



MLperf Setup
3 Sapphire Rapid Clients
3 Ice Lake Targets

Hardware

3x Client benchmark hosts

- 2x Intel® Xeon® Platinum 8480+
- 512GB DDR5-4800 RAM
- 2x 100Gbps NICs (Intel e810 or Mellanox Connect-X 5)

3x Lightbits servers

- 2x Intel(R) Xeon(R) Gold 6338 CPU
- 512 DDR4-3200 RAM
- 2x 100Gbps NICs (Intel e810 or Mellanox Connect-X 5)
- 16x 15.36TB Micron MTFDKCC15T3TGP-1BK1DABYY NVMe SSD

Networking

- 1x Nexus 9000 C9336C-FX2 Chassis

Software

Client benchmark hosts

- Ubuntu 22.04.4 LTS
- Kernel 5.15.0-118-generic
 - Kernel module - nvme_tcp
- nvme version 1.16

Lightbits servers

- Alma Linux 9.3
- Kernel 5.14.0-362.8.1.el9_3.x86_64
- Lightbits release 3.9.1
 - Dual instance-dual NUMA per server

Networking Configuration

Client benchmark hosts

- 2x 100gbps NICs (Intel e810 or Mellonox Connect-X 5)
- LACP bonding - mode 802.3ad
- xmit hash policy - layer3+4
- mii-monitor-interval - 100

Lightbits servers

- 2x 100gbps NICs (Intel e810 or Mellonox Connect-X 5)
- 2 Lightbits instance per server
 - Single 100gbps interface per instance of Lightbits

Storage Configuration

Client benchmark hosts

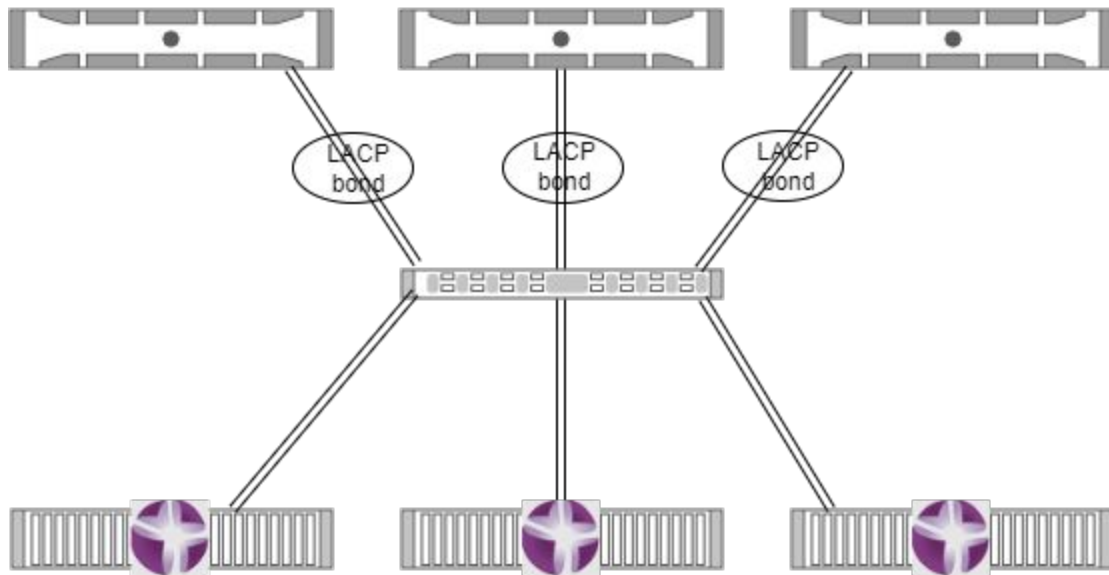
- Striped LVM with 6 Lightbits volumes
- XFS filesystem on LVM
- Mount options - noatime,nodiratime,ro

Lightbits servers

- 16x NVMe SSD per server (8x SSD per Lightbits instance)
- Compression disabled
- 6 volumes created (1 in each Lightbits instance) and presented to all clients

Network Diagram

Client Benchmark Servers



Lightbits Servers