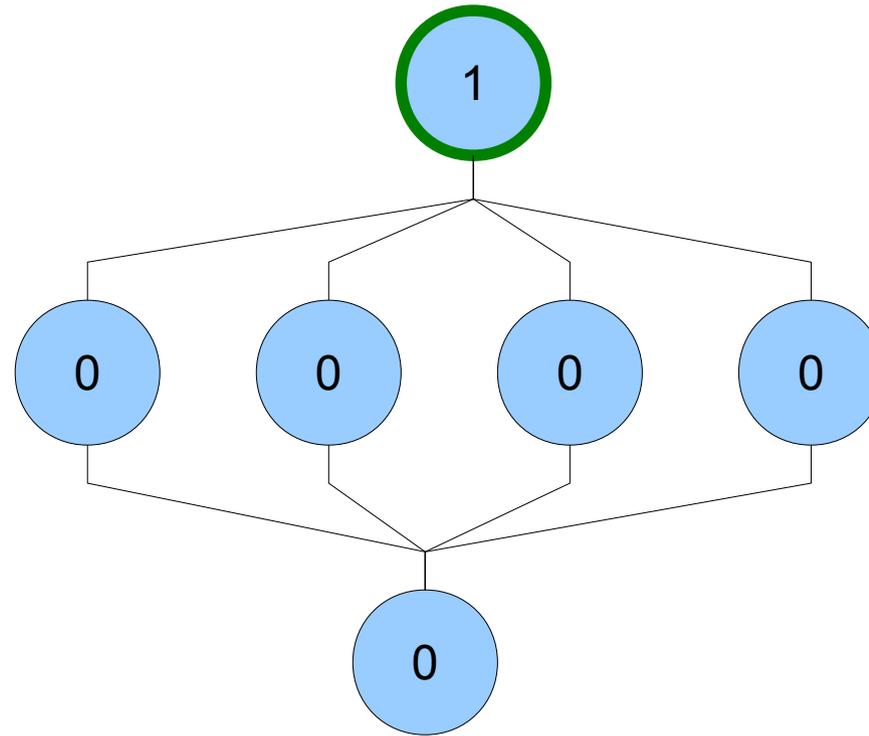
SMF Multi-Interface Operation

79th IETF Beijing China
Justin Dean

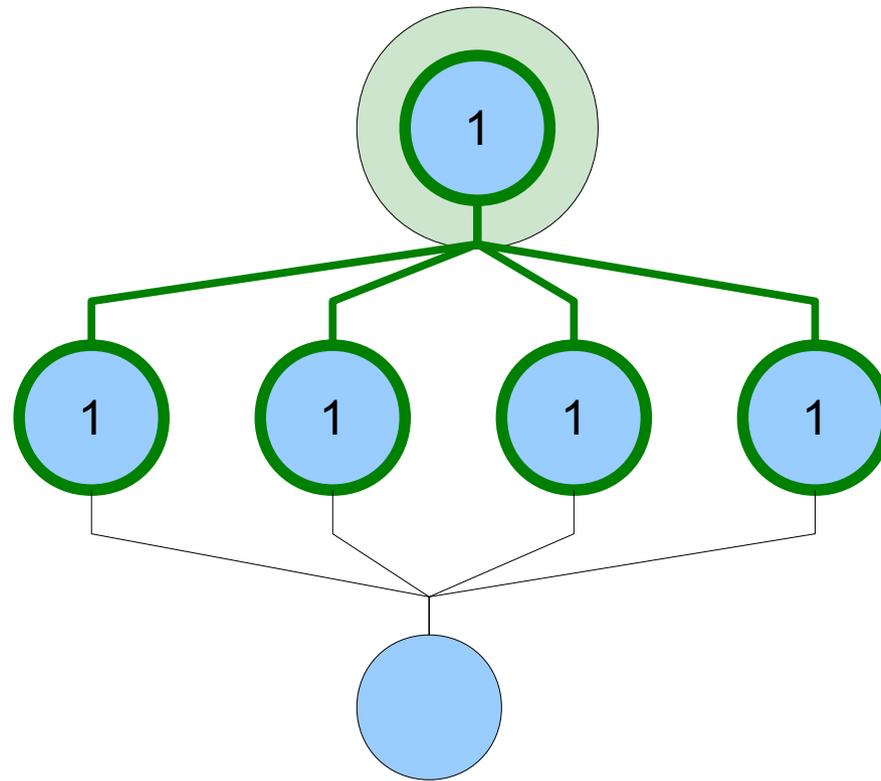
SMF Multi-Interface Operation

- Issues discovered recently with multi-interface testing.
 - SMF works but inefficiently in certain configurations
 - These configurations are not uncommon
 - Solutions may impact multiple drafts
 - SMF
 - SMF-MIB
 - OLSRv2?
 - Solutions proposed would not impact packetbb² or NHDP

