

Dell EqualLogic Master Glossary

PS Series Firmware Version 10.0

FS Series Firmware Version 4.0



Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

About This Manual

Dell EqualLogic PS Series arrays optimize resources by automating capacity, performance, and network load balancing. Additionally, PS Series arrays offer all-inclusive array management software and firmware updates. Dell EqualLogic FS Series appliances, when combined with PS Series arrays, offer a high-performance, high-availability, scalable NAS solution.

Audience

The PS Series and FS Series documentation is designed for administrators who are responsible for managing a PS Series group and one or more FS Series appliances. Administrators are not required to have extensive network or storage system experience. However, it is helpful to understand:

- Basic networking concepts
- Current network environment
- Application disk storage requirements

In addition, administrators might find it useful to understand the basic concepts for:

- Network topologies
- RAID configurations
- Disk storage management

Related Documentation

For detailed information about PS Series arrays, FS Series appliances, groups, volumes, array software, and host software, log in to the [Documentation page](#) at the Dell EqualLogic customer support site.

Dell Online Services

To learn about Dell products and services:

1. Visit dell.com or the URL specified in any Dell product information.
2. Use the locale menu, or click the link that specifies your country or region.

Dell EqualLogic Storage Solutions

To learn more about Dell EqualLogic products and new releases being planned, visit the following site: [Dell EqualLogic TechCenter](#). At this site, you can also see articles, demos, online discussions, and more details about the benefits of the Dell product family.

Dell Technical Support and Customer Service

Dell support is available to answer your questions about PS Series arrays and FS Series appliances.

Contacting Dell

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services might not be available in your area. To contact Dell for sales, technical support, or customer service issues, go to dell.com/support.





Glossary Definitions

This master glossary defines the storage technology terminology that is specific to Dell EqualLogic. If a term has unique meaning in the context of hardware or of a specific software application, that context is indicated.

See the SNIA Dictionary (<http://www.snia.org/education/dictionary/>) for definitions of any industry-standard storage terms used in this manual.

Some terms have different meanings depending on the context, which is stated in parentheses at the beginning of the definition. For example, (*Group Manager*) indicates that the term has a specific meaning in the context of that application.

The glossary terms are listed in alphabetical order.

A

access control list (ACL)	(Volume security) A list of permissions attached to a volume. See access policy , access policy group , and basic access point .
access control record	(Volume security) As of PS Series firmware version 7.0, referred to as a basic access point .
access policy	(Volume security) A set of extended access points that provide a method for describing endpoints for a volume. After an access policy is associated with a volume, all the endpoints described by the extended access points have access to that volume.
access policy group	(Volume security) A set of access policies that can be associated to a volume. All endpoints described within those access policies have access to that volume.
active control module	(Hardware) In a dual control module array, the control module that is actively serving I/O on a network. If the active control module ceases to function, it fails over to the secondary control module.
array	(Hardware) A PS Series storage array is a self-contained storage unit that includes multiple disk drives configured in a highly available RAID set with dual control modules and redundant power supplies and cooling modules.
array serial number	A unique PS Series array identification string that is encoded in the array's hardware. See service tag .
Auto-Snapshot Manager/Microsoft Edition (ASM/ME)	A snap-in console application for the Microsoft Management Console that enables you to administer Smart Copies.
Auto-Snapshot Manager/Microsoft Edition Command Line Interface (ASMCLI)	A set of Smart Copy operation commands that you can execute from the Windows command prompt.

B

basic access point	(Volume security) Basic access points provide volume security by directly connecting a specific endpoint to a specific volume. Prior to PS Series firmware version 7.0, referred to as an access control record .
base volume	1. (Auto-Snapshot Manager/Microsoft Edition) A PS Series array volume mounted on the computer and reachable through its Windows-assigned drive letter (such as G:) or mount point.



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2. (Group Manager) A volume that has snapshots. Snapshots depend on the base volume; if the base volume is destroyed, the snapshots are removed.

