IBM **Spectrum Scale**

Spectrum Scale and ESS Licensing Made Easy

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Spectrum Scale Pricing - Modernized

- New Spectrum Scale pricing is built for simplicity
  - Easy to buy
  - Easy to budget for the future

- Existing Scale customers can stay on their existing sockets-based model as long as they wish
  - No disruption or forced migration for time being

Spectrum Scale software now licensed per terabyte/petabyte (TiB/PiB)

Data Access Edition (DAE)

– Flat Per TiB/PiB pricing
  o No tiers. Just count all the TiBs/PiBs in all the NSDs in the cluster
  o No charge for clients (in the same cluster or separate cluster), or protocol nodes, or anything else besides NSD capacity
– Based on Provisioned Capacity
  o This is the capacity "visible" to Scale, i.e. after applying h/w RAID, h/w mirroring, h/w spares, etc.
  o Equivalent to Usable capacity for traditional thick provisioned block storage
– To verify or audit for compliance, simply run
  `mmlslicense –capacity`
  for each cluster
  o or look in the GUI

Data Management Edition (DME)

– All DAE functionality plus:
  o Encryption
  o Asynchronous disaster recovery (AFM-ADR)
  o Transparent Cloud Tiering
  o File audit logging
  o Watch folder

Erasure Code Edition (ECE)

– All DME functionality plus:
  o Deploy on storage rich servers with internal storage, using erasure coding for high durability, space efficiency, and rapid rebuilds

All nodes in a single cluster must be on the same Edition

Existing Spectrum Scale software customers can remain on Sockets

Standard Edition, licensed per socket

– **Strictly** for existing customers of Standard Edition. **No** new customers

– Same functionality as Data Access Edition

– Individual licenses for servers, clients, and FPO ("shared nothing") servers

– To verify or audit for license compliance, customer must count sockets on each machine (system dependent process)

Advanced Edition, licensed per socket

– **Strictly** for existing customers of Advanced Edition. **No** new customers

– Additional functionality (same as DME)
  - ○ Encryption
  - ○ Asynchronous disaster recovery (AFM-ADR)
  - ○ Transparent Cloud Tiering
  - ○ File audit logging
  - ○ Watch folder

Customers can choose to trade up to Capacity licensing, but nobody will be forced to migrate

All nodes in a single cluster must be on the same Edition

For ESS customers, two Editions with two tiers

Data Access Edition, licensed Per Disk

– Spectrum Scale RAID license entitlement included

– Two price tiers, HDD and SDD

– Select in eConfig

Data Management Edition, licensed per Disk

– Adds Encryption, AFM-ADR, Transparent Cloud Tiering, File Audit Logging, Watch folder

– Two price tiers, HDD and SDD

– Select in eConfig

ESS customers can also choose Per TiB/PiB pricing, e.g. for an ELA. Usually it will be more expensive

All nodes in a single cluster must be on the same Edition

For a mixture of Scale software and ESS in one cluster, two choices

License Scale and ESS separately, with compatible licenses

– License each ESS machine individually with Per Disk licenses

– License the rest of the cluster as software with per TiB or per PiB licenses

– All nodes in a cluster must be on the compatible Editions, i.e.

o All nodes on Data Access Edition *or*

o All nodes on Data Management Edition or

o ESS on DME, other nodes on ECE

License the whole cluster using per TiB/PiB

– May be preferred by customers who want an ELA to cover everything, or want to reuse existing software licenses with an ESS purchase

– For any ESS machines, choose "Build to Order" in eConfig, delete Per Disk licenses, and order Scale software separately

– ESS capacity is calculated as drive capacity *after* applying software RAID, 8+2 or 8+3

– All capacity under DME or all under ECE

For customers with old ESS under Socket licensing, it is possible to mix old and new models.

All nodes in a single cluster must be on the same Edition

Customers can also trade up from Sockets to Per TiB

- Existing Socket customers can choose to convert to Per TiB
  - Commonest case: a customer on Standard edition wants DME functionality such as Encryption
  - An existing customer can purchase a number of trade up TiBs determined by their current entitlements
  - Discounting on trade up purchase calculated so that S&S after trade-up remains the same
  - If the customer needs more TiBs than are covered by the trade-up, they buy additional TiBs in the normal way
- Existing DAE and DME customers can upgrade to ECE
  - One-for-one exchange of TiBs/PiBs
- Provide your IBM Storage Seller Site number plus the total number of TiBs needed, and we'll do the math

