

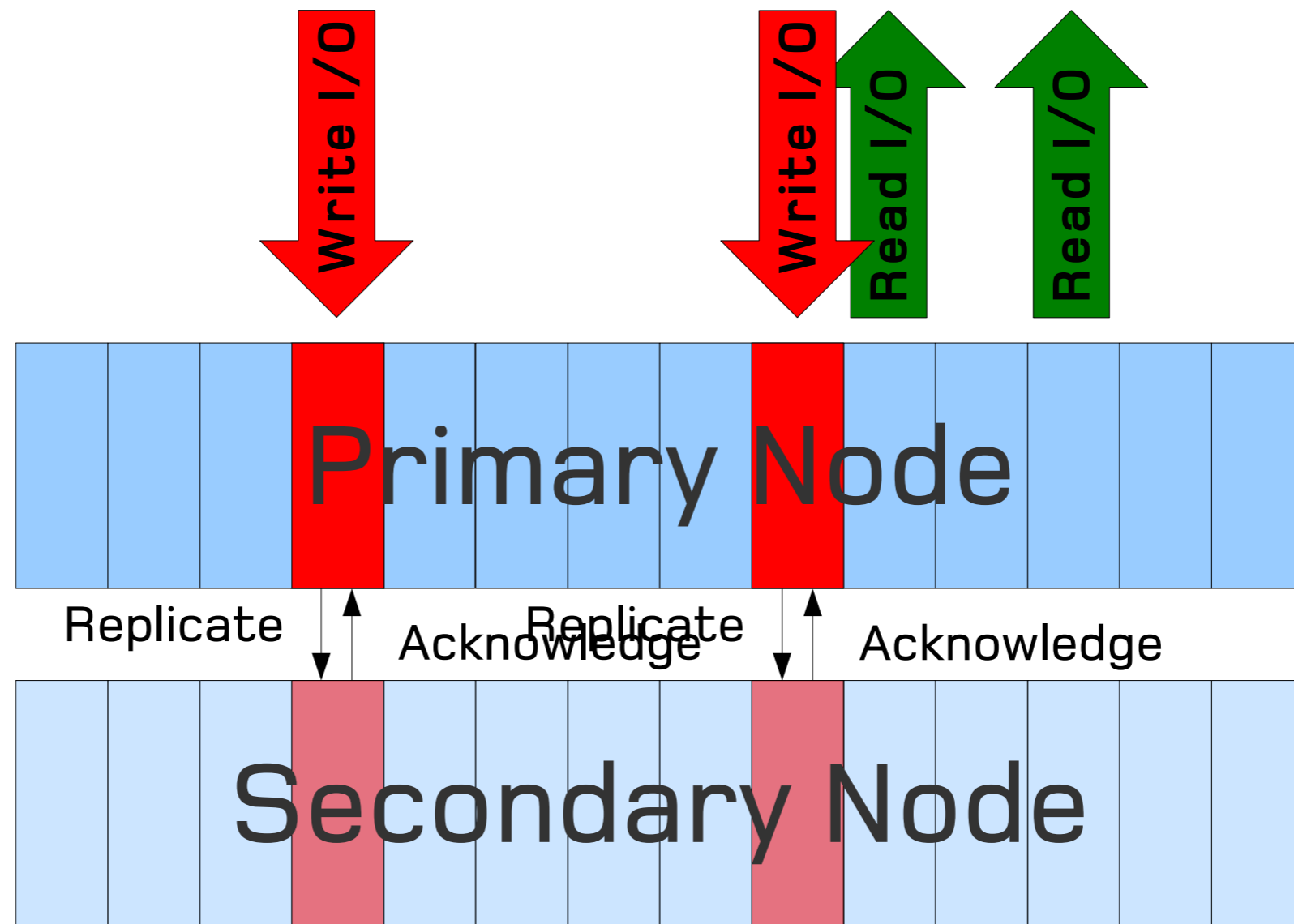


Database HA with a Punch

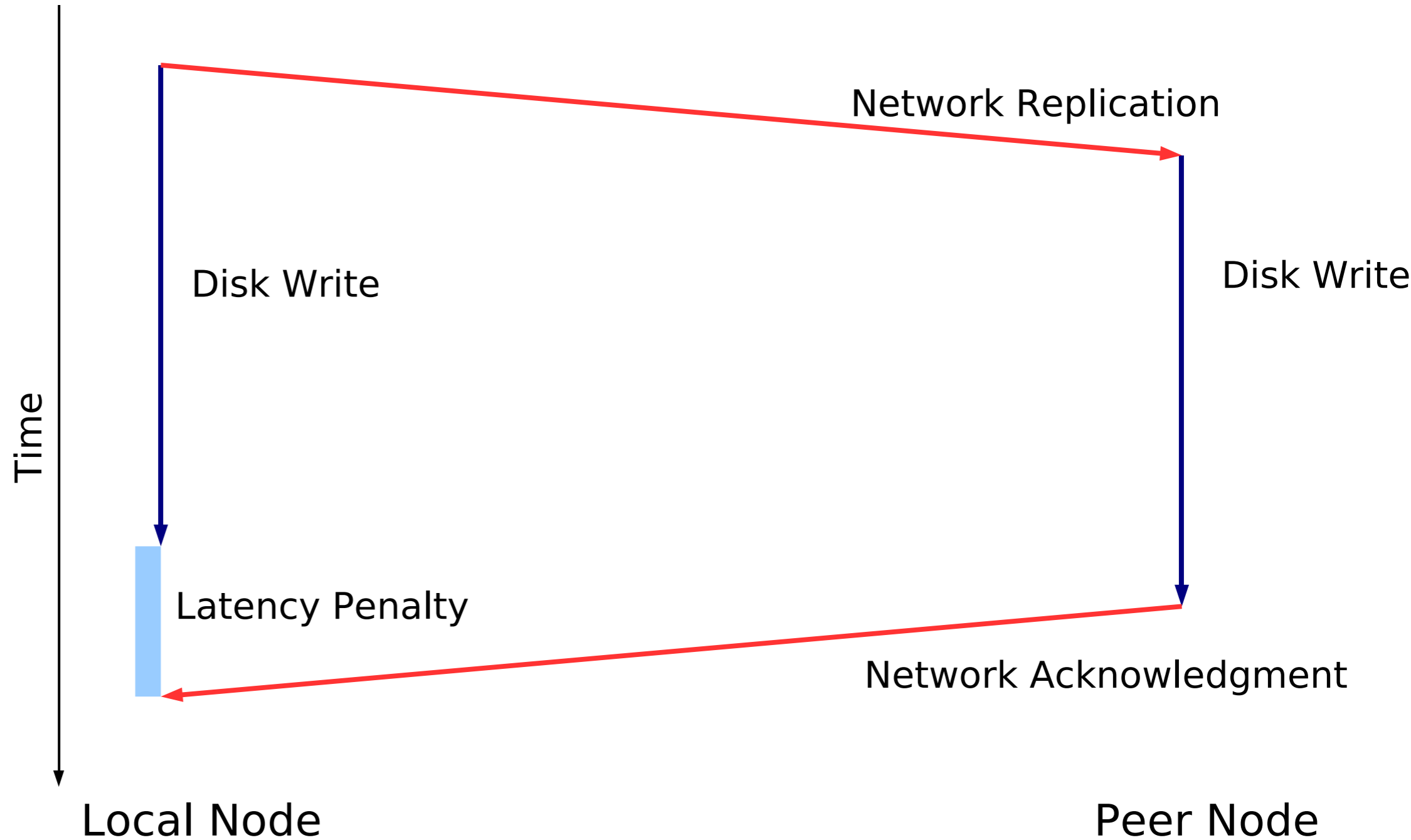
MySQL with DRBD