C

cloning	The process of creating a new copy of an object such as a volume. The new object is the same type and has the same contents as the original. Contrast with thin clone .
control module	(Hardware) The processor and interface component in a PS Series array. A control module contains the PS Series firmware in flash memory and provides temporary power continuity for data stored in cached memory. It has multiple network interfaces and an optional serial port. An array can contain two hot-swappable, dual redundant controllers. The active control module serves I/O, while the secondary control module mirrors data in its cache.
control tunnel	An iSCSI session that connects two replication partners and is used to pass control messages between them. No volume data passes through this tunnel. See also Generic Replication Protocol (GRP) .
cross-platform replication	A method for performing volume replication between the PS Series and Storage Center series device families. This feature preserves the functional and operational models embodied in the current replication implementation for each family.

D

delegated space	(Group Manager) Space on a group that is set aside to store received replicas for a partner.
Dell Fluid File System (Dell FluidFS)	(Network-attached storage) FluidFS, a high-performance, scalable file system that is configured on storage space.
Dell Storage Update Manager (DSUM)	An application that updates your current Dell EqualLogic storage configuration (PS Series array and disk drive firmware, FS Series controller firmware).

G

Generic Replication Protocol (GRP)	A control message protocol, proprietary to Dell Storage, that is designed to provide a common language for facilitating volume replication between similar or different storage systems. The protocol can be run over a variety of transport layers.
group	See PS Series group .
group administrator	An account on a PS Series group that has permission to manage all features and objects in a PS Series group, including configuring replication partners. The default group administrator account is grpadmin. Compare to pool administrator .
group IP address	The network address that iSCSI initiators use to discover iSCSI targets and administrators use to access the group. See also management IP address .
Group Manager	A SAN and NAS management tool integrated with Dell EqualLogic PS Series firmware. Providing a comprehensive single point of management, Group Manager enables administrators to remotely manage all aspects of their EqualLogic iSCSI-based SAN or NAS.
group member	See member .
group name	A unique identifier assigned to a group.



H

Host Integration Tools for Linux (HIT for Linux)	A suite of tools that integrate Linux systems with PS Series storage arrays. It includes the Remote Setup Wizard Command Line Interface (RSWCLI), the EqualLogic Host Performance and Configuration Tuning Suite (eqltune), and EqualLogic Log Gathering Facility (eqllg).
Host Integration Tools for VMware (HIT/VMware)	A suite of tools that integrate ESX systems with PS Series storage arrays. It includes Virtual Storage Manager (VSM), Storage Replication Adapter (SRA) for VMware Site Replication Manager, and the Dell EqualLogic Multipathing Extension Module (MEM).
Host Integration Tools for Windows (HIT/Microsoft)	A suite of applications that enable you to configure and manage an array. It includes ASM/ME, DSM (Multipath I/O Device Specific Module), and RSW (Remote Setup Wizard).

L

local replication reserve	(Group Manager) Storage space on a primary group that is used to record changes to a volume when replication is configured and, optionally, to store a failback snapshot for a volume.
LUN	Logical Unit Number — A logical reference to a portion of a storage subsystem.

M

management IP address	In a group with a management network configured and enabled, an address used exclusively to log in to the Group Manager GUI or CLI.
management network	An optional management network that separates iSCSI traffic (volume I/O) from management traffic (GUI and CLI sessions, and other group management communications and intergroup operations).
Manual Transfer Utility (MTU)	A standalone utility from EqualLogic that performs volume replication using transportable media instead of the network. The utility has both graphical and command-line user interfaces.
member	An individual PS Series array or FS Series NAS controller configured into a PS Series group. A PS Series array NAS cluster appears in the group hierarchy as a member.
multipath I/O (MPIO)	Multiple connections from an iSCSI initiator to targets on a PS Series group over the network to provide redundancy and enhance performance.