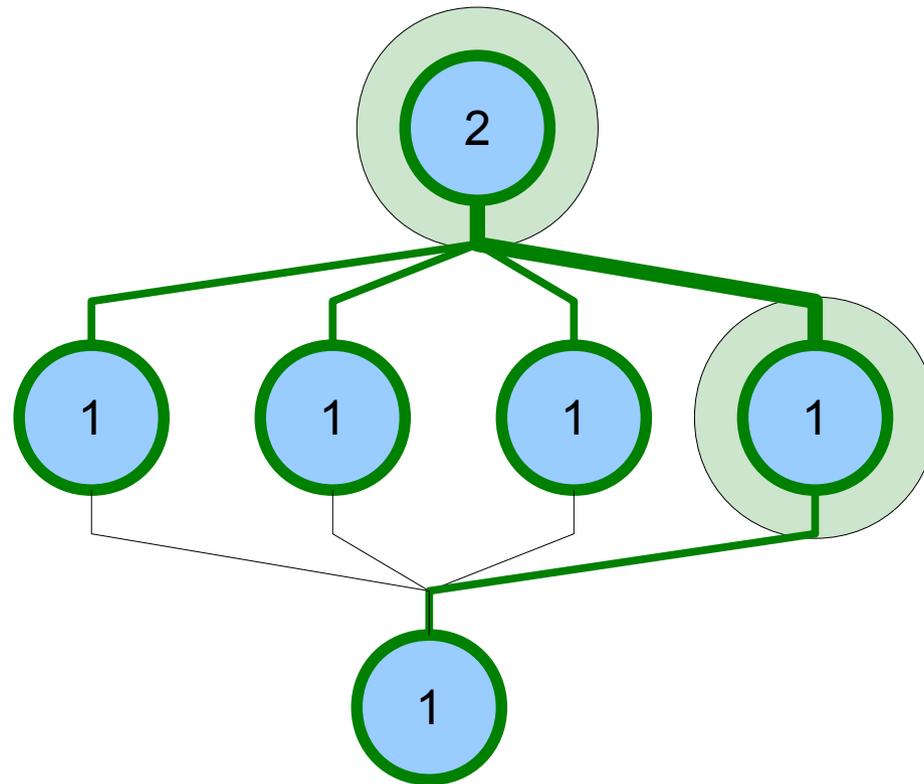
Single Interface Example: 1



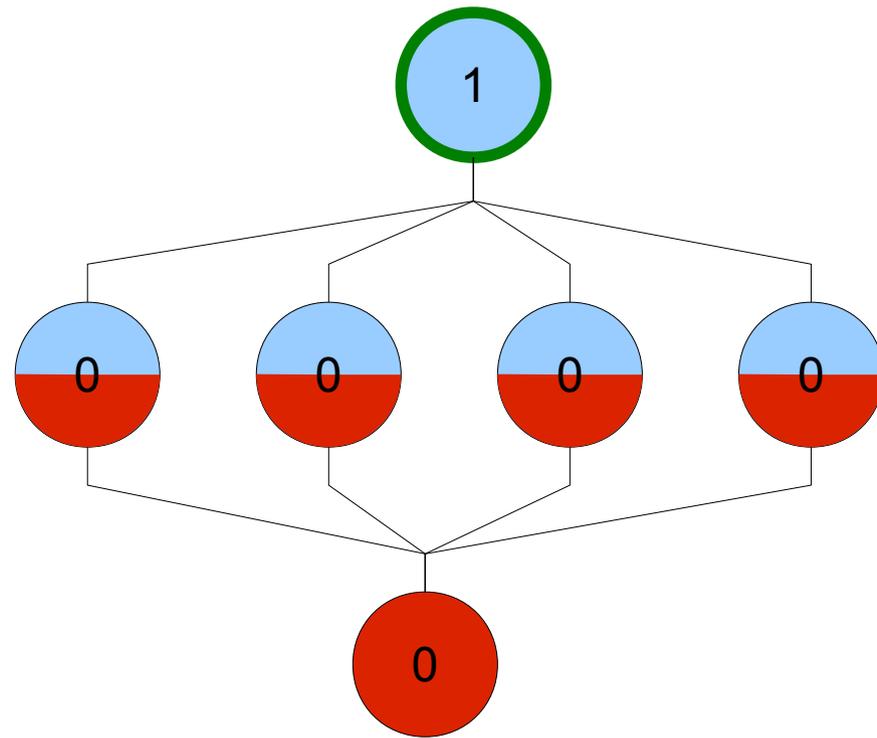
Single Interface Example: 1



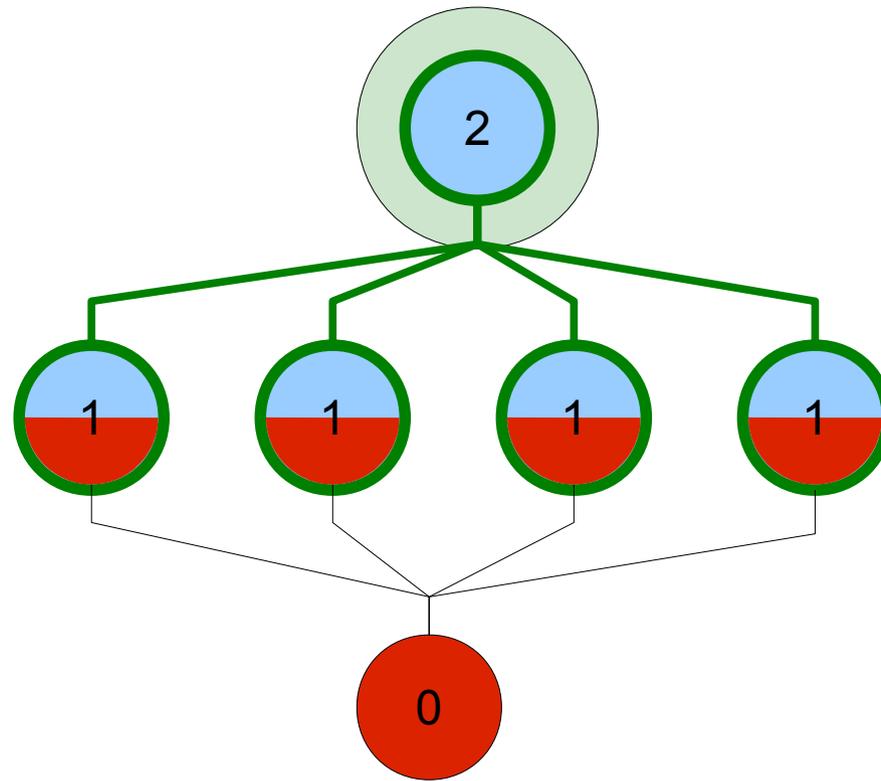