New! Scale Developer Edition

- Scale Developer Edition will be full function but size limited
  - o Derived from **DME**, all functionality available
  - o Limited to 12 TBs: enough for a small test cluster
  - o Available from the Scale "try and buy" page on ibm.com
- Refreshed after each Scale Mod level (first PTF)
- Free for non-production use, e.g. test, learning, upgrade prep…
  - o If you have to ask, it's probably not permitted
- Not formally supported

IBM Spectrum Scale

Advanced storage management of unstructured data for cloud, big data, analytics, objects and more

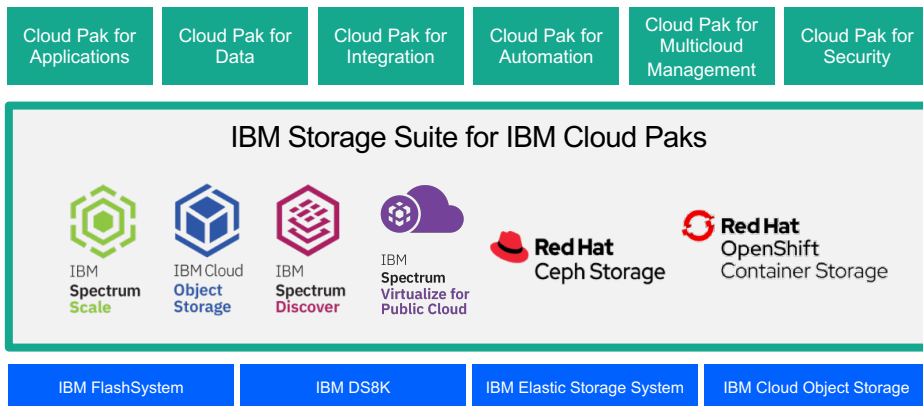Starting at $18.00 per terabyte

| Free 30-day trial | Developer Edition |

IBM Storage Suite for IBM Cloud Paks

The only storage offering that meets all application requirements from development to production

Build once
Deploy anywhere

Innovate anywhere
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Grow freely
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Cloud Pak for Applications	Cloud Pak for Data	Cloud Pak for Integration	Cloud Pak for Automation	Cloud Pak for Multicloud Management	Cloud Pak for Security

IBM Storage Suite for IBM Cloud Paks

IBM Spectrum **Scale**

IBM Cloud **Object Storage**

IBM Spectrum **Discover**

IBM Spectrum **Virtualize for Public Cloud**

Red Hat Ceph Storage

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IBM FlashSystem	IBM DS8K	IBM Elastic Storage System	IBM Cloud Object Storage

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A suite of storage to meet all your workload requirements. As your needs change, remix your storage at no additional cost (on-premises and in the Cloud)

Complete yet simple
Flexible storage capacity options (file, block, and object) to satisfy any workload requirement

IBM validated
Fully tested with IBM Cloud Paks and Red Hat OpenShift with ongoing security, compliance and version compatibility

Modular and consistent
Easy to consume, consistent storage services for containerized environments

Thank You!

Thank you!

Provide Feedback ✕

Tell IBM What You Think

Let us know what you think about IBM Spectrum Scale. It takes only a couple of minutes for you to help us improve our service. ↗ IBM Privacy Policy

Not Now   ↗ Provide Feedback

- Please help us to improve Spectrum Scale with your feedback
  - If you get a survey in email or a popup from the GUI, please respond
  - We read every single reply

IBM Spectrum Scale

Backup: A few more details for Tech Sellers

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Spectrum Scale Editions

	Data Access Edition	Data Management Edition	Erasure Code Edition
Pricing metric	Per provisioned TiB or PiB	Per provisioned TiB or PiB	Per provisioned TiB or PiB
Multi protocol scalable file service with simultaneous access to a common set of data	●	●	●
Facilitate data access with a global namespace, massively scalable file system, quotas and snapshots, data integrity & availability and filesets	●	●	●
Simplify management with GUI	●	●	●
Improved efficiency with QoS and Compression	●	●	●
Create optimized tiered storage pools based on performance, locality, or cost	●	●	●
Simplify data management with Information Lifecycle Management (ILM) tools that include policy based data placement and migration	●	●	●
Enable worldwide data access using AFM asynchronous replication	●	●	●
Asynchronous multi site Disaster Recovery		●	●
Hybrid cloud (TCT)		●	●
Protect data with native software encryption and secure erase, NIST compliant and FIPS certified.		●	●
File Audit Logging		●	●
Watch folder		●	●
Erasure coding for certified hardware platforms	ESS only	ESS only	●

