



**Televisa Noticieros + Invest. Especiales -
M-Series Refresh/Consolidation - H4000 - V1**

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Drawn By		Igor Tonini	
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CONTACT INFORMATION

Quantum Account Team

RSM: Marcelo Gasull
Phone: +55 27 999 047 957
Email: Marcelo.Gasull@quantum.com

TSM: Santiago Fernandez
Phone: +55 11 963 836 449
Email: Santiago.Fernandez@quantum.com

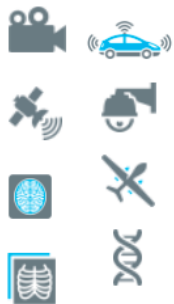
SE: Igor Tonini
Phone: +55 11 981 368 746
Email: igor.tonini@quantum.com



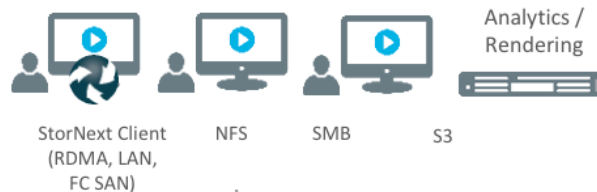
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Quantum Stornext 7 - Data Management Platform

Fastest streaming performance to handle the high speed ingest requirements for the large files being generated by cameras, satellites, sensors, and other devices



Enable high speed collaboration across teams, sites, and departments with the **most connectivity options** in the industry.



StorNext policy-based data placement

Reduce storage and protection costs, manage data across its lifecycle with automated data management and protection policies.



ActiveScale Object Storage
For large scale active archives



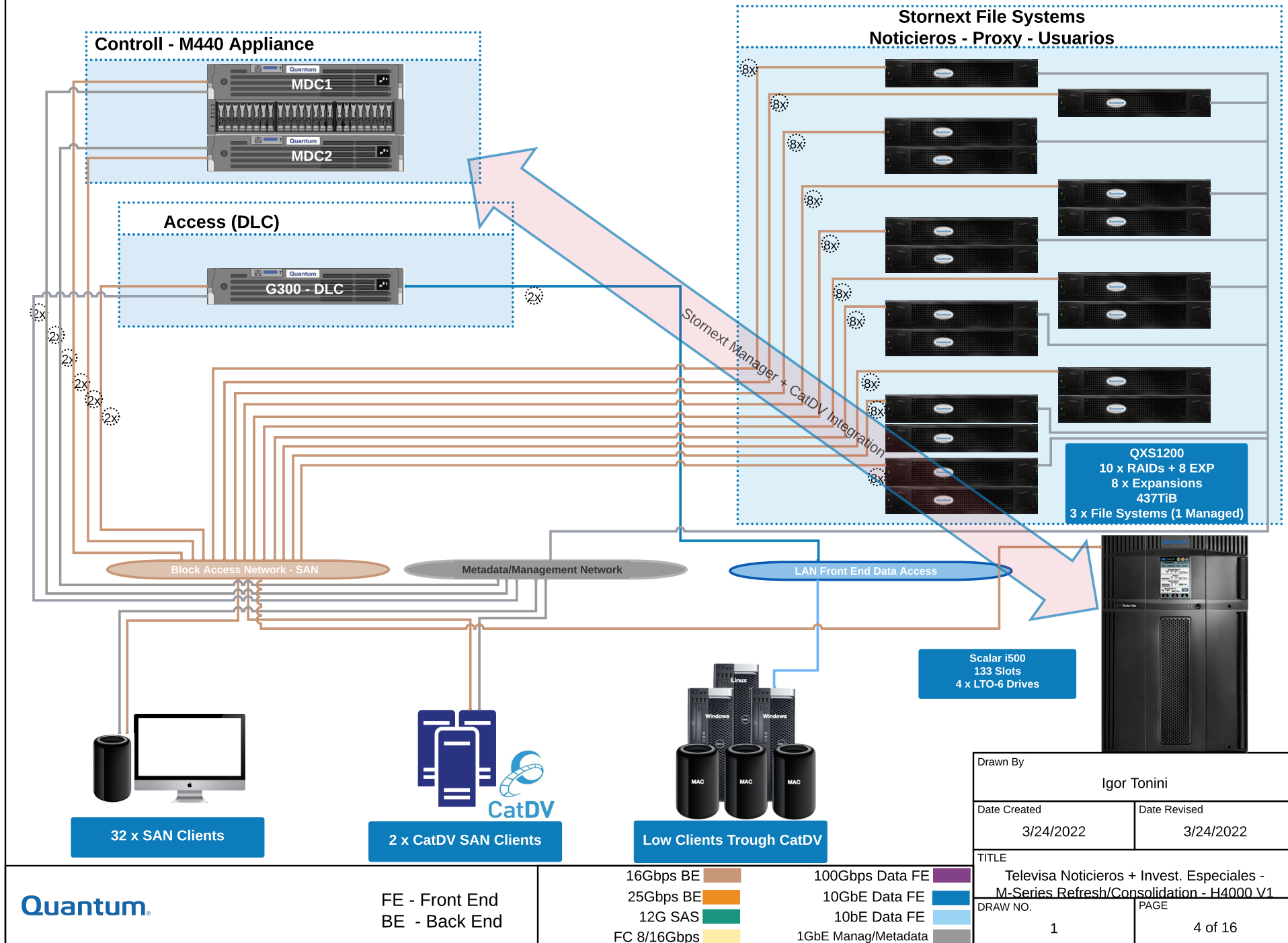
Tier to Cloud with StorNext FlexTier™
Move content to/from leading cloud providers