Single Interface Example: 1



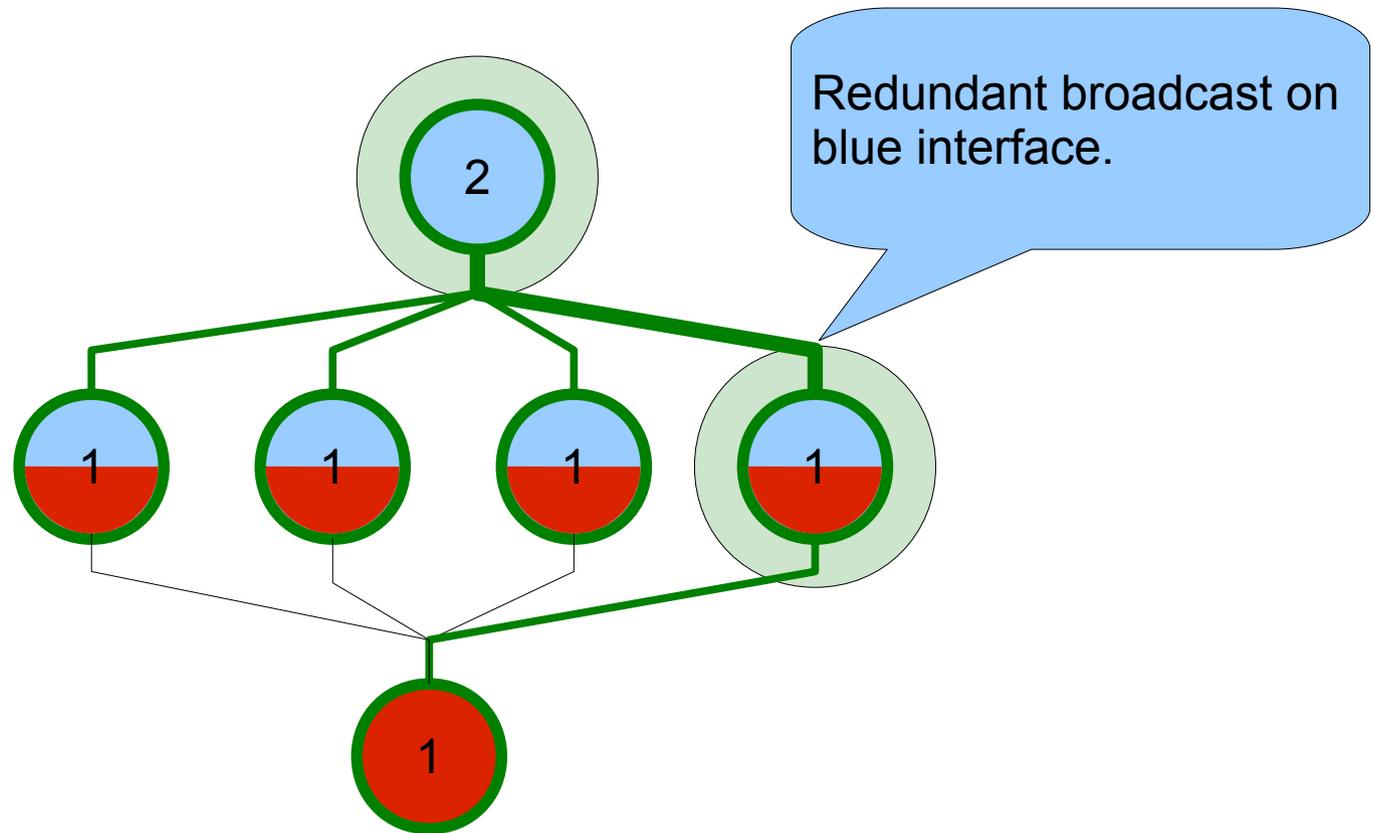
Dual Interface Example: 2



Dual Interface Example: 2

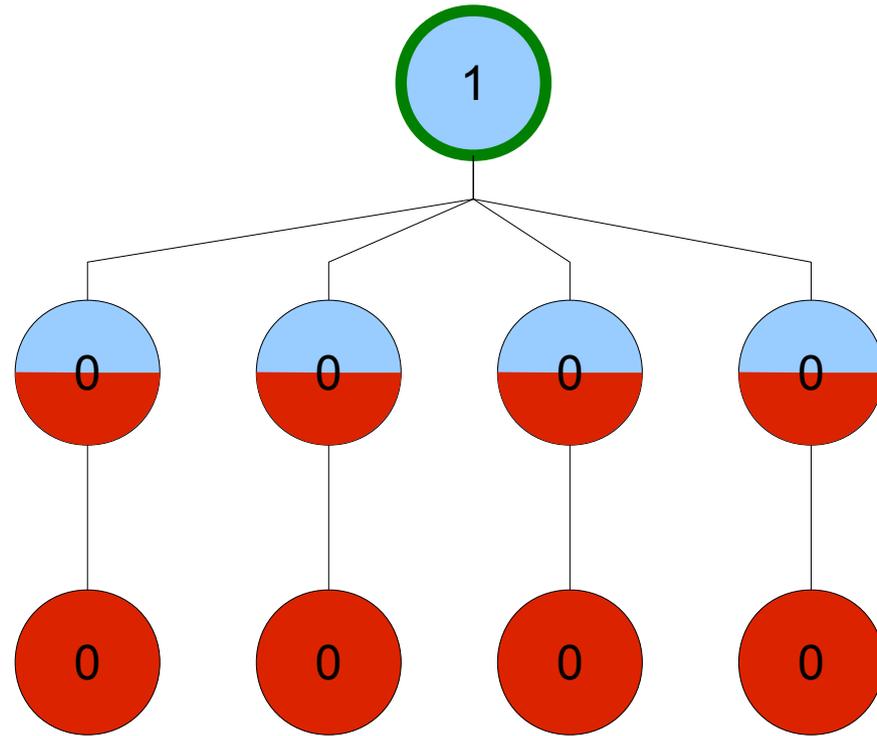