for Dolphin Express

Innovation Everywhere

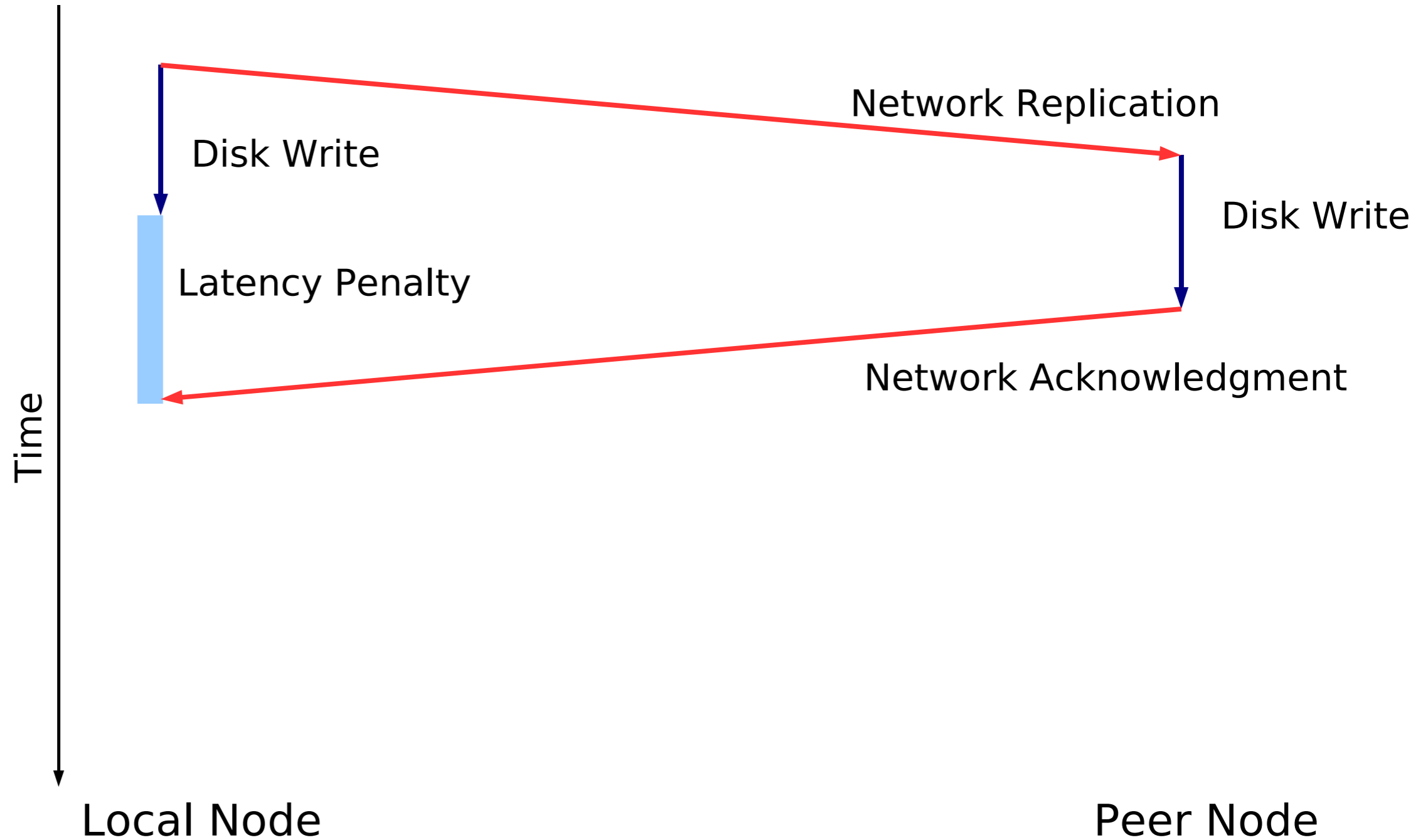
What are we talking about?