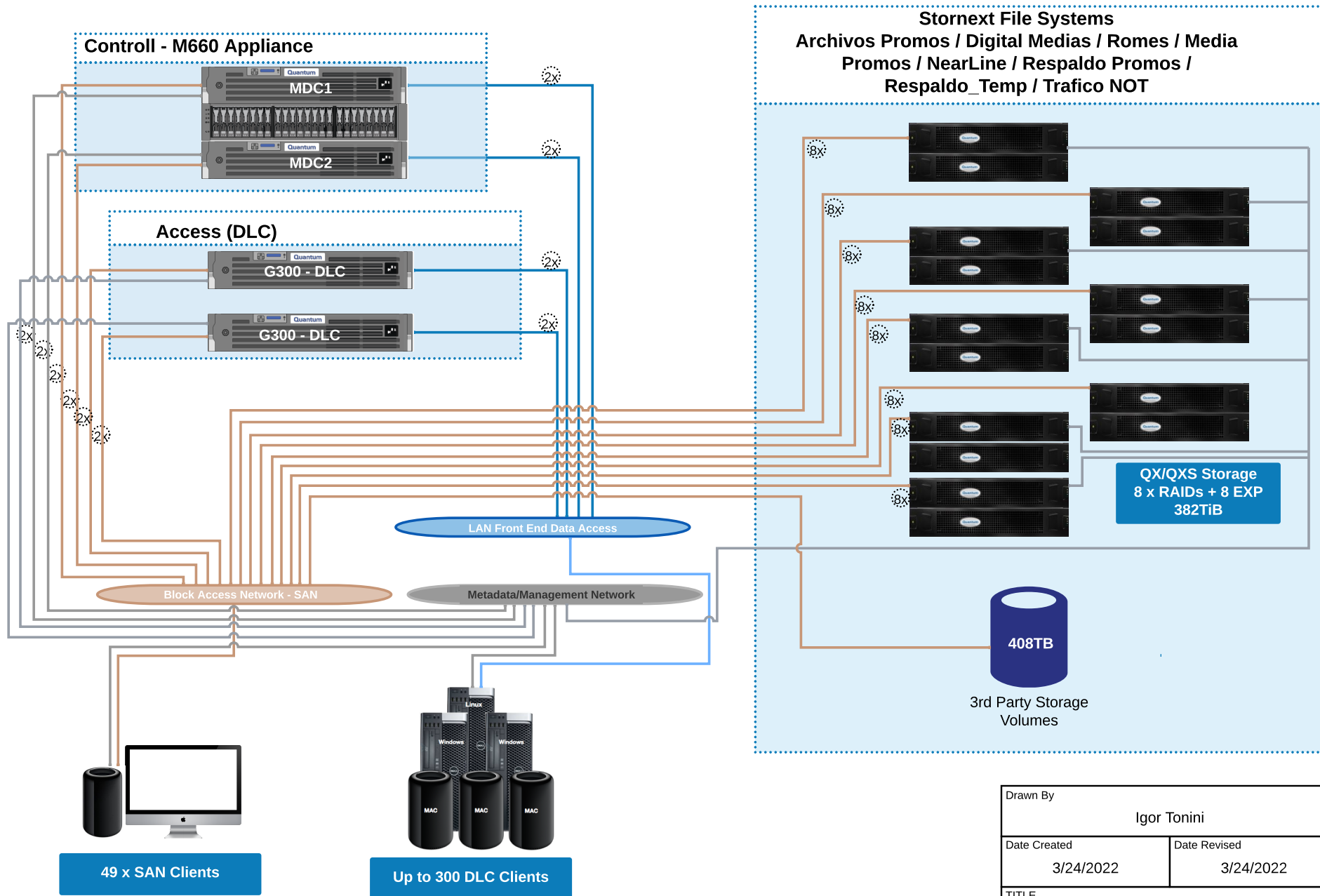
Digital Tape Archive
Lowest cost, offline storage

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Actual Environment - M440 Noticieros - CX1339CKD00046 - Stornext 5.4.0.1



Actual Environment - M660 Canal 4 - AV1437CKB00025 - Stornext 6.4.1



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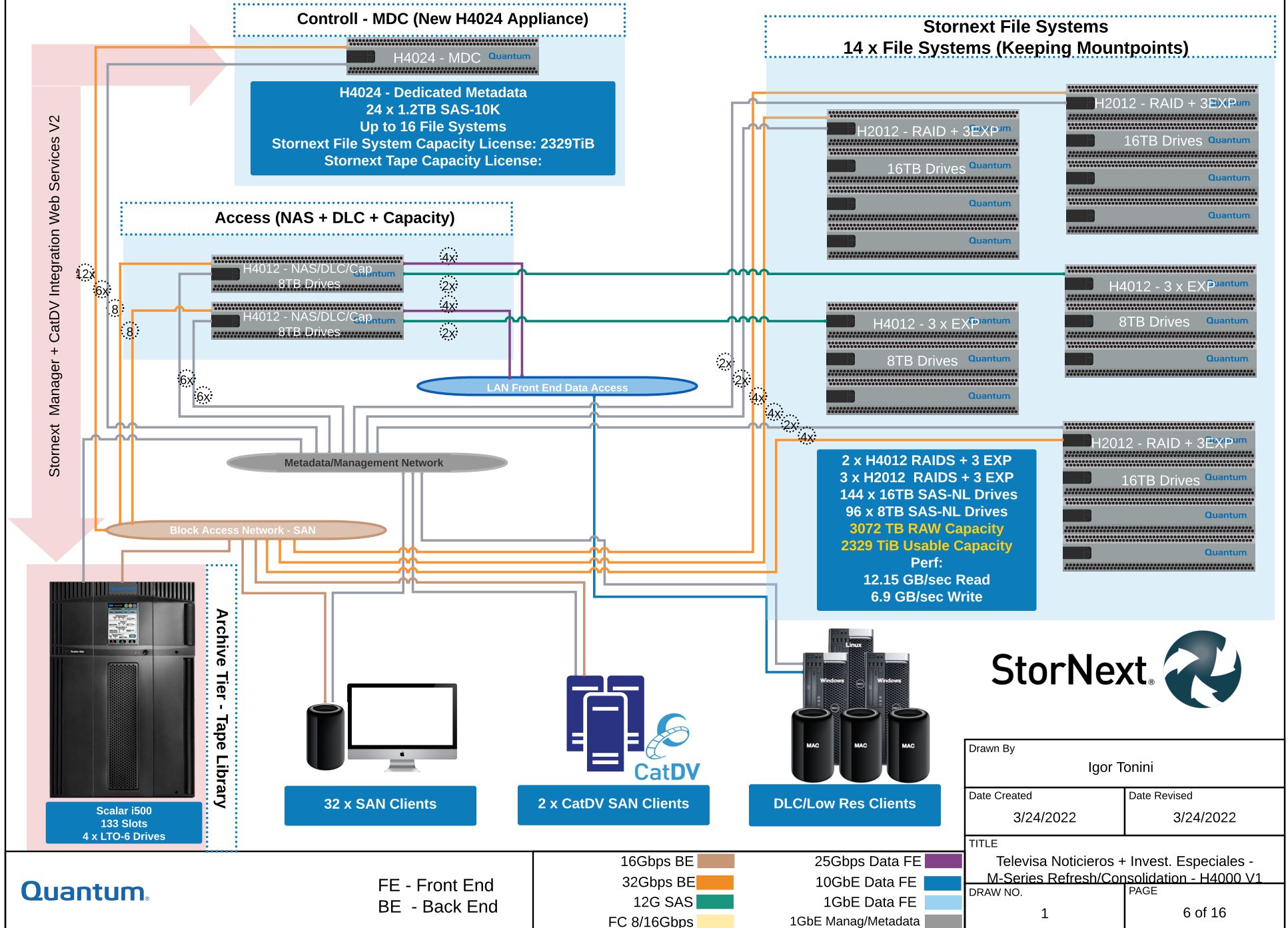
FE - Front End
BE - Back End