Dual Interface Example: 2

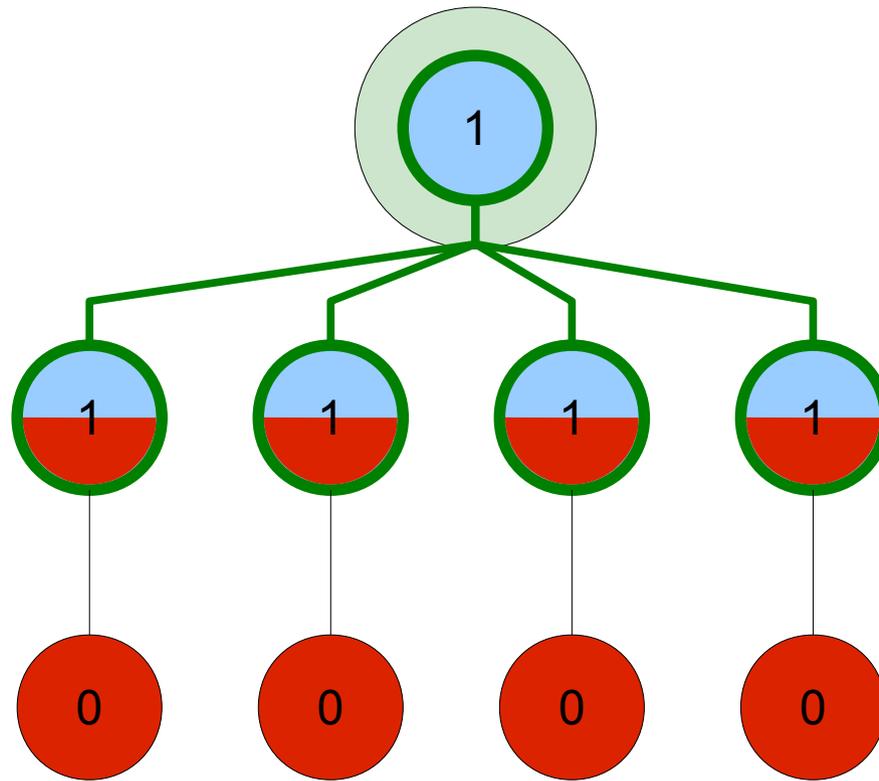


The same minor inefficiencies in forwarding is produced by all provided sample algorithms.

