What's new in Elastic Storage System (ESS)?

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Disclaimer

Spectrum Scale

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IBM Spectrum Scale and
IBM Elastic Storage System (ESS)

Incorporating Decades of Storage Innovation

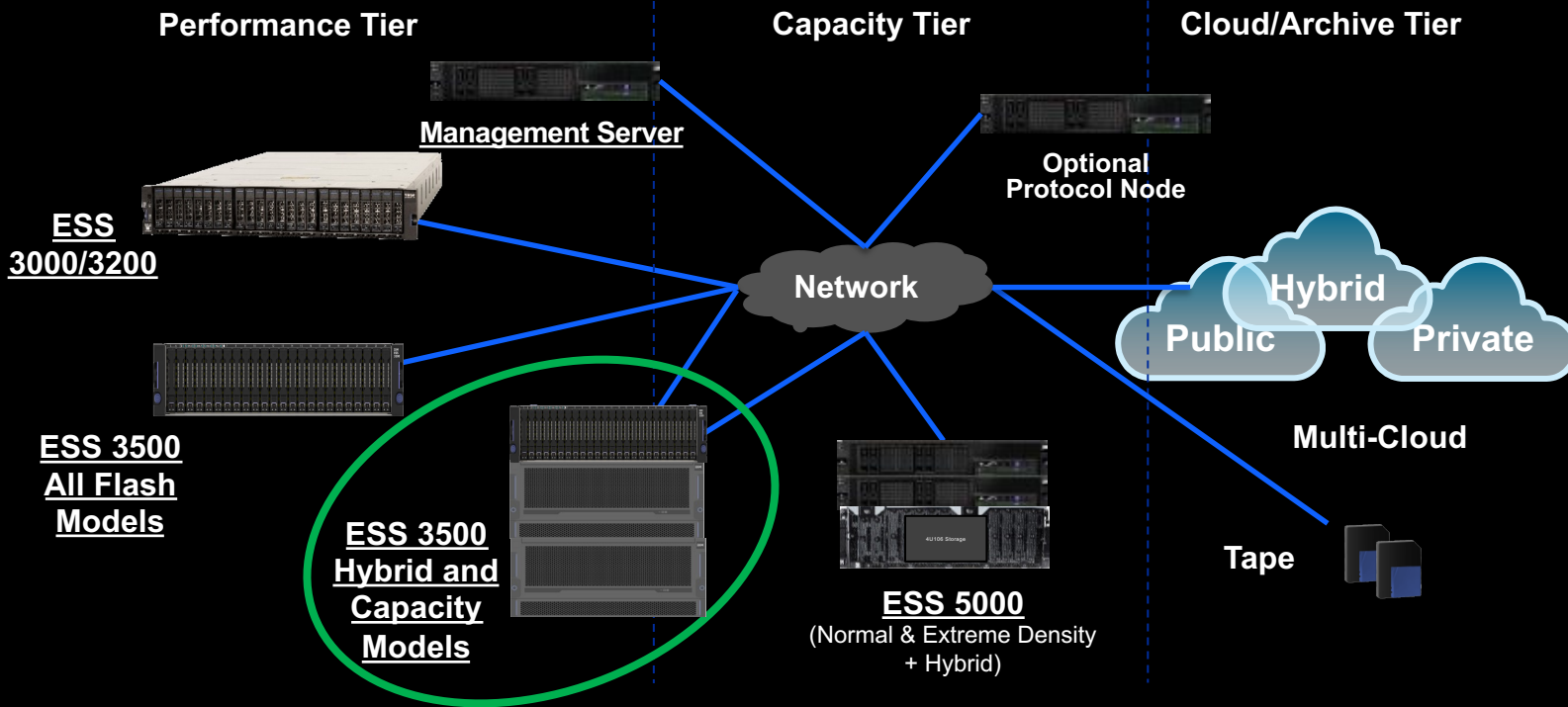| 1998	2012	2014	2017	2019	2020	2021	2022
GPFS (original name of Spectrum Scale) The seeds of the Global Data Platform are born	**AFM** Data Caching Services introduced	**ESS GSx & GLx** 1st Gen ESS with Security Services introduced	**ESS GSxS, GLxS, GLxC, & GHxy** 2nd Gen ESS with denser enclosures introduced	**ESS 3000** 3rd Gen ESS with NVMe all flash cloud scale storage introduced	**ESS 5000** 3rd Gen ESS with faster processor and greater capacity (1st 10PB+ node) introduced	**ESS 3200** 80GB/s extreme performance all flash node introduced	**ESS 3500** New Family of cloud scale ESS innovation

ESS Spectrum Scale Storage Layer

- Start Small and Grow as Needed
- One Management Server required per Spectrum Scale Cluster
- Optional Protocol Nodes sized per customer needs

Performance Tier

Capacity Tier

Cloud/Archive Tier

Management Server

Optional Protocol Node

ESS 3000/3200

Network

Hybrid

Public

Private

Multi-Cloud

ESS 3500 All Flash Models

ESS 3500 Hybrid and Capacity Models

ESS 5000
(Normal & Extreme Density + Hybrid)

Tape

ESS models are built for speed and capacity

Speed ← → ← Hybrid → Capacity ← →

IBM Elastic Storage System
Hybrid

IBM Elastic Storage System
Hard Disk Drive (HDD)