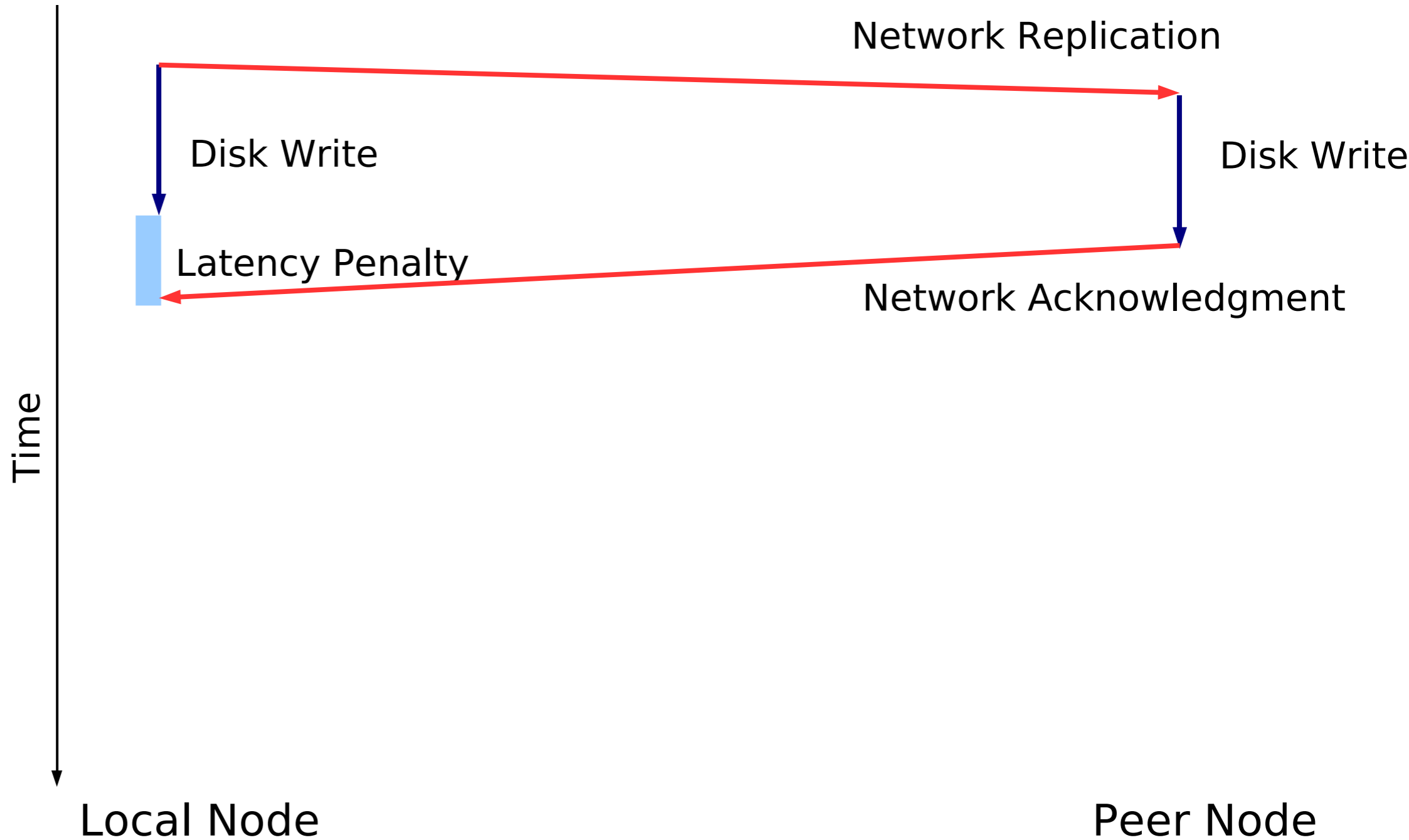
What issue did we want to solve?



What issue did we want to solve?

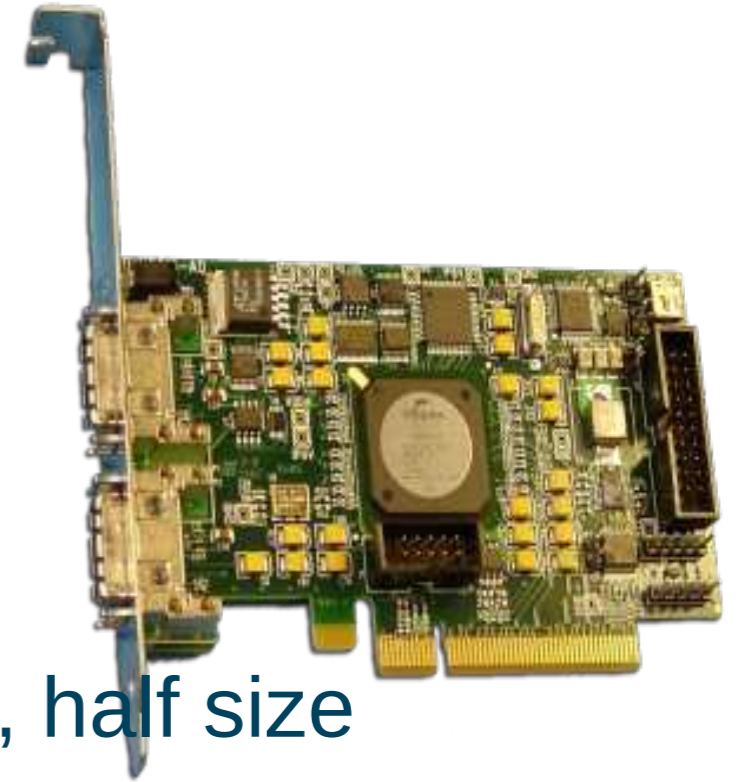


What issue did we want to solve?

