UpStation

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

Budgetary design and estimate — not a quote

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

5× 2U HDD storage node storage (2,039.0 TB plannable, raid6_10+2). Networks: front end 100G on 2 switches; oob 1G on 1 switch. 1 rack at ≤ 40 kW, 4.59 kW provisioned, in Montana colo. Every figure is computed from the ai.upstation.io catalog with the arithmetic shown below.

$297,543.55	**$1,193.00/mo**	**$311,859.55**	**$340,491.55**	**$369,123.55**
hardware (CapEx)	colocation, 4.59 kW	year one	3-year total	5-year total

Delivery: 5 weeks, set by 2U HDD storage node, single socket, 24x 24TB SAS (576TB raw) — ASG-2015S-E1CR24H. **Colo:** Montana at $260/kW/month × 4.59 kW, 36-month term.

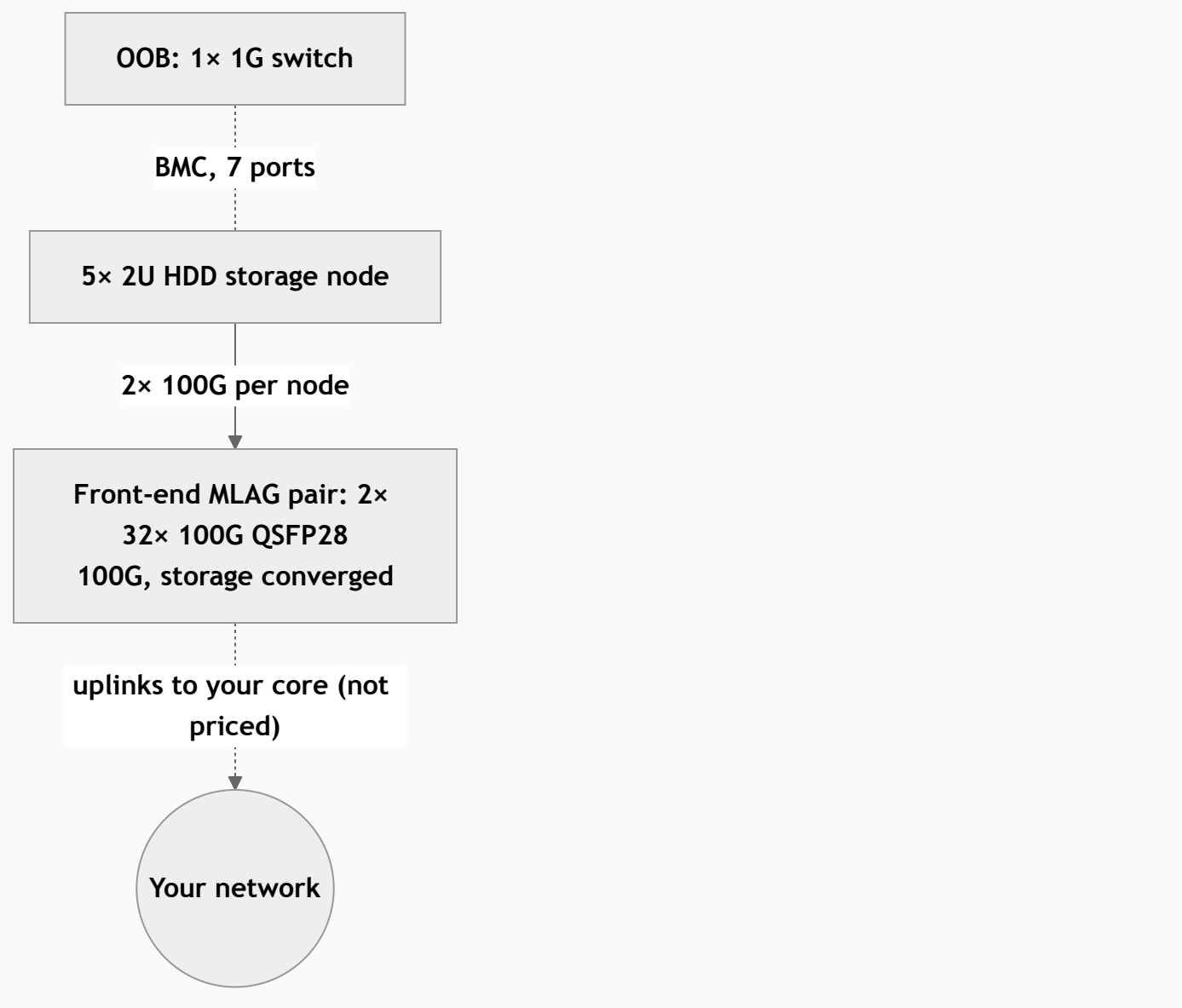
Requirements

Workload	storage
Storage	2000 TB, HDD
Rack limit	40 kW
Colo	Montana

How it was designed

1. Storage (raid6_10+2, per node): plannable = 576 TB × 0.833 × 0.85 = 407.8 TB per node; ceil(2,000.0 ÷ 407.8) = 5 nodes = 2,039.0 TB.
2. 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).
3. OOB: 5 hosts + 2 switches = 7 × 1G ports → 1 × 48× 1G RJ45 + 4× 10G.
4. Services 1: 13 U, 4.59 kW provisioned → 1 × 208V 1-ph 30A circuit pair (A+B), 74% of each feed; 8 power cords per feed.