16Gbps BE
25Gbps BE
12G SAS
FC 8/16Gbps

100Gbps Data FE
10GbE Data FE
10GbE Data FE
1GbE Manag/Metadata

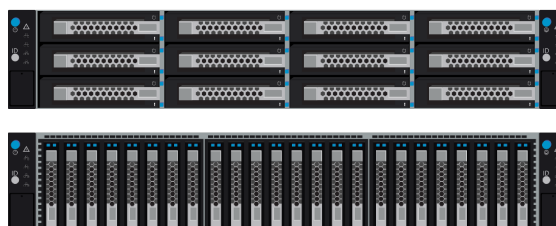
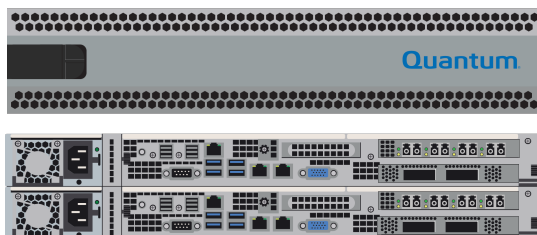
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Televisa Noticieros + Investigaciones Especiales H4000 - 2.32PiB Usable Cap.



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Quantum H4U12/24 HCI



Quantum H4U24	
Rack Units	2
Watts	1000
BTU/hr	1003
Weight (lb)	80

Hardware

Physical: Highly Available 2 RU chassis with dual compute cannisters and 12 3.5" or 24 2.5" drive slots

Operating System: CentOS 7 Linux **CPU:** 7402P 24C/48T 2.8GHz CPU's per cannister

Memory: 128 GB RAM per cannister (expandable) **Internal Storage:** 2 NVMe SSDs (mirrored) for hypervisor and VMs per cannister

LAN Networking: 1GbE for IPMI managment, 1/10GbE for metadata networks

Management: Lights Out Management (LOM) **Expansion slots:** 3x PCIe x32 slots

Storage: 12 3.5" Drive slots with 12G SAS backend expansion or 12 2.5" Drive Slots.

Storage Speed: Each HCI can provide up to 12GB/s of sequestial throughput (Vary according with drive Types)

Options

Fibre Channel Options Quad-Port 32G, Quad-Port 16G, Dual-Port 32G, Dual-Port 16G

NIC Kit Options Quad-Port 10GbE/25GbE SFP+, Dual-Port 10GbE/25GbE SFP+, Quad-Port 10GbE RJ45, Dual-Port 40GbE/100GbE

Included Licenses 10 Windows / Linux SAN client Licenses

Enablement License Options Lan Gateway (DLC), NAS, FlexSync, FlexTier, S-Disk, LTO-Slot

10K SAS Drive Options: 1.8TB **SSD SSD Drive Options:** 7.68TB, 15.36TB **NL-SAS:** 4Tb, 8TB, 16TB

Features & Benefits

Efficient, converged architecture Converged compute, storage, and client access, to create an efficient and powerful core of a workflow storage solution.

Flexible continuous scalability Add storage arrays to scale from the smallest configurations to the largest with no forklift upgrades or extra accelerators.

Multi-protocol access built in Optimizes workflow efficiency and data access by enabling all clients access to the same data regardless of protocol, on a SAN or on a LAN.

Massive scalability Support for billions of files across up to 64 virtual file systems. Virtually unlimited capacity. Scale to hundreds of petabytes. Extend scalability even further using cloud, object storage, or tape.

Powered by StorNext® 7 H-Series is designed to get the most out of StorNext 7, the industry's best data management system for high- performance, multi-tier, shared storage.

StorNext Connect management tool Built-in deployment, management, monitoring, and reporting for multiple systems from a single interface.

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Capacity Sizing - Quantum H4U12/24 HCI

NODE1 - H4024 - MDC		NODE2 - H4012 - NAS/DLC		NODE3 - H4012 - NAS/DLC	
Metadata Cap	Drives	Usable Cap (TB)	Drives	Usable Cap (TB)	Drives
21.82	24 x 1.2TB	72.76	12 x 8TB Drives	72.76	12 x 8TB Drives
		72.76	12 x 8TB Drives	72.76	12 x 8TB Drives
		72.76	12 x 8TB Drives	72.76	12 x 8TB Drives
		72.76	12 x 8TB Drives	72.76	12 x 8TB Drives

H2012		H2012		H2012	
Usable Cap (TB)	Drives	Usable Cap (TB)	Drives	Usable Cap (TB)	Drives
145.52	12 x 16TB Drives	145.52	12 x 16TB Drives	145.52	12 x 16TB Drives
145.52	12 x 16TB Drives	145.52	12 x 16TB Drives	145.52	12 x 16TB Drives
145.52	12 x 16TB Drives	145.52	12 x 16TB Drives	145.52	12 x 16TB Drives
145.52	12 x 16TB Drives	145.52	12 x 16TB Drives	145.52	12 x 16TB Drives