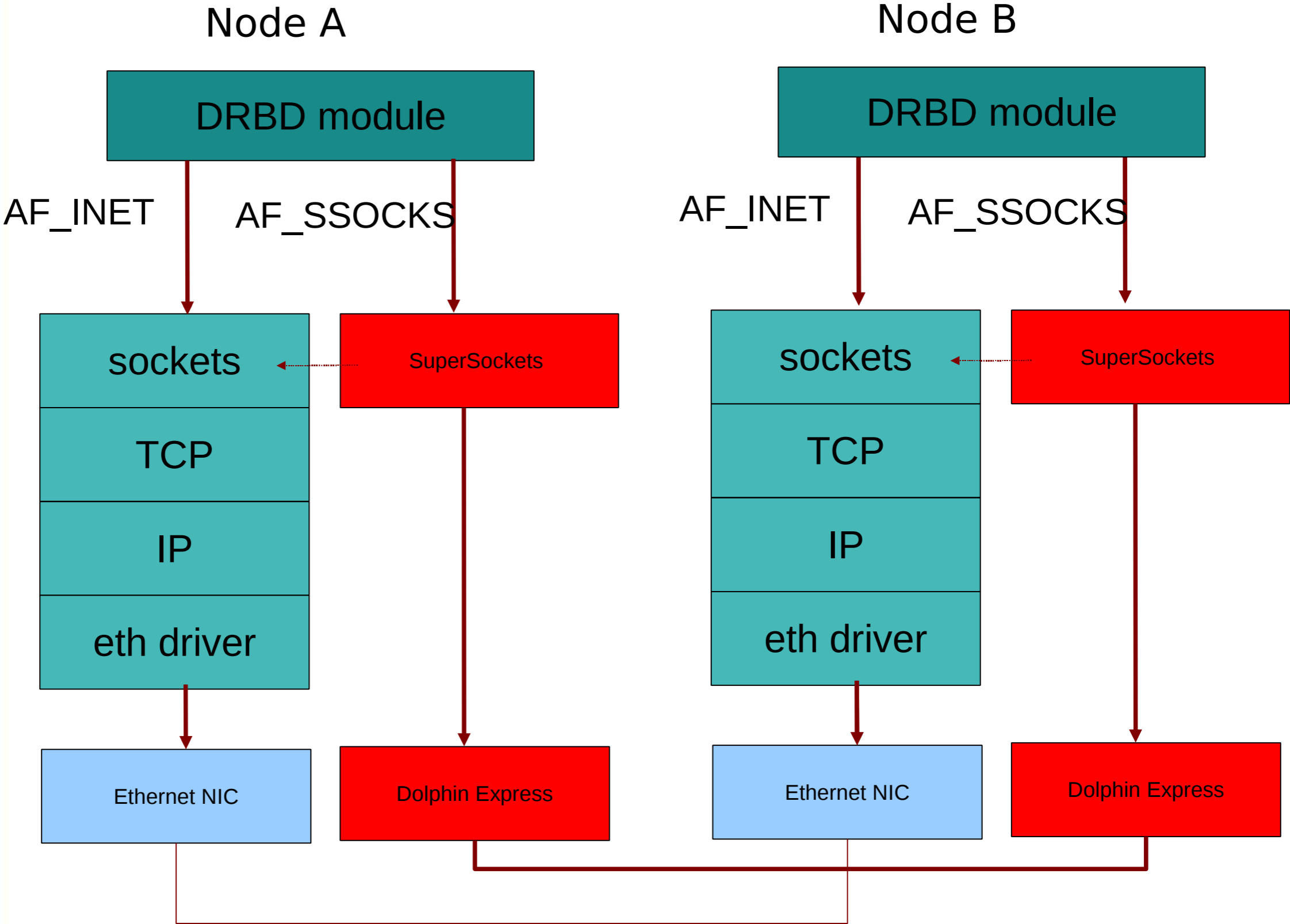


What is Dolphin Express?

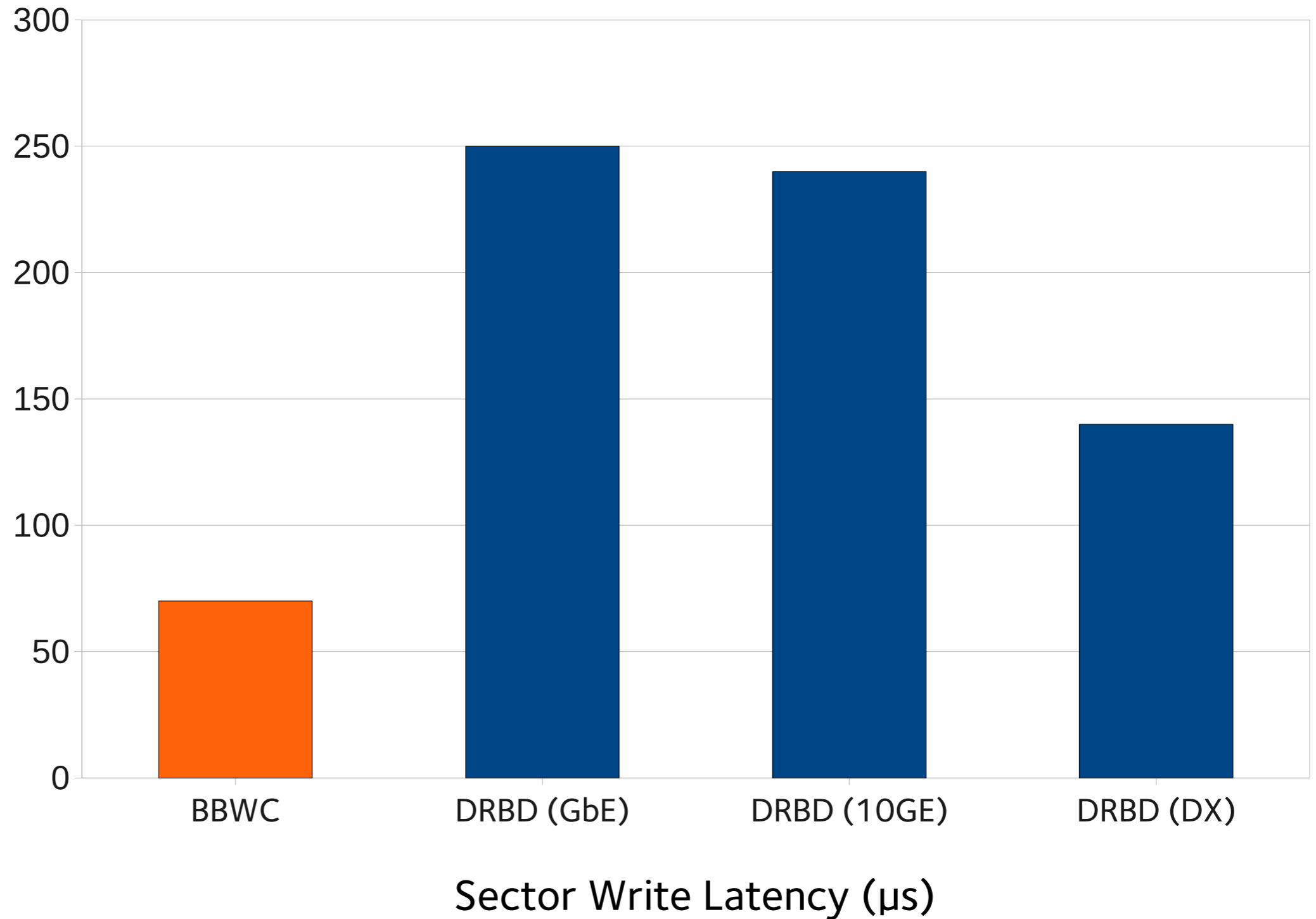
- Hostbus Adapter
- Cables:
 - Standard CX4 copper
 - Fiber
- PCI Express 1.1 x8, low profile, half size
- Low power consumption (no cooling required)
- Features:
 - Transparent remote memory access by the CPU (PIO)
 - Efficient dual-engine DMA
 - Fine-grain interrupt control



