

Overview

HPE Data Management Framework 6

The HPE Data Management Framework 6 (HPE DMF6) optimizes storage resource utilization and data accessibility by introducing hierarchical, tiered storage management architecture. Data is moved between tiers based on service level requirements defined by the administrator. For example, frequently accessed data can be placed on a flash, high-performance tier, the data accessed less often stay on hard drives in a capacity tier, and the data to be archived can be sent off to tape storage.

The integrated policy engine controls data movement between tiers and works in concert with backup, archive, and disaster recovery mechanisms. By placing data into the proper tier, the cost of data storage is optimized for accessibility requirements.

Data files always appear available to the user or application, and is accessed upon use, as scheduled, or per policy. By allocating data to the proper tier, storage capacity is used optimally for the data it contains, minimizing cost of storage and increasing ROI.

DMF6 simplifies introduction of new storage technologies by supporting automatic background migration, validation and consolidation of data to the new storage systems and media, keeping this process completely transparent to the end users.

Standard Features

The Right Data at the Right Time and Place

- The HPE Data Management Framework (DMF) enables HPC Linux storage environments to use a hierarchical, tiered storage architecture that places data based on defined policies. Data always appears online to the user or application, and is accessed upon use, as scheduled, or per policy.
- A file can be recalled partially, which makes the data available faster to the application, even as the remainder of the file is still being recalled.
- Specific sections of a file can be recalled while the entire file remains in a capacity-optimized tier.

Optimized Use of Data Storage Resources

- The HPE Data Management Framework (DMF) optimizes usage of storage resources. Storage capacity requirements can be reduced by expediently moving cold or static data to capacity-optimized tiers or archive. For instance, premium SAN storage utilization can be reduced by automatically moving infrequently accessed files to tape.
- ROI is improved as appropriate data can be moved to capacity-optimized tiers or into archive, so that the data is always placed on the least expensive storage as defined by policy. This significantly reduces the overall cost of storage.

Low Administrative Overhead

- The HPE Data Management Framework (DMF) provides automated policies that reduce manual data transfers.
- Integrated policy engine reduces script programming and maintenance requirements for transferring data.
- Centralized management and reporting interface simplifies data administration

Future-proof Storage Architecture

- The HPE Data Management Framework (DMF) facilitates seamless introduction of new storage technologies by supporting automatic background migration, validation and consolidation of data to the new storage systems and media.
- Data migration to new storage systems or media is transparent to the end users as the data is always accessible.

Supported Servers

- HPE ProLiant DL360 Server
- HPE ProLiant DL380 Server
- HPE ProLiant DL325 Server
- HPE ProLiant DL385 Server

<https://www.hpe.com/us/en/servers/proliant-dl-servers.html>

Supported Tape Libraries

HPE Tape Libraries

- HPE TFinity ExaScale Edition Tape Library
- HPE T950 Tape Library
- HPE StoreEver MSL4048, MSL3040, and MSL6480 Tape Libraries
- HPE StoreEver ESL G3 Tape Library

<https://www.hpe.com/us/en/storage/storeever-tape-storage.html>

Other Tape Libraries

- Spectra Logic® T50, T120, T200, T380, T680, T950, Stack, and TFinity
- IBM® TS3100, TS3200, TS4300 (3573), TS3310 (3576), and TS3500, TS4500 (3584)
- Oracle® SL150, L180, L700, L700e, SL500, SL3000, SL8500, and all ACSLS controlled libraries
- Overland® NEO series libraries
- Qualstar® XLS series libraries
- Quantum® i6, i40, i80, i500, i2000, and i6000



Standard Features

Supported Tape Drives

HPE Tape Drives

HPE LTO Ultrium Generation 2, 3, 4, 5, 6, 7, 8

Other Tape Drives

- IBM® LTO Ultrium Generation 2, 3, 4, 5, 6, 7, 8
- IBM® TS1120 (3592-E05), TS1130 (3592-E06), TS1140 (3592-E07), TS1150 (3592-E08), TS1155 (3592-55F), TS1160 (3592-60F)
- Oracle® T10000A, T10000B, T10000C, T10000D

Advanced Tape Features

- Logical Block Protection
- Recommended Access Order
- Spectra Logic TAOS
- Multi-Accessor Control

Disk Storage

HPE ZeroWatt Storage

Zero Watt Storage (ZWS) is a software-defined, performance oriented and power managed high density storage system created exclusively for HPE DMF. Combining HPE DL380 or DL385 server technology and HPE D6020 or D8000 JBOD storage hardware with an innovative on-disk format that enables very high data transfer rates, low mount time, and intelligent power management. ZWS represents the ideal warm tier storage option with optimized power utilization.

Cloud Storage

The DMF platform includes a Media- Specific Processor (MSP) for cloud and object storage environments that is based on the Simple Storage System (S3) interface originally created by Amazon. Cloud and object-based storage within DMF installations may be used for large-scale data storage as well as a repository for storing DMF recovery metadata and configuration information. This latter use case, when used with public cloud storage, provides an excellent means of implementing off-site metadata backups as part of a best practice disaster recovery plan.

Cloud and object storage systems supported through the S3 interface include:

- Amazon S3® Standard, Standard - Infrequent Access, and Reduced Redundancy Storage
- SUSE Enterprise Storage (Ceph)
- DDN WOS®
- Netapp StorageGRID® Webscale
- HGST Active Archive System®
- Scality® RING
- IBM® Cloud Object Storage
- Dell/EMC ECS

Supported Managed File systems

- HPE Clustered Extents File System (XFS and CXFS)
- Lustre

Supported Operating Systems

DMF 6.11

- RHEL 7.8
- SLES 12 SP5



Standard Features

HPE Warranty

Worldwide, 24-hour support is available for the HPE Data Management Framework software solution thru HPE. Customers are provided with complete installation services and given access to advanced services such as proactive checks and migration assistance.