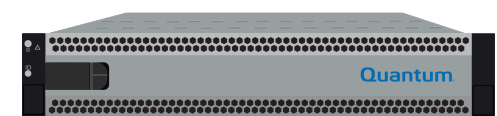
								H4012/H2012			
Appliance Model	Version	SN	Managed	FS	Used Capacity TiB	Current FS Cap TB	New FS Capacity	New LUN Size	LUNS	SG	Luns Per SG
M662	6.4.0.1	AV1437CKB00025	NO	Archivos Promos	64	70	72.76	72.76	1	1	1
M662	6.4.0.1	AV1437CKB00025	NO	Digital Medias	224	273	291.04	145.52	2	1	2
M662	6.4.0.1	AV1437CKB00025	NO	Romes (FS_Consolidadet 1)	3.3	37	72.76	72.76	1	1	1
M662	6.4.0.1	AV1437CKB00025	NO	Media Promos (FS_Consolidadet 1)	42	66	0	72.76	0	0	0
M662	6.4.0.1	AV1437CKB00025	NO	NearLine	183	197	291.04	145.52	2	2	1
M662	6.4.0.1	AV1437CKB00025	NO	Respaldo Promos	8.1	37	72.76	72.76	1	1	1
M662	6.4.0.1	AV1437CKB00025	NO	Respaldo_Temp	47	73	72.76	72.76	1	1	1
M662	6.4.0.1	AV1437CKB00025	NO	Trafico NOT	20	37	72.76	72.76	1	1	1
M440	5.4.1	CX1339CKD00046	YES	Noticieros	347	393	436.56	145.52	3	3	1
M440	5.4.1	CX1339CKD00046	NO	Proxy	13	28	72.76	72.76	1	1	1
M440	5.4.1	CX1339CKD00046	NO	Usuarios	20	30	72.76	72.76	1	1	1
NEW MDC	7.0.2	NEW FS	NO	Proyectos Documentales	N/A	80	72.76	72.76	1	1	1
NEW MDC	7.0.2	NEW FS	NO	Trafico	N/A	100	145.52	145.52	1	1	1
NEW MDC	7.0.2	NEW FS	NO	Invest Especiales	N/A	500	582.08	145.52	4	2	2
TOTAL					971.4	1921	2328.32		20	TOTAL LUNS	
									240	TOTAL DRIVES	
									5	H4000	



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Quantum H4012/2012 - SAS-NL (User Data)

- Powered by Quantum's block storage software stack
- 12 3.5" SAS-NL Drives in a 2RU Chassis
- High Availability: Dual-Active Nodes
- High Availability: Dual-Active Nodes
- AMD 7402P 24 Cores 2.8GHz / 3.35GHz Turbo with 128GB of RAM Per Canister
- Power protected with super capacitors
- 2 x Mirrored 512GB NVMe Drives Per Canister (Boot and OS)
- PCIe 4.0 with support for RDMA capable 100GbE & 25GbE NICs and 32G & 16G FC HBAs
- Controllers support Up to 12GB/s (Depending on Drive Type)
- End to end 12G SAS
- Supports up to 3 Expansion Chassis per RBOD
- Redundant 1300W hot-swappable power supplies



System	Model	Drive Size	RAID Drive Count	Protocol	Port Count	Expansion	Expansion Drive Size	Expansion Drive Count	Expansion Quantity	Total Chasis Quantity	Total Drive Count	Usable Capacity TB	Usable Capacity TiB
1	H4012	8.00 TB	12	FC	8	2U12 JBOD for H-Series	8.00 TB	12	3	4	48	320.00 TB	291.04 TiB
2	H4012	8.00 TB	12	FC	8	2U12 JBOD for H-Series	8.00 TB	12	3	4	48	320.00 TB	291.04 TiB
3	H2012	16.00 TB	12	FC	4	2U12 JBOD for H-Series	16.00 TB	12	3	4	48	640.00 TB	582.08 TiB
4	H2012	16.00 TB	12	FC	4	2U12 JBOD for H-Series	16.00 TB	12	3	4	48	640.00 TB	582.08 TiB
5	H2012	16.00 TB	12	FC	4	2U12 JBOD for H-Series	16.00 TB	12	3	4	48	640.00 TB	582.08 TiB
									15	20	240	2,560.00 TB	2,328.31 TiB

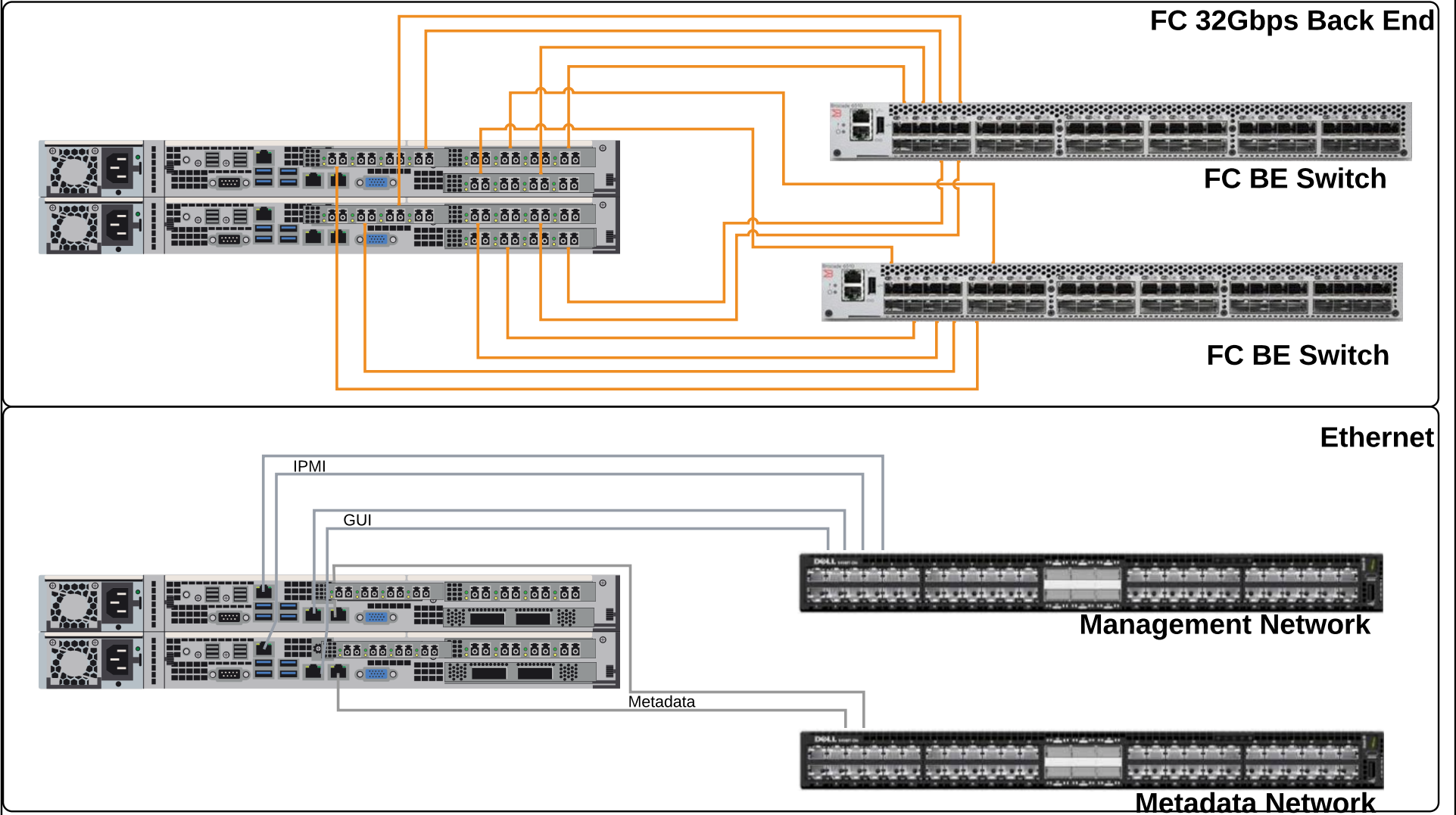
System	Model	Sequential Read Throughput Minus Overhead	Sequential Write Throughput Minus Overhead	Rack Units	Rated Watts	BTU/Hr	Weight (lbs)
1	H4012	2.43 GB/s	1.38 GB/s	8	1,320	4,671	295
2	H4012	2.43 GB/s	1.38 GB/s	8	1,320	4,671	295
3	H2012	2.43 GB/s	1.38 GB/s	8	1,320	4,671	295
4	H2012	2.43 GB/s	1.38 GB/s	8	1,320	4,671	295
5	H2012	2.43 GB/s	1.38 GB/s	8	1,320	4,671	295
		12.15 GB/s	6.90 GB/s	40	6,600	23,355	1475