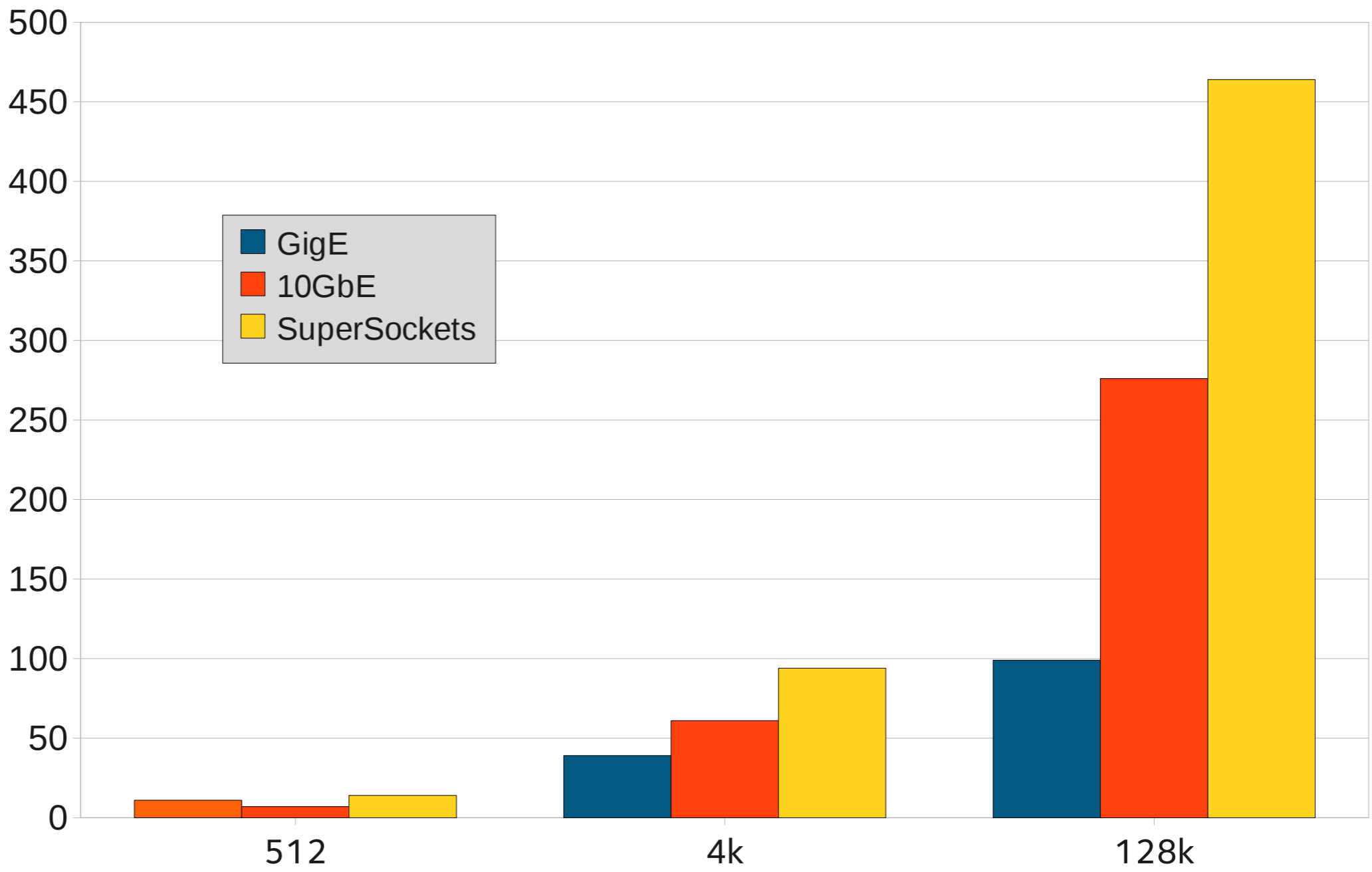
How do SuperSockets work?



What did we achieve?



What did we achieve?



