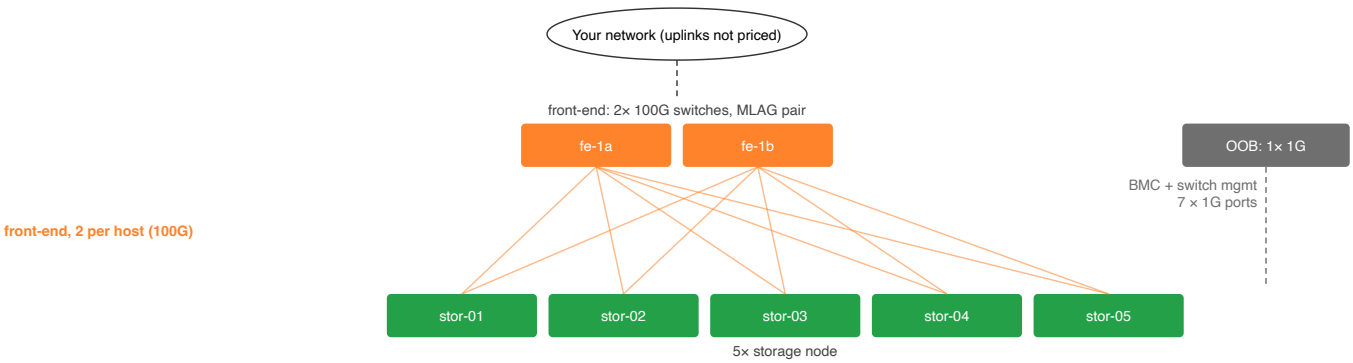
UpStation

Design **UPS-DSN-20261103-HMVH**
Prepared 2026-11-03 · prices as of 2026-11-03
Prepared for — · —

Network topology — budgetary design, not a quote

2 PB usable archive on HDD storage nodes (RAID 6), Montana colo

Topology



Fabrics

Fabric	Speed	Switches	Ports used / total	Oversubscription
front end	100G	2× 32× 100G QSFP28	14 / 64	3:1 or better
oob	1G	1× 48× 1G RJ45 + 4× 10G	7 / 48	n/a

How it was designed

1. Front-end: 2 ports per host, one to each switch of an MLAG pair of 32× 100G QSFP28 switches; 5 ports per switch of 30 usable → 1 pair(s).
2. OOB: 5 hosts + 2 switches = 7 × 1G ports → 1 × 48× 1G RJ45 + 4× 10G.

Network bill of materials

Item	Qty	Unit (USD)	Extended
32× 100G QSFP28 switch (front-end pair, MLAG)	2	$7,919.00	$15,838.00
100G 2 m passive DAC — storage nodes to the pair, 2 per node	10	$54.00	$540.00
100G 2 m passive DAC — peer link	2	$54.00	$108.00
48× 1G RJ45 + 4× 10G switch (OOB)	1	$989.00	$989.00
Cat6 patch — 1G BMC/management (not priced)	7	$0.00	$0.00
Network total			**$17,475.00**

Port map and cable schedule (19 cables, 19 connections)

Rows that share a cable ID are lanes of one breakout cable. Device names match the rack elevation.

Cable	Fabric	From	To	Cable type
C0001	front end	stor-01:FE 1	fe-1a:1	100G 2 m passive DAC
C0002	front end	stor-01:FE 2	fe-1b:1	100G 2 m passive DAC
C0003	front end	stor-02:FE 1	fe-1a:2	100G 2 m passive DAC
C0004	front end	stor-02:FE 2	fe-1b:2	100G 2 m passive DAC

C0005	front end	stor-03:FE 1	fe-1a:3	100G 2 m passive DAC
C0006	front end	stor-03:FE 2	fe-1b:3	100G 2 m passive DAC
C0007	front end	stor-04:FE 1	fe-1a:4	100G 2 m passive DAC
C0008	front end	stor-04:FE 2	fe-1b:4	100G 2 m passive DAC
C0009	front end	stor-05:FE 1	fe-1a:5	100G 2 m passive DAC
C0010	front end	stor-05:FE 2	fe-1b:5	100G 2 m passive DAC
C0011	front end	fe-1a:31	fe-1b:31	100G 2 m passive DAC
C0012	front end	fe-1a:32	fe-1b:32	100G 2 m passive DAC
C0013	oob	stor-01:BMC	oob-1:1	Cat6 patch
C0014	oob	stor-02:BMC	oob-1:2	Cat6 patch
C0015	oob	stor-03:BMC	oob-1:3	Cat6 patch
C0016	oob	stor-04:BMC	oob-1:4	Cat6 patch
C0017	oob	stor-05:BMC	oob-1:5	Cat6 patch
C0018	oob	fe-1a:mgmt	oob-1:6	Cat6 patch
C0019	oob	fe-1b:mgmt	oob-1:7	Cat6 patch

Topology (Mermaid source)

```
flowchart TB
  FE["Front-end MLAG pair: 2× 32× 100G QSFP28<br/>100G, storage converged"]
  SN["5× 2U HDD storage node"] -- "2× 100G per node" --> FE
  FE -. "uplinks to your core (not priced)" .-> CORE(("Your network"))
  OOB["OOB: 1× 1G switch"] -. "BMC, 7 ports" .- SN
```

Assumptions

- None beyond the catalog conventions.

Next step. Book the intro (https://calendly.com/alecglover/intro-call) or email alec@upstation.io with the design ID; UpStation validates the design and introduces the supplier that fits.

Prepared by UpStation from public supplier prices published at ai.upstation.io (prices as of 2026-11-03). Budgetary only: the supplier confirms price, availability and lead time on order. UpStation does not resell; buyers transact directly with the supplier. alec@upstation.io