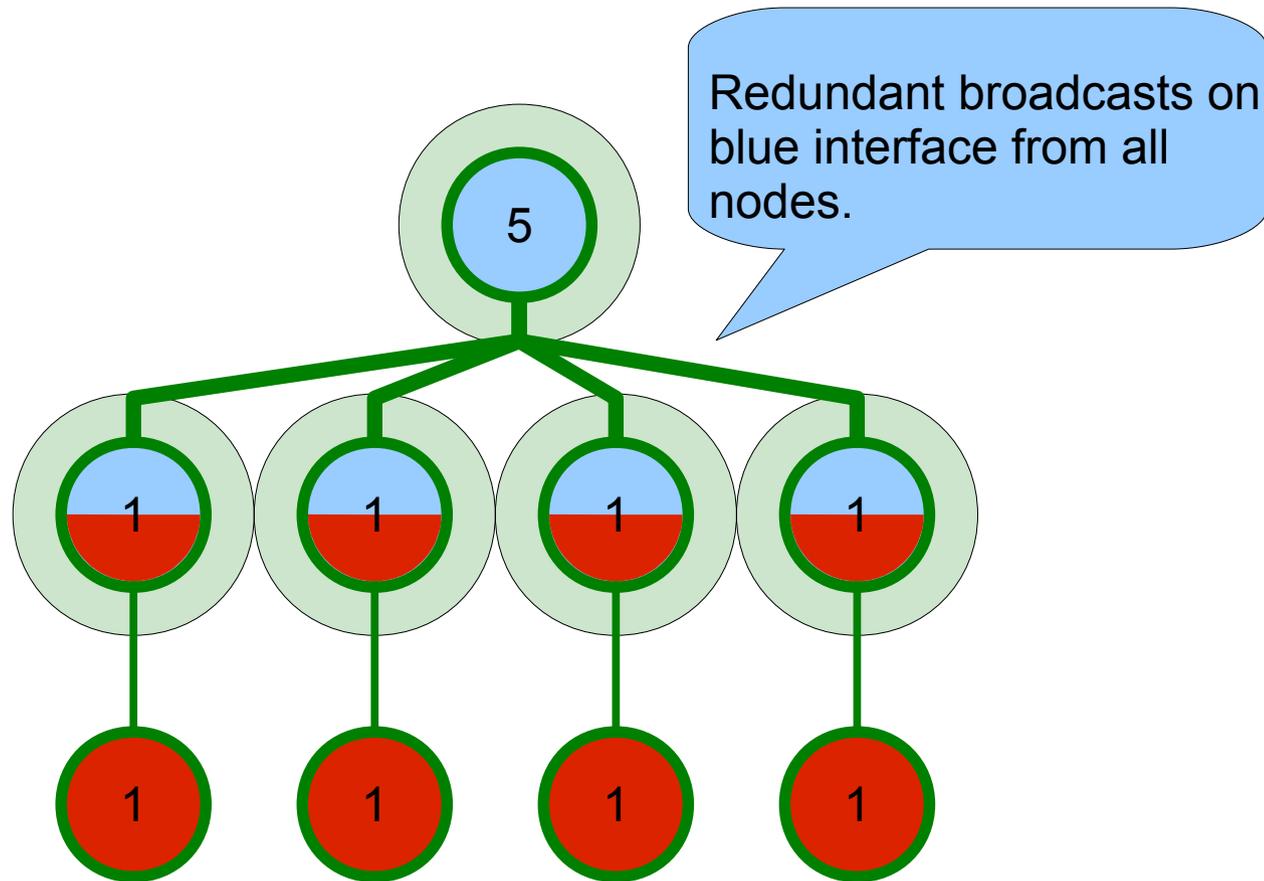
Dual Interface Example: 3



Dual Interface Example: 3