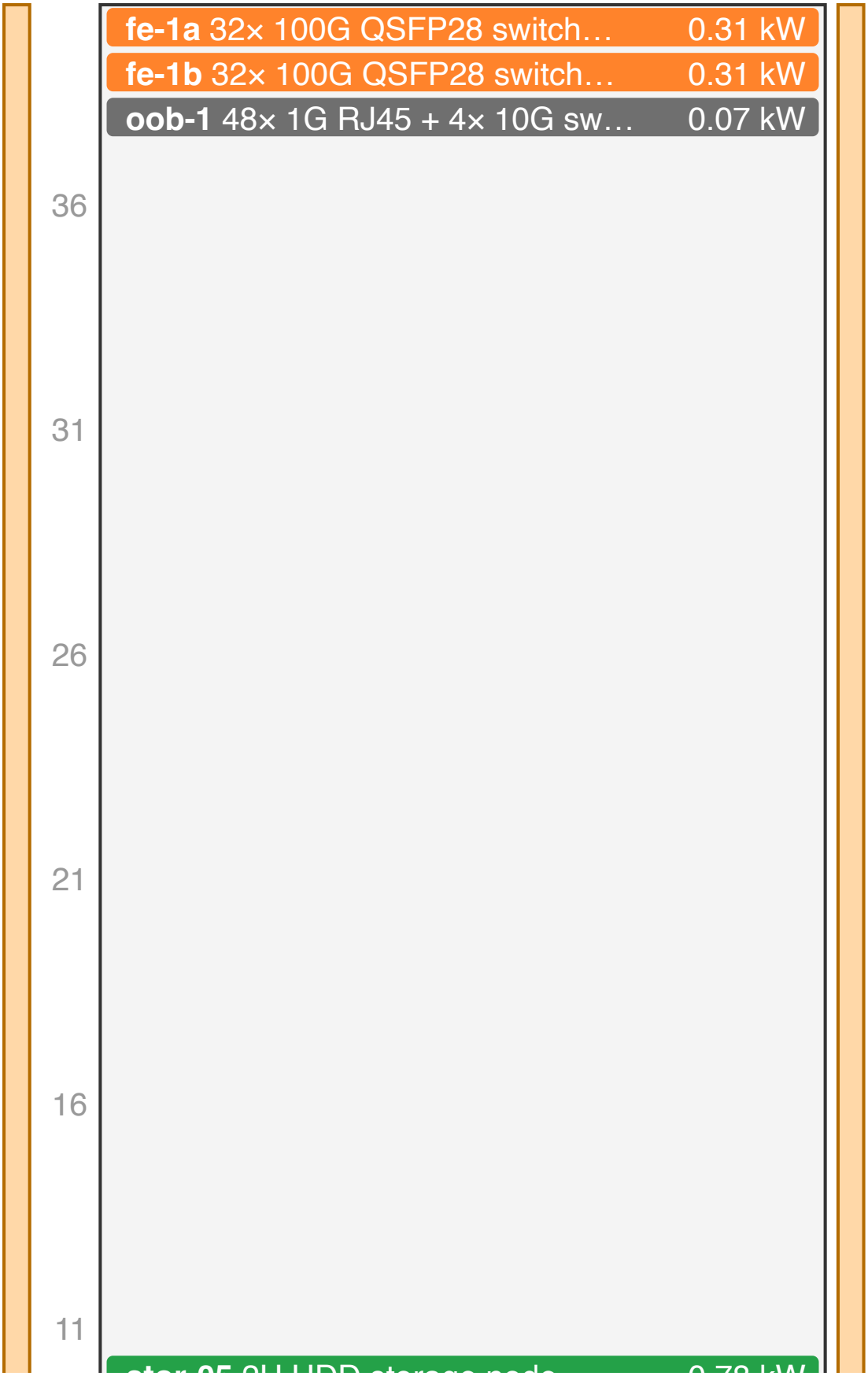
Network topology

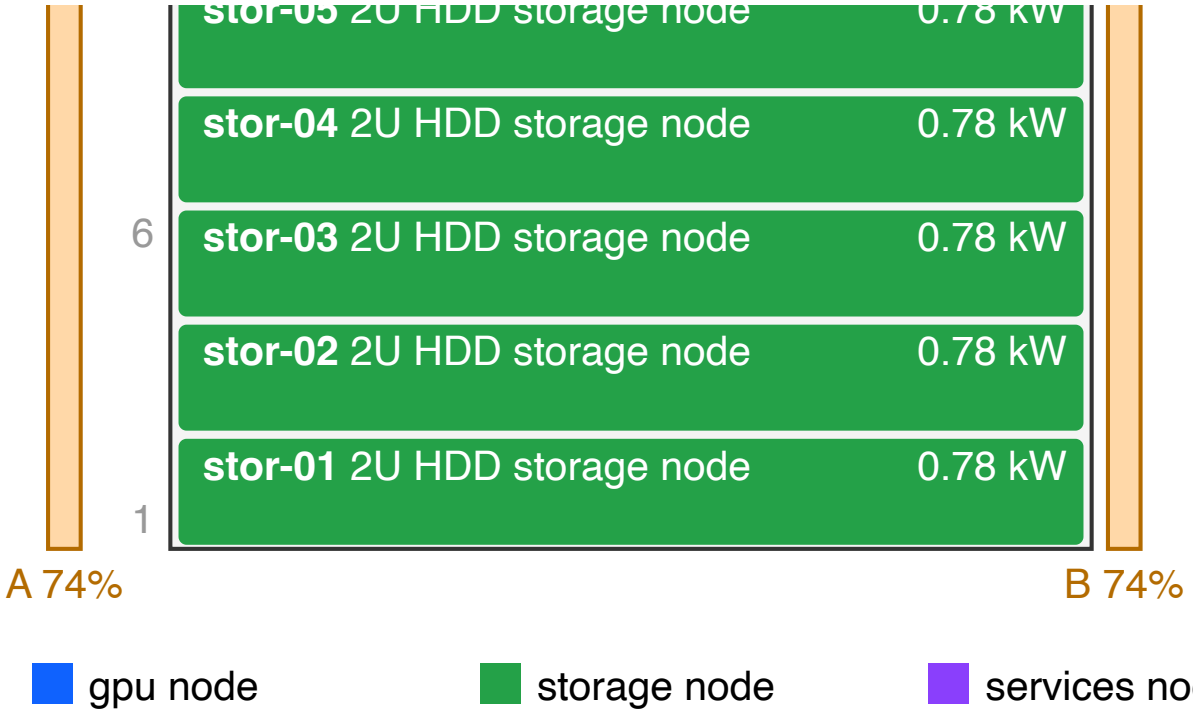


Rack elevation and power

Services 1

13/40 U · 4.59 kW · 1× 208V 1-ph 30A A+B





Rack	Space	Provisioned	Circuits	Devices
Services 1	13/40 U	4.59 kW	1× 208V 1-ph 30A (A+B)	2× 32× 100G QSFP28 switch — front-end pair, MLAG, 1× 48× 1G RJ45 + 4× 10G switch — OOB, 5× 2U HDD storage node

Bill of materials

Item	Qty	Unit (USD)	Extended	Lead time	Source
Storage					
2U HDD storage node, single socket, 24x 24TB SAS (576TB raw) — ASG-2015S-E1CR24H	5	56,013.71	280,068.55	Barebone in stock (2026-11-03); configure-to-order. Est. 3-5	/p/UPS-SN-AMD-HDD
Front-end network					
32× 100G QSFP28 switch (front-end pair, MLAG) — FS N8560-32C, PicOS	2	7,919.00	15,838.00	In stock (1 US, 49 global, 2026-11-03). 1 day to ~1 week	/p/UPS-NET-100G-32
Front-end network cabling					
100G 2 m passive DAC — storage nodes to the pair, 2 per node	10	54.00	540.00		/switches
100G 2 m passive DAC — peer link	2	54.00	108.00		/switches
Out-of-band					
48× 1G RJ45 + 4× 10G switch (OOB) — FS S3410-48TS, PicOS	1	989.00	989.00	593 in stock (global warehouse, 2026-11-03). ~1 week	/p/UPS-NET-1G-48
Hardware total			**$297,543.55**		

Assumptions

- None beyond the catalog conventions.

Not included

- Racks, PDUs, whips and cabling labour
- Uplinks to the buyer's core network
- Software (cluster manager, storage software), unless listed
- Taxes, shipping and duties
- Installation and on-site services

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