IBM Elastic Storage
System 3200

2U24 Enclosure
12 or 24 NVMe drives

ESS Flash
Machine type 5141-FN1

Up to 80 GB/s*
100% read, InfiniBand

IBM Elastic Storage
System 3500

2U24 Enclosure
12 or 24 NVMe drives

ESS Flash
Machine type 5141-FN2

Up to 91 GB/s*
100% read, InfiniBand

3500C   SCx   SLx

ESS 3500 H
Machine type 5141-FN2

Up to 80 GB/s*
100% read from flash, InfiniBand

ESS HDD
Machine types
5142-FN2
5147-106 or 5147-092 Storage
5105-22E POWER9 servers

Up to 57 GB/s*
100% read SC5 model, InfiniBand

* These read performance numbers in highly tuned performance environments with RDMA Infiniband networks

Elastic Storage System models at a glance

Models	ESS 3500	ESS 3200	ESS 5000 SLx	ESS 5000 SCx
Models	2U24 With 12 or 24 drives for flash HDD Capacity 1,2,3,4 enclosures	2U24 With 12 or 24 drives	SL1 SL2 SL3 SL4 SL5 SL6 SL7	SC1 SC2 SC3 SC4 SC5 SC6 SC7 SC8 SC9
Drive sizes	NVMe: HDD: 3.84 TB 10 TB 7.68 TB 14 TB 15.36 TB 18 TB 30.72 TB 20 TB	NVMe: 3.84 TB 7.68 TB 15.36 TB FCM2: 38.4 TB	HDD: 6 TB 10 TB 14 TB 16 TB 18 TB	HDD: 10 TB 14 TB 16 TB 18 TB

IBM ESS 3500
Most Innovative Flash Storage 2022[1]

NEXT GENERATION

Up to 12% better performance vs previous models and combines flash and capcity data with up to 20PBe capacity in only 18u

INVESTMENT PROTECTION

Expand an exisiting or build a new Global Data Plaform and use current storage even if not from IBM

GREEN SUSTAINABILE DATA

Less power with fewer nodes offering better power and thermal results

ALWAYS-ON UPGRADES AND EXPANSION

Enhanced non distruptive upgrades for scale-up and scale-out

ESS 3500

3.84, 7.68, 15.36, 30.72 TB NVMe flash drives

10, 14, 18 TB ISE HDD; 20 TB SED capable HDD[2]

2u – 18u per ESS
12 or 24 drives of Flash capacity
51 - 408 drives of HDD capacity
Up-to 91GB/s[3] read performance

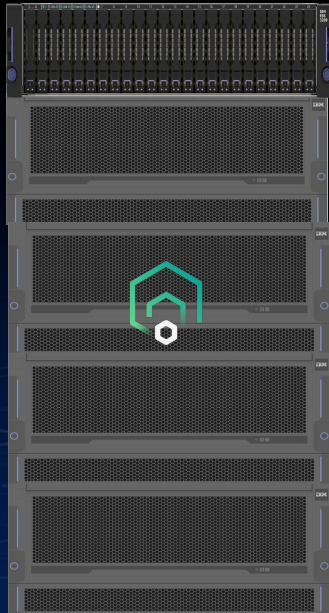# IBM ESS 3500 Model Family Extension

May 2022
Start with
46 TB – 368 TB of
raw NVMe capacity

August 2022
Grow NVMe and deploy
up to 8.1 PB per ESS
of HDD raw capacity

Flash

Capacity
HDDs

Scale-up to PB and scale-out to YB for GB/s+ performance and capacity to manage your entire data ecosystem with lower cost and the enterprise security and resiliency your business requires

"I don't have a full-time person who looks after Spectrum Scale on my team...For the most part, it looks after itself."
- IT Manager, Univ. of Birmingham

Up to 91 GB/s per ESS
46 TB to 737 TB raw Flash per ESS
510 TB to 8.1 PB raw HDD capacity per ESS
Scale 1 to 1000s of nodes
Global Data Platform
Built-in policy optimization engine
Enterprise resiliency and security
Container-native OpenShift access

ESS 3500 & edge computing

Spectrum Scale

Optimized for entry configuration

Eliminate dedicated protocol node

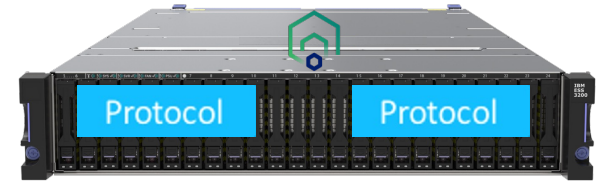**Virtualized protocol services for 100s of clients**

- **NFS (1000)**

- **SMB (512)**
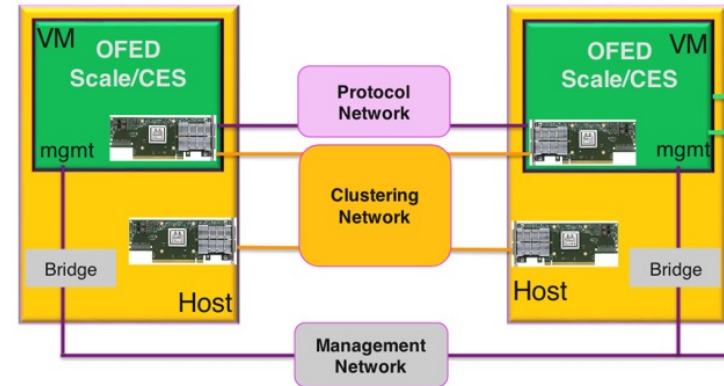
1 VM per canister

- **8 cores**

- **64 GB RAM**

Adapters via PCIe-Passthrough

Don't forget about your EMS! ☺

ESS 3500

ESS Notice!

Really working on the ESS Sponsor User Group!

New members would be useful!

Also, a reminder that BE is no longer supported.

ESS 6.0.x and ESS 5.3.x are no longer supported

Stay supported by migrating up to ESS 6.1.x

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