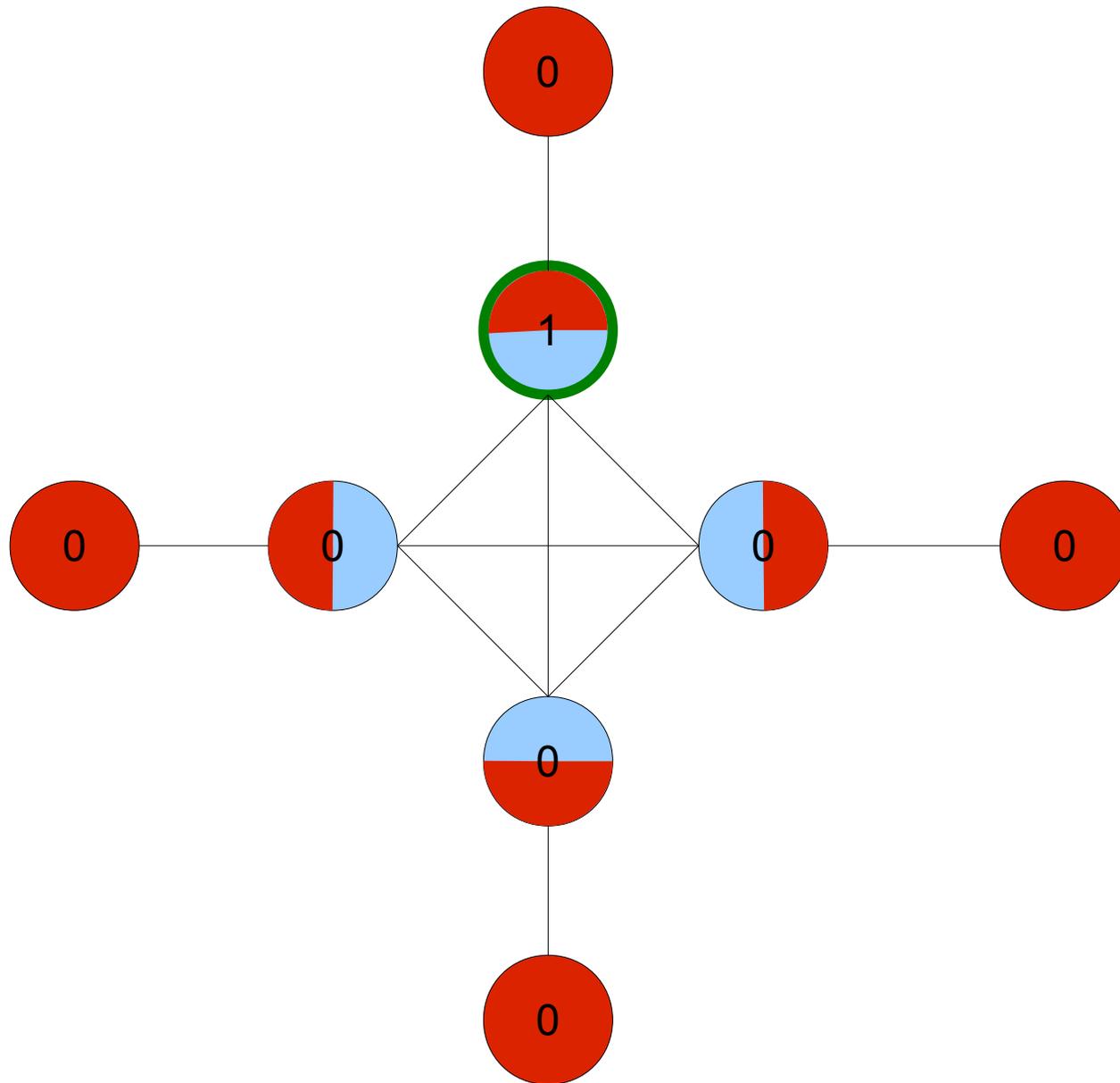


Dual Interface Example: 3

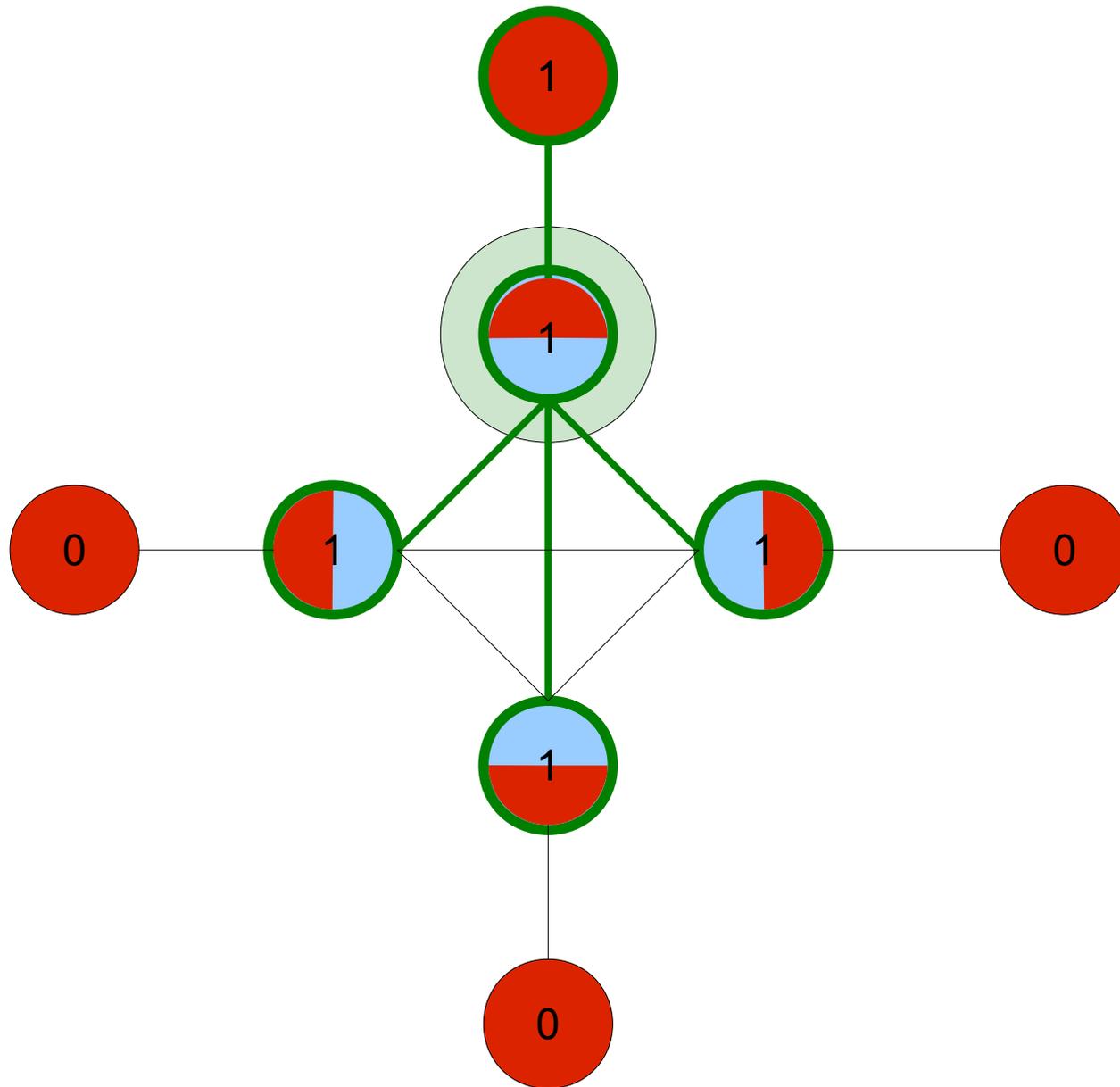


The same inefficiencies in forwarding is produced by all provided sample algorithms. Inefficiencies are not insignificant.