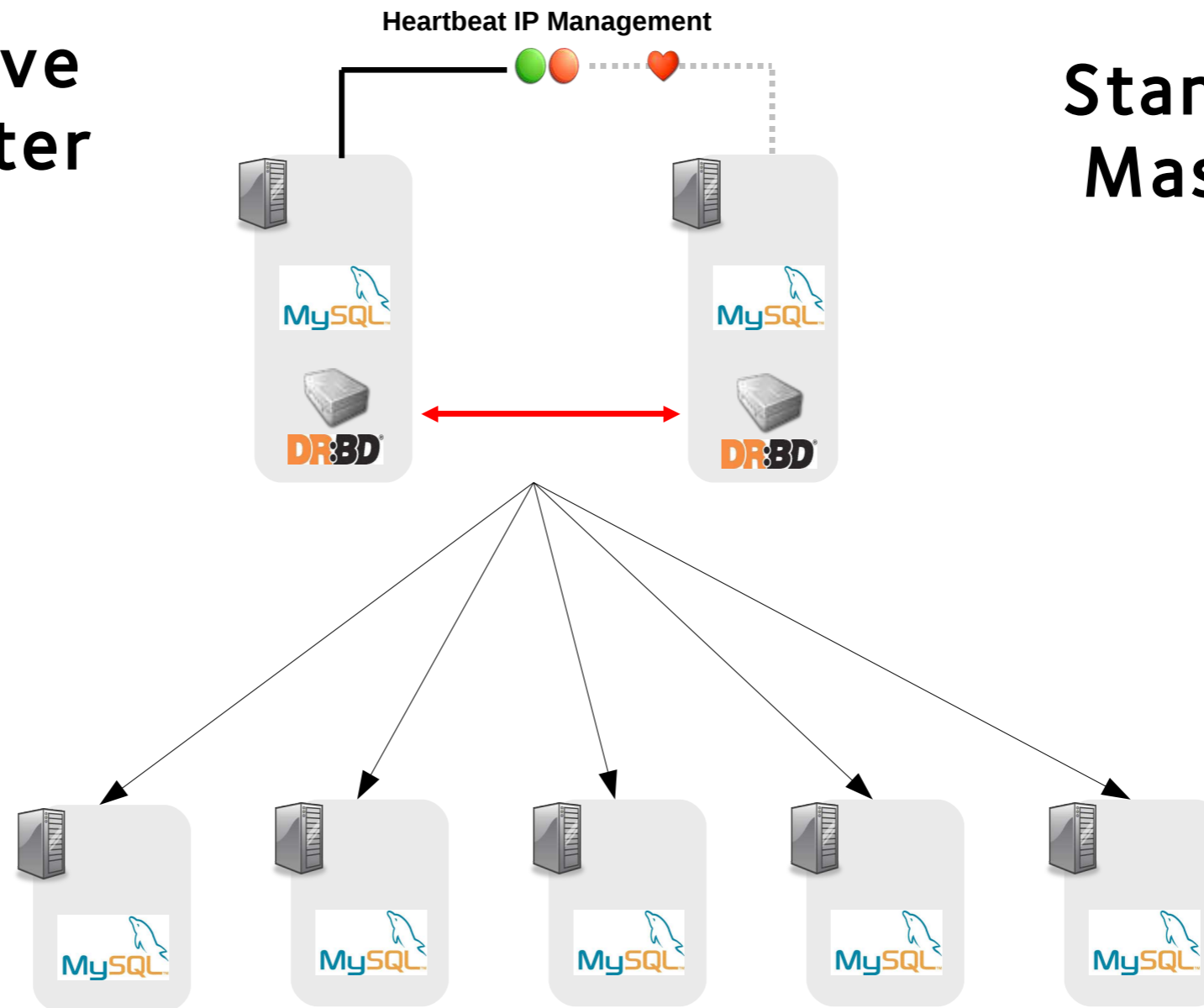
FIO Benchmark Throughput

Scale-out on Steroids!



Active Master

Standby Master



Slaves

DRBD on DX... on the fly

- Shut down Secondary, install Dolphin Express/SuperSockets
- Update DRBD
 - 8.2.7 and above with SuperSockets support
- Restart Secondary, wait for resync to complete
 - This operation will run over Ethernet (SuperSockets fail-over mode)
- Fail over, promoting Secondary to Primary
- Repeat on peer

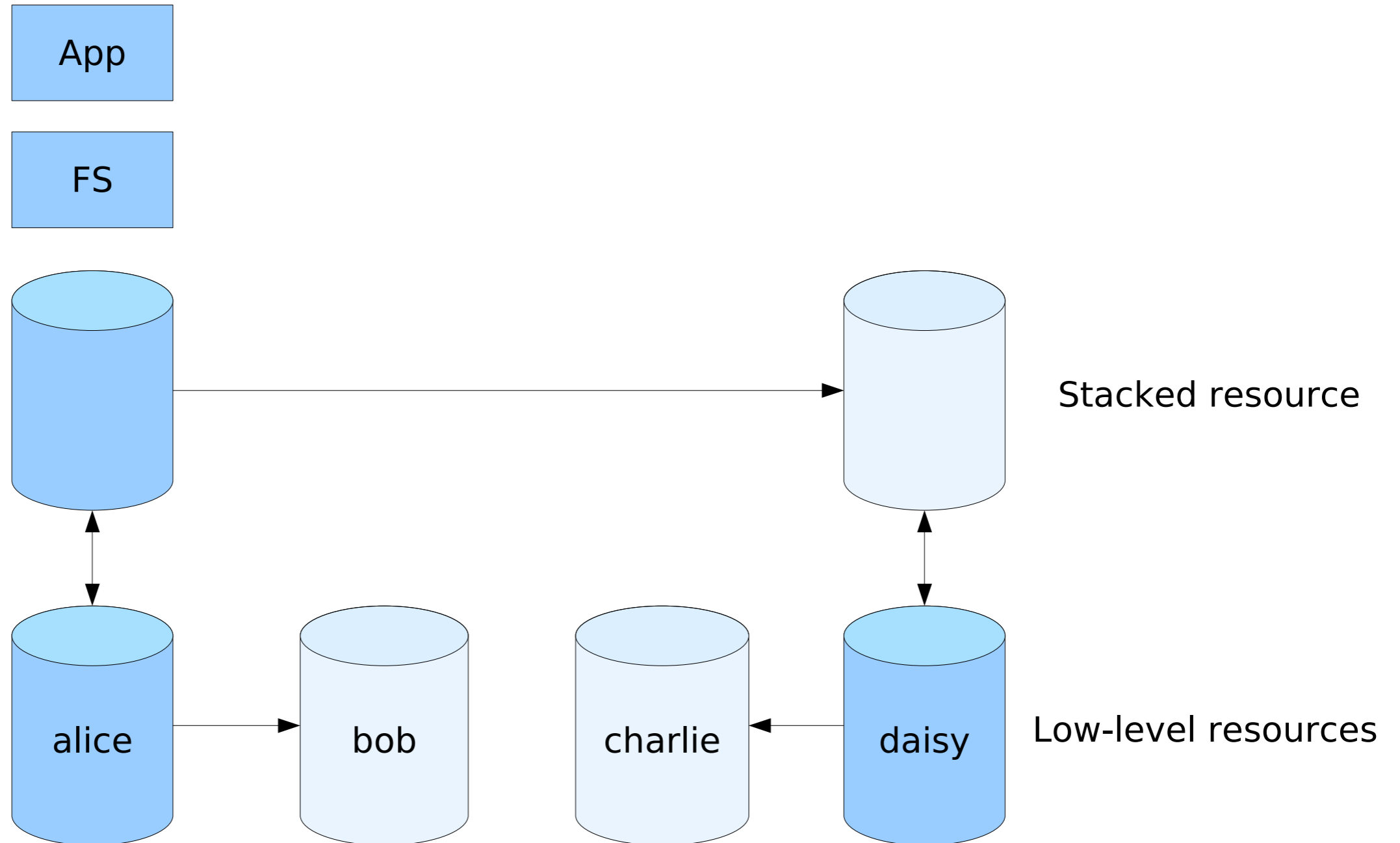
Now, DRBD will run over SuperSockets!