N

NAS antivirus	(Group Manager) Allocates scanning operations to antivirus servers to maximize the available scanning bandwidth.
NAS appliance	(Group Manager) A hardware enclosure that contains two NAS controllers. When configured as part of a PS Series group, each appliance becomes an individual FluidFS member of the group. Appliances, when configured as part of a group, become a NAS cluster. See NAS controller and NAS cluster .
NAS cluster	(Group Manager) Hardware NAS appliances configured as part of a PS Series group. See NAS appliance .
NAS cluster IP address	(Network-attached storage) Highly available IP address that clients use to access SMB shares and NFS exports hosted by a NAS cluster.
NAS container	(Group Manager) An abstraction layer represented by a bounded, named subset of the NAS reserve space in which you create SMB shares and exports to make storage space available to users.



NAS controller	(Group Manager) One of two redundant, hot-swappable controllers in a NAS appliance. Together, the controllers are sometimes referred to as a <i>NAS controller pair</i> .
NAS data reduction	(Network-attached storage) Process that analyzes files to determine if multiple copies of an individual file or portions of a file, or blocks, can be saved in a more efficient format.
NAS data rehydration	(Network-attached storage) Restores data that was reduced during the data reduction process.
NAS reserve	(Network-attached storage) Storage pool space allocated to a NAS cluster for storing internal data and user data and configured with DSFS.

P

peer node	(Network-attached storage) NAS node with which a NAS node is paired in a NAS cluster.
peer storage group (PSG)	One or more EqualLogic peer storage arrays that are configured to act as a single SAN storage device.
pool	Storage space provided by one to eight members (and up to four pools in a group). You assign volumes to a specific pool, and load balancing operates only within pools.
pool administrator	(Group Manager) An account on a PS Series group that has permission to manage objects only in a specific pool or set of pools for a group. Compare to group administrator .
primary group	(Group Manager) In a replication partnership, the group containing the original volume. See secondary group .
primary volume	(Group Manager) A volume configured for replication to a replication partner.
PS series array	A single EqualLogic iSCSI storage unit, usually configured as a PS Series group. You can join multiple PS Series arrays into a larger PS Series group and manage them as a single iSCSI SAN.
PS Series group	An iSCSI storage entity comprising one or more PS Series storage arrays that you access through a single IP address and manage as a storage area network (SAN).

R

recoverable volume	(Group Manager) Deleted volumes are placed in the recovery bin, where they remain until they are purged or recovered. Recovering a volume moves the volume from the recovery bin back to the group. Volumes with no data are automatically deleted. Volumes in the recovery bin can be purged by the system if free space is needed for any other purpose.
recovery bin	(Group Manager) Area of pool free space used to preserve recoverable volumes. Volumes in the recovery bin can be restored or purged. See recoverable volume .
recovery container (NAS)	(Group Manager) For NAS replication, a destination container that is temporarily promoted for the purpose of recovering data from the replica. See NAS cluster , replica container (NAS) , and source container (NAS) .
recovery volume	Temporary volume created by promoting an inbound replica set as part of a failover operation. You can also create recovery template volumes and recovery thin clones.
Remote Setup Wizard (RSW), Remote Setup Wizard Command Line Interface (RSWCLI)	(Host Integration Tools) Interfaces that enable you to configure a PS Series array after you install the Host Integration Tools.

replica	A point-in-time representation of a PS Series volume. The original volume and its replica are located on different PS Series groups (replication partners) potentially separated by some geographical distance to facilitate disaster tolerance.
replica collection	(Group Manager) The set of replicas resulting from each replication of a volume collection.
replica collection set	(Group Manager) The set of replica collections for a volume collection.
replica container (NAS)	(Group Manager) For NAS replication, a NAS container on a NAS cluster that stores inbound data copied from a source container on a replication partner. See NAS cluster , recovery container (NAS) , and source container (NAS) .
replication	(Group Manager) The process of copying volume data from one group to another, which protects the data from a variety of failures with no effect on data availability or performance. See the <i>Dell EqualLogic Group Manager Administrator's Guide</i> for more information.
replication partner	(Group Manager) A group that is configured to send or receive replicas from another partner.
replica reserve	(Group Manager) The portion of delegated space on a replication partner that is set aside for the replica sets for a specific volume. You configure the replica reserve for the volume on the primary group, but the actual replica reserve is on the secondary group.
replica set	(Group Manager) The set of complete replicas for a volume, template volume, or thin clone volume.