The recommendations and calculations expressed are in good faith and while every care has been taken in preparing these documents, Quantum Corp. makes no representations and gives no warranties of whatever nature in respect of these documents, including but not limited to the accuracy or completeness of any information, facts and/or opinions contained therein.

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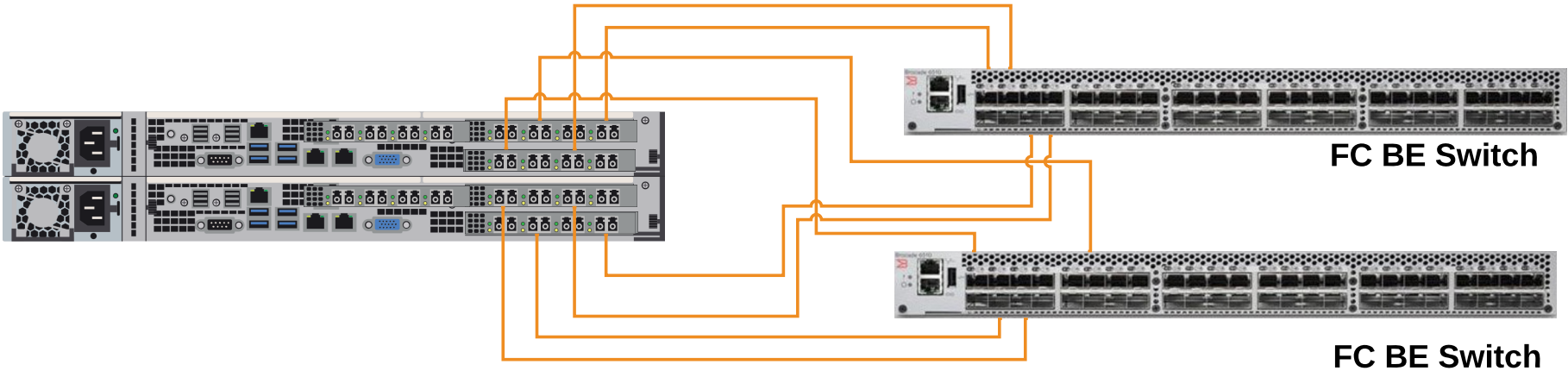
Quantum H4024 Series Sample Wiring



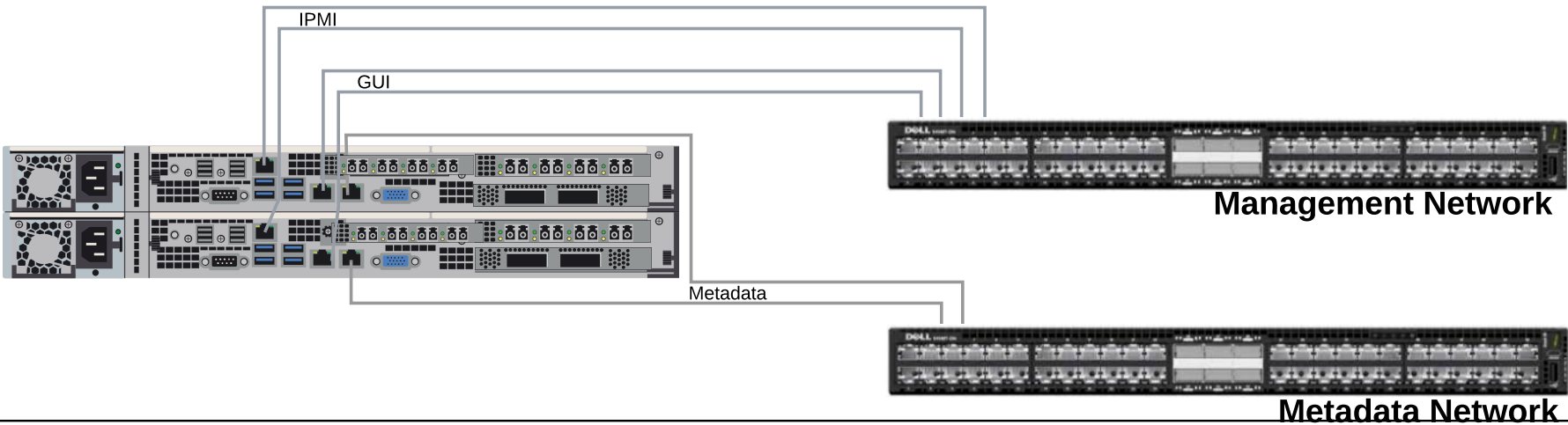
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FE - Front End BE - Back End		16Gbps BE 32Gbps BE 12G SAS FC 8/16Gbps	25Gbps Data FE 10GbE Data FE 1GbE Data FE 1GbE Manag/Metadata