So what else is new?

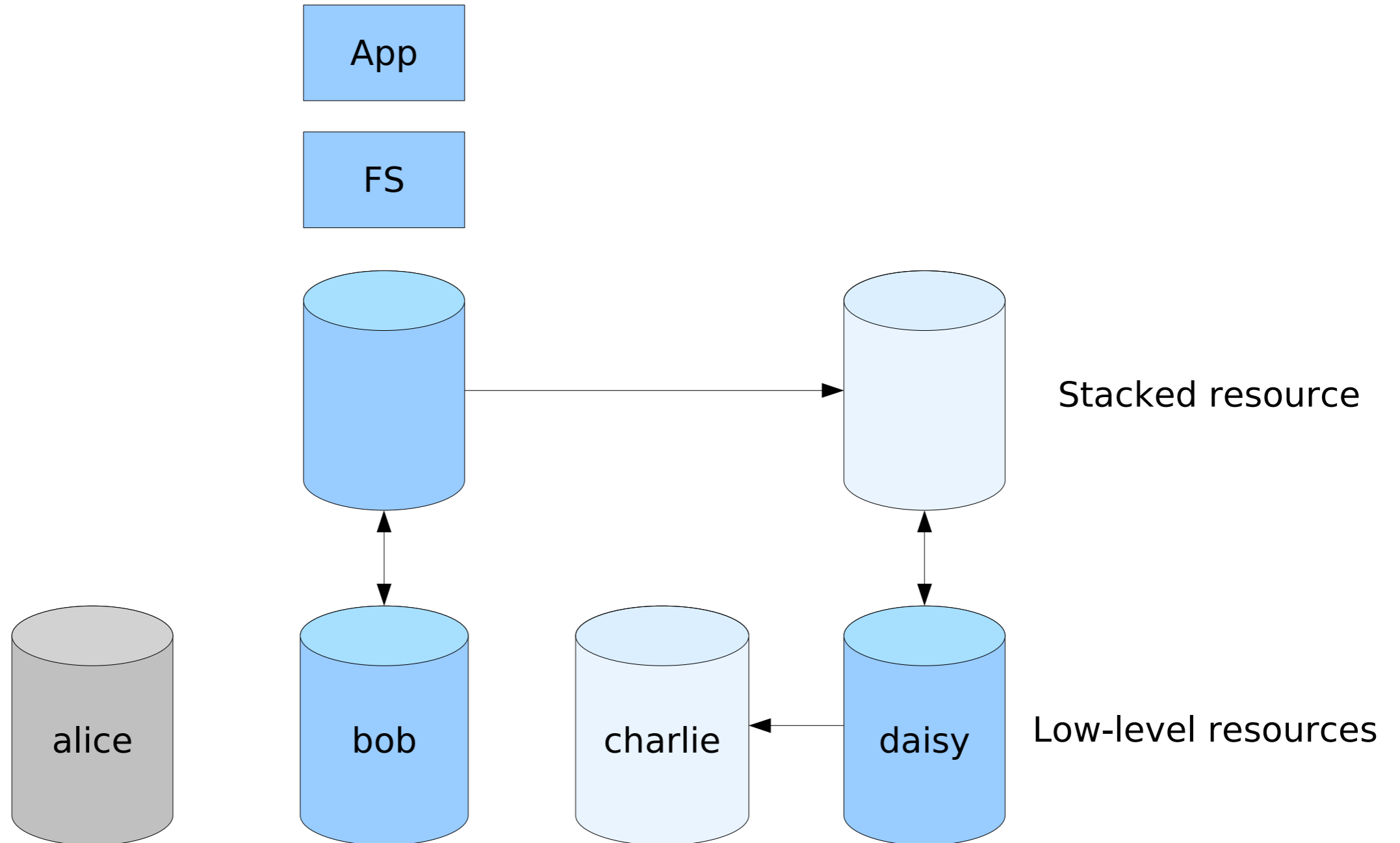
- **DRBD Device Stacking** extends cluster to 3 or 4 possible nodes
- 2 DRBD devices layered atop one another
- Top-level device is a cluster resource
- May use 2 different replication protocols