Service and Support

3 year 7x24 (Foundation Care)



Configuration Information

HPE Data Management Framework Ordering Rules

New Installation Ordering Rules

HPE Data Management Framework SKUs

HPE Data Management Framework 6.x Server with Capacity E-LTU	Q2V41AAE
HPE Data Management Framework 6.x Parallel Data Mover E-LTU	Q2V42AAE
HPE Data Management Framework 6.x High Availability Server E-LTU	Q2V43AAE
HPE Data Management Framework 6. x 10TB Capacity E-LTU	Q2V45AAE
HPE Data Management Framework 6.x 10TB Increments Capacity E-LTU	Q2V46AAE
HPE Data Management Framework 6.x 100TB Capacity E-LTU	Q2V47AAE
HPE Data Management Framework 6.x 100TB Increments Capacity E-LTU	Q2V48AAE
HPE Data Management Framework 6.x 1PB Capacity E-LTU	Q2V49AAE
HPE Data Management Framework 6.x 1PB Increments Capacity E-LTU	Q2V50AAE
HPE Data Management Framework 6.x 10PB Capacity E-LTU	Q2V51AAE
HPE Data Management Framework 6.x 10PB Increments Capacity E-LTU	Q2V52AAE

Ordering Guidelines:

1. New installations MUST order Q2V41AAE
2. New installations MUST order one of the Base tier capacity licenses:

HPE Data Management Framework 6. x 10TB Capacity E-LTU	Q2V45AAE
HPE Data Management Framework 6.x 100TB Capacity E-LTU	Q2V47AAE
HPE Data Management Framework 6.x 1PB Capacity E-LTU	Q2V49AAE
HPE Data Management Framework 6.x 10PB Capacity E-LTU	Q2V51AAE

Capacity licenses for new installations are built from a base tier license plus additional incremental licenses.

Ex. 1 Capacity licenses for 20TB:

10TB Base Tier license + 10TB incremental license

Qty	HPE Part #	Description
1	Q2V45AAE	HPE Tiered Data Management DMF 6.x 10TB Capacity E-LTU
1	Q2V46AAE	HPE Tiered Data Management DMF 6.x 10TB Increment Capacity E-LTU

Ex. 2 Capacity Licenses for 160TB:

100TB Base Tier license + (6 x 10TB incremental license)

Qty	HPE Part #	Description
6	Q2V46AAE	HPE Tiered Data Management DMF 6.x 10TB Increment Capacity E-LTU
1	Q2V47AAE	HPE Tiered Data Management DMF 6.x 100TB Capacity E-LTU

1. If a Parallel Data Mover option, Q2V42AAE, HPE Tiered Data Management DMF 6.x Parallel Data Mover E-LTU, is ordered, the HPE Clustered Extents File System should be running on that server as well. The HPE Clustered Extents File System node licenses can be purchased either as a single license or in defined quantities, e.g. 5 node licenses, 10 node licenses, etc.
2. If the High Availability option, Q2V43AAE, HPE Tiered Data Management DMF 6.x High Availability Server E-LTU, is ordered, the server on which it resides should be running the HA version of RHEL or SLES.
3. If integration with Lustre is needed, Q2V44AAE, HPE Tiered Data Management DMF for Lustre Copy Tool E-LTU, should be ordered.



Configuration Information

DMF Upgrade Ordering Rules

If a customer wants to exist an existing installation, the following information is required:

- Existing licensed capacity
- Desired capacity

The necessary upgrade licenses consist of the addition of incremental capacity licenses necessary to reach the desired capacity.

Example 1

- Existing capacity: 50TB
- Desired capacity: 500TB
- Required capacity: 450TB

Required licenses:

Qty	HPE SKU	Description
5	Q2V46AAE	HPE Data Management Framework 6.x 10TB Increments Capacity E-LTU
4	Q2V48AAE	HPE Data Management Framework 6.x 100TB Increments Capacity E-LTU

Example 2

- Existing capacity: 50TB
- Desired capacity: 5000TB
- Required capacity: 4950TB

Required licenses:

Qty	HPE SKU	Description
5	Q2V46AAE	HPE Data Management Framework 6.x 10TB Increments Capacity E-LTU
9	Q2V48AAE	HPE Data Management Framework 6.x 100TB Increments Capacity E-LTU
4	Q2V50AAE	HPE Data Management Framework 6.x 1PB Increments Capacity E-LTU



Summary of Changes

Date	Version History	Action	Description of Change
06-Jul-2020	Version 11	Changed	Update for DMF 6.11 release Overview and Standard Features sections were updated
04-Nov-2019	Version 10	Changed	Minor update for DMF 6.10 release Overview, Standard Features and Additional Options sections were updated
04-Feb-2019	Version 9	Changed	Update Spectra Logic and IBM tape hardware support
03-Dec-2018	Version 8	Changed	Update for DMF 6.9 release in DMF Suite 4.1. QuickSpecs name changed from HPE Data Management Framework to HPE Data Management Framework 6
01-Oct-2018	Version 7	Changed	Update for ISSP 4.0.1 release. Additional Options and Standard Features sections were updated.
05-Mar-2018	Version 6	Changed	Update tape support list, fix URLs, list filesystem support
18-Dec-2017	Version 5	Updated	Update information from cloud storage
02-Oct-2017	Version 4	Updated	Corrections, add full tape support list, ZWS, and cloud
07-Aug-2017	Version 3	Updated	Update additional options
13-Jul-2017	Version 2	Changed	Correct QuickSpecs Headers
11-Jul-2017	Version 1	New	New QuickSpecs



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