Quantum H4012 Series Sample Wiring

FC 32Gbps Back End



Ethernet



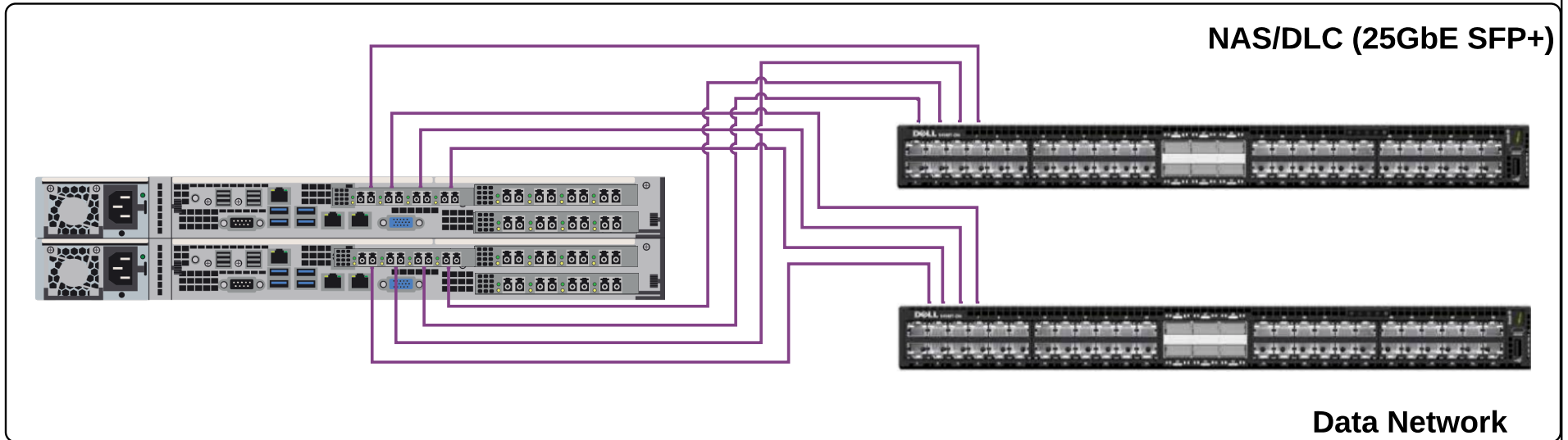
FE - Front End
BE - Back End

16Gbps BE
32Gbps BE
12G SAS
FC 8/16Gbps

25Gbps Data FE
10GbE Data FE
1GbE Data FE
1GbE Manag/Metadata

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Quantum H4012 Series Sample Wiring



Quantum

FE - Front End
BE - Back End

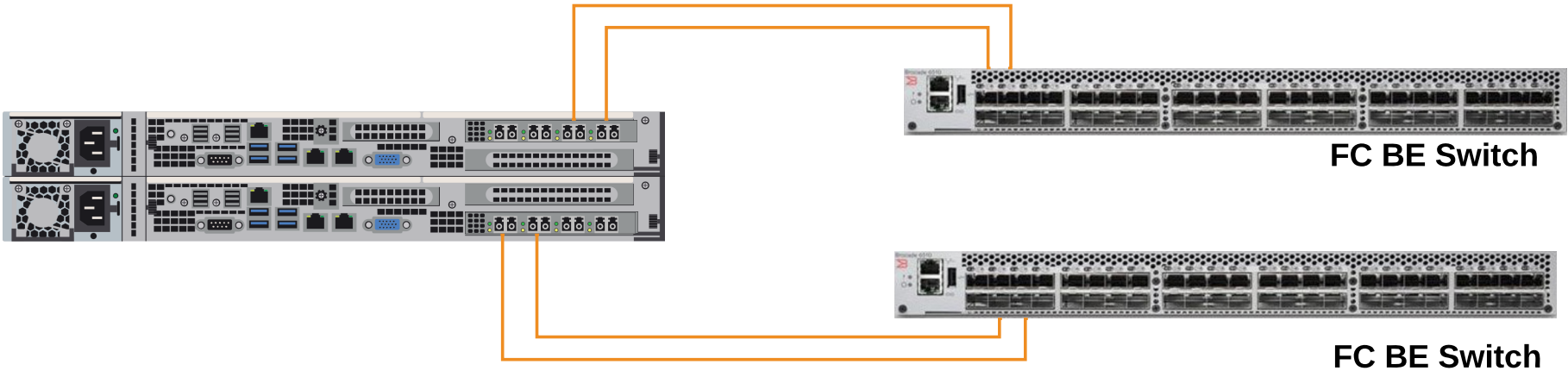
16Gbps BE
32Gbps BE
12G SAS
FC 8/16Gbps

25Gbps Data FE
10GbE Data FE
1GbE Data FE
1GbE Manag/Metadata

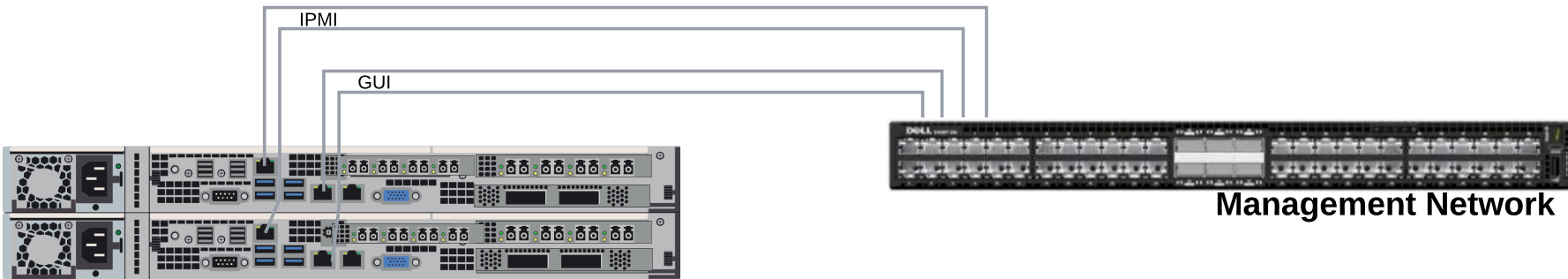
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Quantum H2012 Series Sample Wiring