S

SAN Headquarters (SAN HQ)	An application that enables you to monitor multiple PS Series groups from a single graphical interface. It gathers and formats performance data and other important group information.
secondary group	(Group Manager) In a replication configuration, the group that receives replicas of a source volume. See primary group .
self-encrypting drive (SED)	A self-encrypting drive (SED) performs Advanced Encryption Standard (AES) encryption on all data stored within that drive. To protect your company's valuable data, a SED will immediately lock itself when it is removed from the array or is otherwise powered down. If the drive is lost or stolen, its contents are inaccessible without the encryption key.
service tag	(Group Manager) A unique ID assigned by Dell to particular equipment, for use by customer service.
shrink (volume)	(Group Manager) Decreasing the reported size of a volume.
single sign-on (SSO)	(Group Manager) A feature that enables a user who has already logged in to a PC using Windows Active Directory (AD) credentials to log in to the Group Manager GUI without having to specify the credentials a second time.
Smart Copy	(Auto-Snapshot Manager/Microsoft Edition) A point-in-time, application-consistent copy of objects in a PS Series group. Smart Copies can be of type snapshot, clone, or replica, depending on the edition of Auto-Snapshot Manager that you are using.
smart tags	Provide a mechanism for PS group administrators to organize, search, and filter the volumes in their groups.
snapshot	A point-in-time representation of a PS Series iSCSI volume or NAS container. Seen on the network as an iSCSI target, a snapshot is maintained in an array as deltas from the original volume.
snapshot collection	A set of snapshots resulting from a snapshot operation on a volume collection. See volume collection .
source container (NAS)	(Group Manager) For NAS replication, the NAS container from which data is copied to a replica container in the partner PS Series group.
space borrowing	(Group Manager) Includes snapshot space borrowing and replication borrowing. As of PS Series firmware v8.0, the following borrowing capabilities are available:



- Extends the existing snapshot and local replica borrowing capability to enable borrowing from unused delegated space
- Provides borrowing to remote replicas so that they can borrow space beyond their replica reserve (similar to snapshot borrowing)

SupportAssist	An optional component of SAN Headquarters that enables you to collect, and optionally upload, PS Series group configuration diagnostic data to Dell Technical Support for analysis and diagnosis. SupportAssist is bundled with every SAN Headquarters server and configured from the SAN Headquarters client.
synchronous replication (SyncRep)	(Group Manager) The simultaneous writing of data to two pools for a volume in the same PS Series group, resulting in two hardware-independent copies of the volume data. Each write must go to both pools before the write is acknowledged as complete. If one copy of the volume data is not available, you can still obtain the data from the other pool.

T

template volume	Read-only volume from which you create thin clones.
thin clone	A volume that shares space with a template volume. Thin clones provide an efficient use of storage space for configurations with multiple volumes that have a large amount of common data.
thin provisioning	(Group Manager) The process of optimizing the use of storage space in a group through overallocation. An object (such as a volume) is attributed less physical space than is reported by the group to any computer that is connected to the volume.

U

unmanaged space	Delegated space capacity on the secondary group that is no longer accessible from the primary group. See replica reserve .
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V

Virtual Storage Manager (VSM) for VMware vSphere	An application packaged as a plug-in to VMware vSphere that provides Dell EqualLogic's storage efficiency, performance, and data protection, along with additional functions and tasks that can be applied to VMware objects.
volume	Storage allocated by a PS Series group as an addressable iSCSI target.
volume administrator	An account on a PS Series group that has permission to manage a quota of storage in one or more pools. A volume administrator can perform any volume operations, including replication, within their quota limit.
volume collection	(Group Manager) A number of volumes grouped together for purposes of performing operations on the volumes simultaneously. See snapshot collection and replica collection .
volume folder	(Group Manager) A folder that you can use to organize volumes in the Group Manager GUI. Volume folders are an organizational tool only; they do not affect the volumes they contain.
volume reserve	(Group Manager) The amount of space allocated to a volume from free pool space. Without thin provisioning, volume reserve is the same as the reported size.