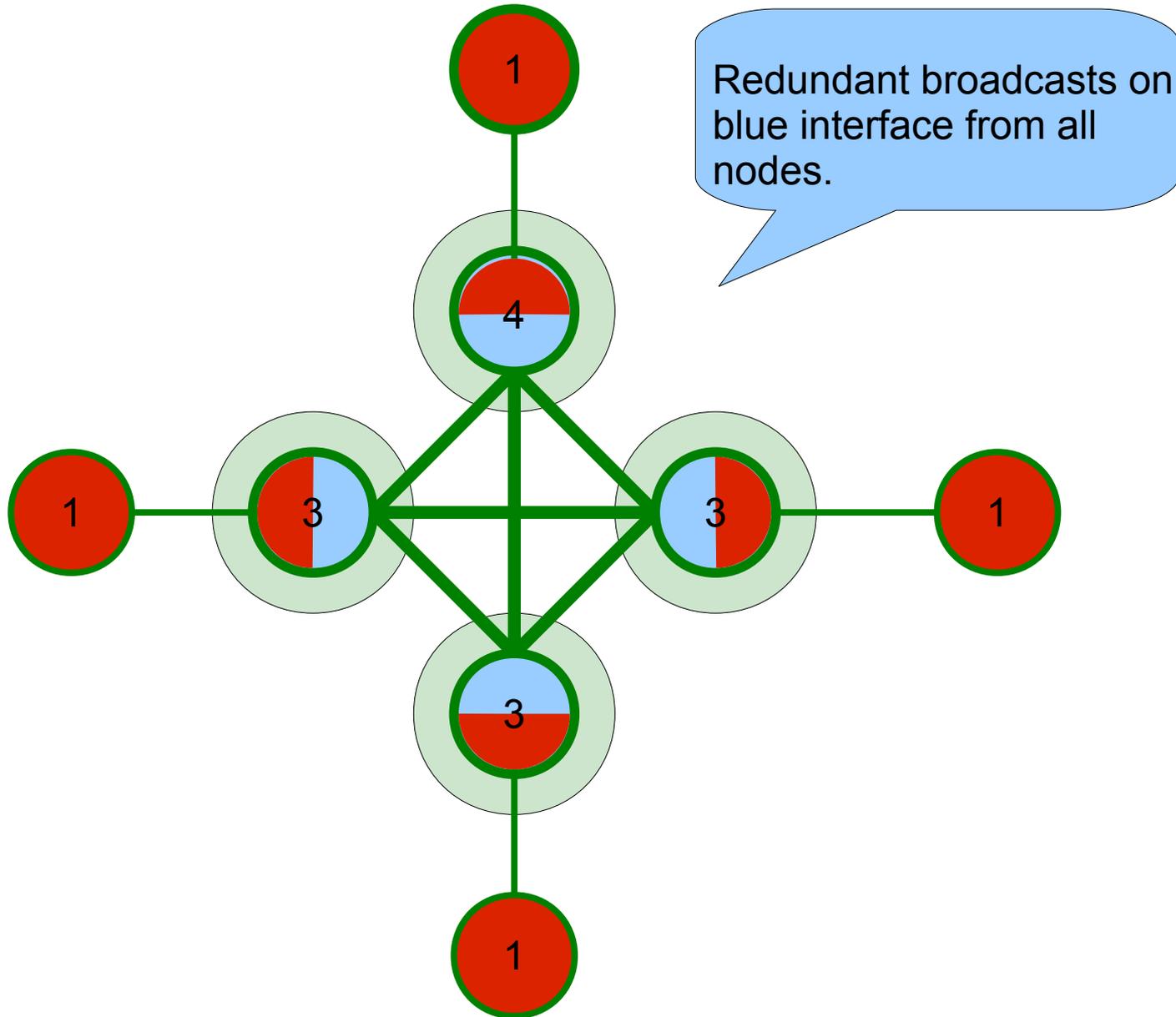
Dual Interface Example: 4



Dual Interface Example: 4



Dual Interface Example: 4



ECDS Solution/Issues

- Solution:
 - Forwarding election could be done on a per interface basis (not node.)
 - Interface on which the packet was received needs to be taken into consideration.
- Issue:
 - NHDP does not natively provide one to two hop interface connectivity information required by this modification.
 - NHDP does not provide 2 hop nodal identification.

S-MPR Solution/Issues

- Solution:
 - MPR election could specify which one hop neighbor interfaces should forward.
- Issue:
 - NHDP does not natively provide one to two hop interface connectivity information required to elect interfaces (not nodes) for forwarding.

Way forward?

- Continue with current SMF draft
 - Plus:
 - Draft is experimental
 - Algorithms work just inefficient
 - Algorithms are optional and more can be developed
 - Provides time to develop better multi-interface algorithms
 - Minus:
 - May produce draft which misses some subtle issue

Way forward?

- “Fix” the algorithms in appendix now
 - Plus:
 - Produce “better” draft
 - Minus
 - Complicated
 - Most likely won't get it right on the first try
 - Requires at least 2 more TLV definitions
 - Delayed publish date