FC 32Gbps Back End



Ethernet

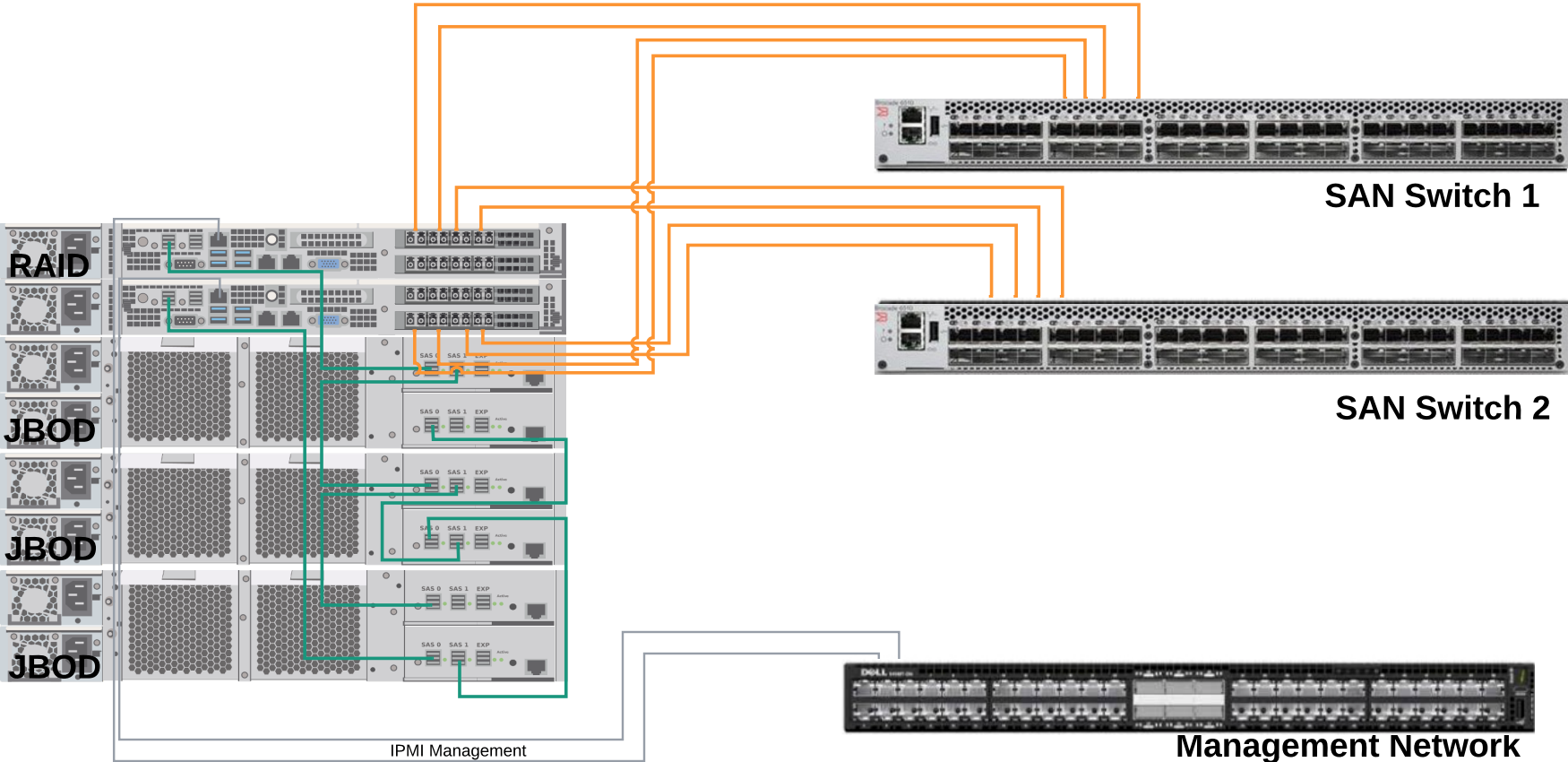


FE - Front End
BE - Back End

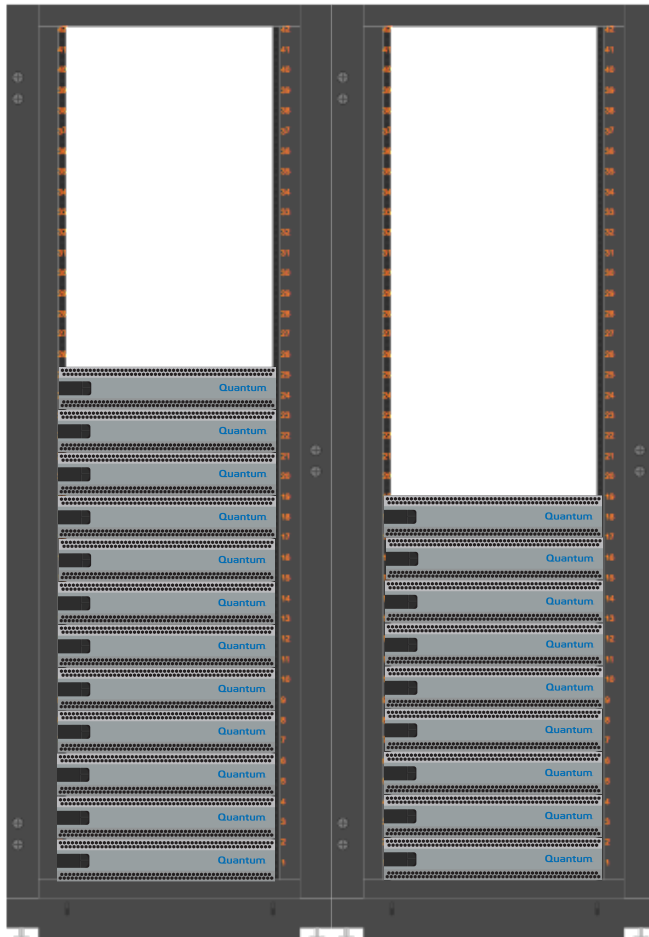
16Gbps BE	25Gbps Data FE
32Gbps BE	10GbE Data FE
12G SAS	1GbE Data FE
FC 8/16Gbps	1GbE Manag/Metadata

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H4012/2012 - User Data Array Back-End Sample Wiring