FAQs

- Can I mix the different metrics?
  - Different clusters can be on different metrics, and can mount each others' file systems (just like today) but you can't mix socket and TiB or socket and Per Disk licenses within a single cluster (other than the exception for old ESS mentioned above)
- Do "advanced" functions (e.g. encryption) work across Advanced and Data Management edition clusters?
  - Yes. Functionally, Data Management works exactly like Advanced, and the same capabilities (and restrictions) apply
- Who can continue to buy Advanced Edition?
  - Existing customers with Advanced licenses, based on site number
- Who can continue to buy Standard Edition?
  - Existing customers with Standard licenses, based on site number
- Can I migrate from socket licensing to Per TiB pricing?
  - Yes, but for time being you don't have to if you don't want to. The process is described in the Sellers' deck
- Does data in Spectrum Archive or moved to an object store (e.g. with TCT) count for Per TiB pricing?
  - You do not pay for that capacity. You only pay for the capacity of the storage managed by Scale NSDs
- What about compression, replication, AFM, etc.?
  - Lots of things that Scale software does can change the amount of file data you can store. None of these things change the capacity of the NSDs, and therefore don't change the licensed TiBs. The licensed TiBs or PiBs are stable unless you add or remove NSDs (mmcrnsd, mmdelnsd)
- Can I get licenses for new ESS in an ELA, or transfer existing licenses?
  - Yes, but only Capacity licenses are supported on ESS 5.x models. So you would (i) configure the ESS without Scale software in eConfig, and (ii) buy (or trade up to) Data Access or Data Management Per TiB to use with the ESS
- Binary TiBs/PiBs or Decimal TBs/PBs?
  - Binary (2^{40} bytes). IBM licensing simply calls these "TBs" or "Terabytes". When IBM intends Decimal TBs, it says "Decimal TBs" or "Decimal Terabytes"
- What's the deal with the green creatures?
  - They're called tumbeasts. Matthew Inman (author of The Oatmeal) created them, then made them [freely available for reuse](#)

Mixing Scale as software and ESS, for Old ESS models

- **License Scale and ESS separately, with compatible licenses**
  - License each ESS machine individually using the appropriate model above
  - Old ESS machines remain on socket + server licensing
  - New ESS machines licensed Per Disk
  - License the rest of the cluster as software as before
  - All nodes in a cluster must be on *compatible* licenses, i.e.
    - o All nodes on Standard Edition or Data Access Edition
    - o All nodes on Advanced or Data Management Edition
  - If *any* node in the cluster is licensed by socket then clients, protocol nodes, etc. must also be licensed by socket

- **Previous ESS models were sold with Per Socket licenses plus Spectrum Scale RAID per server licenses**
- **Per TiB or Per Disk pricing does not apply to 1st generation ESS models**
- **We want to allow existing customers to add new ESS or Scale software without having to replace old ESS**

All nodes in a single cluster must be on compatible editions
All nodes on Standard Edition or Data Access Edition –OR--
All nodes on Advanced or Data Management Edition

Using mmlslicense to verify cluster capacity

- New in 4.2.3
- Also available with –Y option for parseable output

```
mmlslicense --capacity --formatted


NSD Summary:

======================

Total Number of NSDs:  2

mynsd1:                         10,737,418,240 Bytes

mynsd2:                         10,737,418,240 Bytes


Cluster Summary:

======================

Cluster Total Capacity:   21,474,836,480 Bytes
```

Using the GUI to verify cluster capacity

IBM **Spectrum Scale**

Cluster minimum release level: 4.2.3.0
GUI release level: 4.2.3-0
Cluster capacity for license (TiB): 0.1

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Special Case: Mixing metrics across clusters

There is just one special case when cross-mounting file systems across clusters with different metrics:

- To mount a file system of a Socket cluster, the mounting node must also have a Socket license
  - Example: Cluster 1 is licensed by Socket, cluster 2 is licensed by Capacity. You need to pay for a client license to mount Cluster 1 file system gpfs1 on a node in cluster 2. (However, you don't need to install the license on the node.)
  - If cluster 2 is also licensed by Socket, this is the same as it works today
- To mount a file system of a Capacity cluster, no additional license is required
- Same rules apply for a compute ("client-only") cluster that mounts file systems from Socket or Capacity clusters
- (These rules are required to avoid "gaming" the client license requirements)

mount
gpfs1

File system
gpfs1

File system
gpfs2

GPFS cluster 1

GPFS cluster 2

If this **cluster** is licensed by socket…

…this **node** needs a socket license to mount "cluster 1" file systems