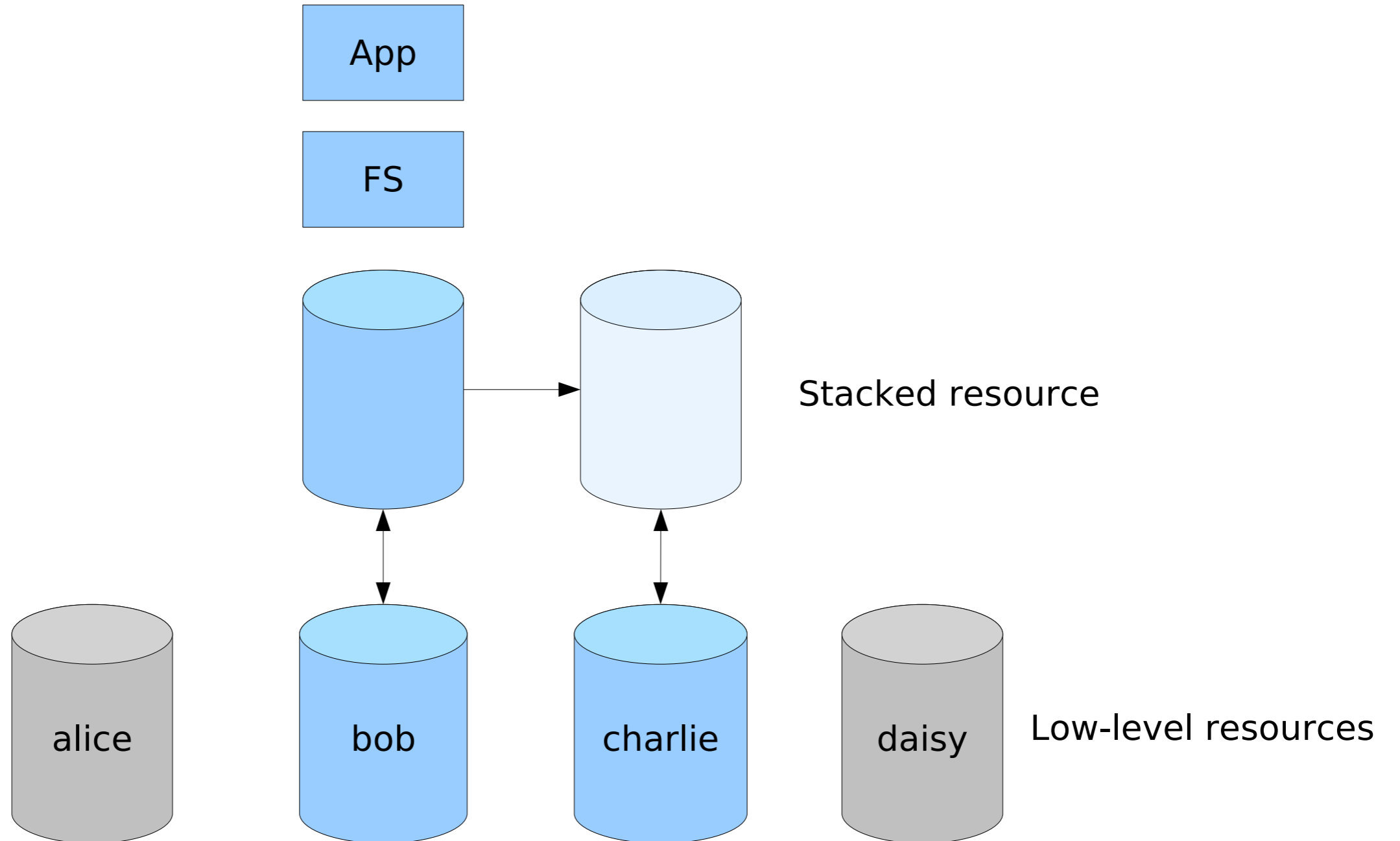
Device Stacking Explained



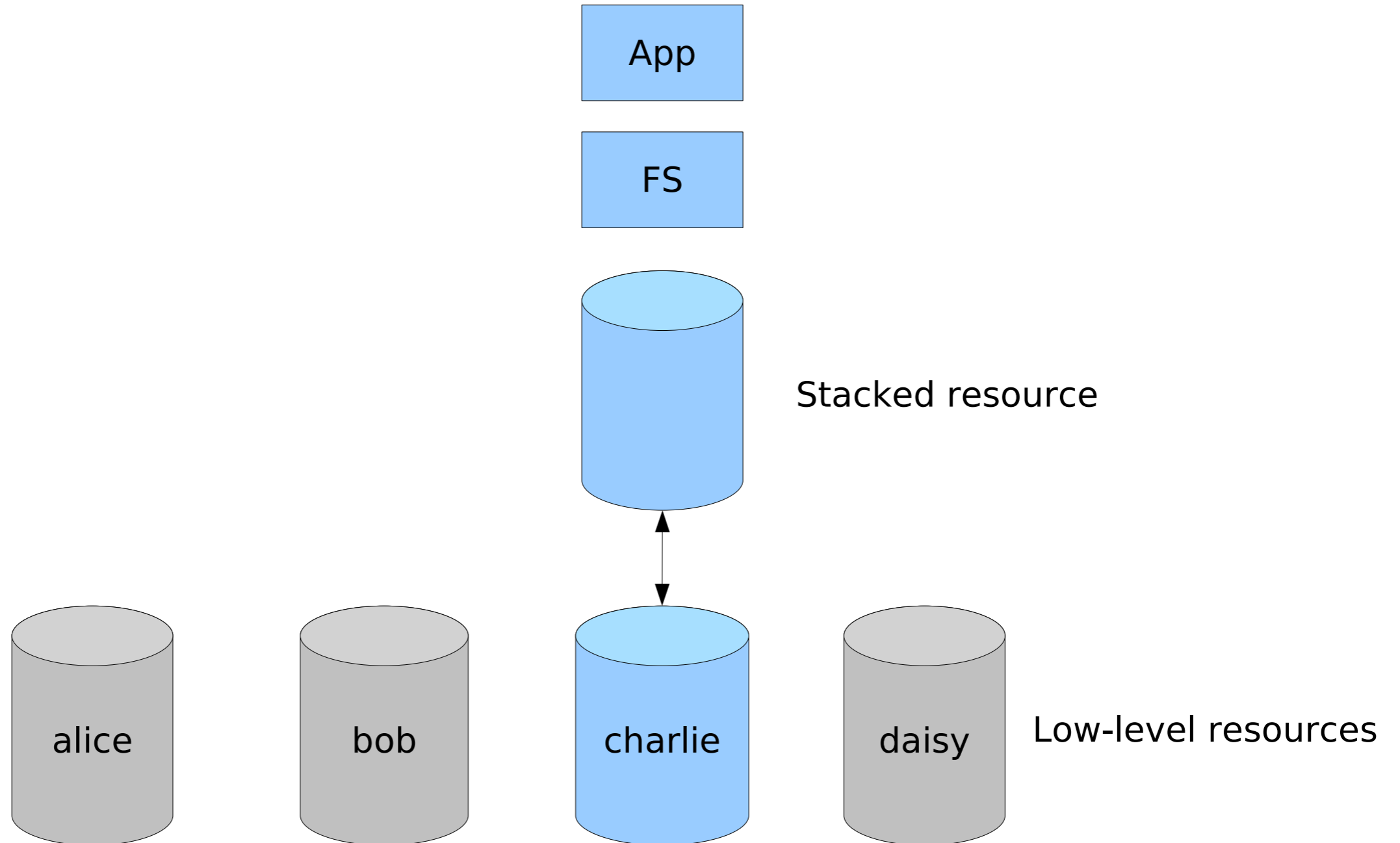
Device Stacking Explained



Device Stacking Explained



Device Stacking Explained



Post-8.3 additions



- DRBD Proxy (March 2009)
- Very efficient bandwidth utilization, plus zlib compression
- DRBD 8.3.2 (April 2009)
- Bitmap transfer RLE encoding
- Post-DRBD 8.3.2
- Removing 16 TB device limitation (up to 64 ZB?)

Questions!



Fire away...

Contact us!



Florian: florian@linbit.com
Joachim: joachim@dolphinics.com

www.linbit.com

www.dolphinics.com

www.drbd.org

www.mysql.com/drbd