Footprint and BOM - H4000/H2000 Appliances (2.32PiB) + Tape License



24 RU

18 RU

Model Number	Description	Qty
StorNext 7 Appliances	Configured System	1
WSNS7-ALFS-ANXA	Quantum StorNext 7 File System Capacity License, Non-Expiring, per TiB, includes one year Silver (5x9TS) software support	2329
WSNS7-ALSD-ANXA	Quantum StorNext 7 Scale-Out Data Services Node License, Non-Expiring, per Server Node, includes one year Silver (5x9TS) software support	2
WSNS7-ALTC-ANXA	Quantum StorNext 7 Tape Capacity License, Non-Expiring, per TiB, includes one year Silver (5x9TS) software support	333
SSNS7-SLFS-HG10	Quantum StorNext 7 File System Capacity, Support for Non-Expiring, per TiB; Software Support Plan, Gold (7x24TS); annual, all zones	6987
SSNS7-SLSD-HG10	Quantum StorNext 7 Scale-Out Data Services Node, Support for Non-Expiring, Per Server Node; Software Support Plan, Gold (7x24TS); annual, all zones	6
SSNS7-SLTC-HG10	Quantum StorNext 7 Tape Capacity, Support for Non-Expiring, per TiB; Software Support Plan, Gold (7x24TS); annual, all zones	999
GBHAX-ACBA-003A	Quantum H-Series Cable Kit, 12G SAS, Mini SAS HD 8644, 30AWG, 3.3ft (1m), Includes One Cable	2
GBHAX-ASFP-125A	Quantum H-Series SFP, 25Gbps/10Gbps, Single, Optical, Includes One SFP28; Cables Sold Separately	4
GBH4F-CRFB-001C	Quantum H-Series H4024 Hybrid Storage Node, 28.8TB Raw Capacity (24x1.2TB), 24TB Usable Capacity (21.83TiB), SAS HDD, Non-SED	1
GBHAX-AFGA-432A	Quantum H-Series Fibre Channel Kit, 32Gbps/16Gbps/8Gbps, Quad-Port, Optical, Includes Two HBAs and Eight Cables	2
GBHAX-ANGQ-425A	Quantum H-Series Ethernet Kit, 25Gbps/10Gbps, Quad-Port, SFP28, Includes Two NICs; SFPs and Cables Sold Separately	1
GBHAX-ACBA-003A	Quantum H-Series Cable Kit, 12G SAS, Mini SAS HD 8644, 30AWG, 3.3ft (1m), Includes One Cable	4
GBHAX-ASFP-125A	Quantum H-Series SFP, 25Gbps/10Gbps, Single, Optical, Includes One SFP28; Cables Sold Separately	8
GBH4C-CRBJ-001C	Quantum H-Series H4012 Hybrid Storage Node, 96TB Raw Capacity (12x8TB), 80TB Usable Capacity (72.76TiB), NL-SAS HDD, Non-SED	2
GBHAC-AJBQ-001C	Quantum H-Series 2U12 JBOD, 96TB (12x8TB) Raw, 80TB (72.76TiB) Usable, NL-SAS HDD, non-SED	6
GBHAX-AFGA-432A	Quantum H-Series Fibre Channel Kit, 32Gbps/16Gbps/8Gbps, Quad-Port, Optical, Includes Two HBAs and Eight Cables	4
GBHAX-ANGQ-425A	Quantum H-Series Ethernet Kit, 25Gbps/10Gbps, Quad-Port, SFP28, Includes Two NICs; SFPs and Cables Sold Separately	2
GBHAX-ACBA-003A	Quantum H-Series Cable Kit, 12G SAS, Mini SAS HD 8644, 30AWG, 3.3ft (1m), Includes One Cable	6
GBH2C-CRBM-001C	Quantum H-Series H2012 Hybrid Storage Node, 192TB (12x16TB) Raw, 160TB (145.52TiB) Usable, NL-SAS HDD, non-SED	3
GBHAC-AJBM-001C	Quantum H-Series 2U12 JBOD, 192TB (12x16TB) Raw, 160TB (145.52TiB) Usable, NL-SAS HDD, non-SED	9
GBHAX-AFGA-432A	Quantum H-Series Fibre Channel Kit, 32Gbps/16Gbps/8Gbps, Quad-Port, Optical, Includes Two HBAs and Eight Cables	3
SBH4W-NSYR-0002	Quantum H-Series H4000 Hybrid Storage Node, Onsite Installation, zone 2	1
SBH4W-NSYR-0002	Quantum H-Series H4000 Hybrid Storage Node, Onsite Installation, zone 2	2
SBH4W-NSYJ-0002	Quantum H-Series, JBOD, Onsite Installation, zone 2	6
SBH2W-NSYR-0002	Quantum H-Series H2000 Hybrid Storage Node, Onsite Installation, zone 2	3
SBH4W-NSYJ-0002	Quantum H-Series, JBOD, Onsite Installation, zone 2	9
SAABB-NSSE-0002	Quantum Site Charge, Enterprise, zone 2	1
SBH4F-SRFB-CG12	Quantum H-Series H4024 Hybrid Storage Node, 28.8TB Raw Capacity (24x1.2TB), SAS HDD, SED/non-SED; Support Plan, Gold (7x24x4 CRU); annual, zone 2	3
SBH4C-SRBJ-CG12	Quantum H-Series H4012 Hybrid Storage Node, 96TB Raw Capacity (12x8TB), NL-SAS HDD, SED/non-SED; Support Plan, Gold (7x24x4 CRU); annual, zone 2	6
SBHAC-SJBQ-CG12	Quantum H-Series 2U12 JBOD, 96.00TB Raw Capacity (12x8.00TB), NL-SAS HDD, SED/non-SED; Support Plan, Gold (7x24x4 CRU); annual, zone 2	18
SBH2C-SRBM-CG12	Quantum H-Series H2012 Hybrid Storage Node, 192.00TB Raw Capacity (12x16.00TB), NL-SAS HDD, SED/non-SED; Support Plan, Gold (7x24x4 CRU); annual, zone 2	9
SBHAC-SJBM-CG12	Quantum H-Series 2U12 JBOD, 192.00TB Raw Capacity (12x16.00TB), NL-SAS HDD, SED/non-SED; Support Plan, Gold (7x24x4 CRU); annual, zone 2	27
SAABB-NSNS-PZ00	Quantum Customized System Integration and Professional Service, all zones, CALL FOR QUOTE	1

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Your difference is in your data.