Dynamic Virtual Storage

The Dell™ EqualLogic™ PS Series
The Dell™ EqualLogic™ PS Series is fundamentally changing the way enterprises think about purchasing and managing storage.

Built on breakthrough virtualized peer storage architecture, the EqualLogic PS Series simplifies the deployment and administration of consolidated storage environments.

Its all-inclusive feature set streamlines purchasing. Its intelligent software delivers rapid SAN deployment, easy storage management and comprehensive data protection. The system’s dynamic virtualization enables enterprise-class performance and reliability and seamless pay-as-you-grow expansion.

This simplicity yields important benefits: success and satisfaction for our users, which is supported by the fact that 98% of our customers would recommend the PS Series.\(^1\)

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The EqualLogic PS Series is a family of virtualized iSCSI storage arrays that combine intelligence and automation with fault tolerance to provide simplified administration, rapid deployment, enterprise performance and reliability, and seamless scalability. The PS Series high performance storage arrays deliver a range of capacity points from 400 GB to 48 TB in either a 3U or 4U chassis. PS Series arrays can be combined to create a virtualized SAN that scales up to 768 TB under a single management interface.

**Exceptional ease of use**

The PS Series intelligent storage arrays are designed to provide rapid deployment, simple management and seamless expansion. All PS Series storage arrays include SAN configuration features and capabilities that sense network topology, automatically build RAID sets, and conduct system health checks to help ensure that all components are fully functional. PS Series arrays are designed to be deployed, configured, and serving storage in less than one hour.

**Modular design with enterprise reliability**

EqualLogic PS Series arrays are based on a virtualized, modular storage architecture that enables IT managers to purchase only the storage they need, when they need it — preventing both underutilization and over-provisioning. Using innovative data movement technology, all EqualLogic PS Series arrays in a SAN work together to automatically manage data, load balance across all resources, and expand to meet growing storage needs.

The Dell EqualLogic PS Series is designed to meet and exceed the rugged requirements of the data center. Each array comes standard with fault tolerance capabilities through fully redundant and hot-swappable components — dual-controllers, multiple fan trays and power supplies, and disk drives with hot spares.

**Enterprise data services without additional cost**

The PS Series has built-in storage features once relegated to top-tier data centers, enabling best practice storage for every size organization. Unlike traditional storage arrays, the EqualLogic PS Series arrays include a comprehensive set of enterprise data services and software features with no additional software licensing fees.

Easy-to-use virtualization integration tools for Microsoft® and VMware® environments help deliver advanced data protection, high availability and performance, and simple management of application and virtual machines.

**Simply put:**

“The Dell EqualLogic architecture allows us to easily and seamlessly expand our pool of storage as we grow our virtual server environment in the future. So far, we have deployed 76 TB of raw storage across six EqualLogic arrays.”

Jonathan Chu-Yang, IT architect, Cadence; January 2010

**Flexibility with low cost of ownership**

EqualLogic PS Series arrays represent a breakthrough in storage economics, from purchase and setup to operation and upgrades. In addition to the extensive included software, the PS Series scales easily, on-demand — and online — allowing storage growth without costly application disruptions or lengthy service engagements. As a result, EqualLogic arrays provide exceptional flexibility at a low total cost of ownership.

Whether consolidating direct-attached storage (DAS), migrating from an existing SAN or NAS system, improving data protection, or simply adding capacity, the EqualLogic PS Series deploys flexibly to address enterprise storage needs. As business needs change, an EqualLogic SAN can easily adapt. Its virtualized architecture allows simple redeployment of arrays, tiered storage, thin provisioning, online volume movement and much more, all without extra cost and cumbersome processes. In order to optimize enterprise efficiency, capacity and performance the Dell EqualLogic PS Series support a unified data center fabric extending from servers, to storage and networks with 10GbE connectivity and automated tiering on hybrid storage arrays.
**PS Series iSCSI Storage Arrays**

**PS6000 Series:** Virtualized arrays designed for the Enterprise Data Center

**PS4000 Series:** Virtualized arrays designed for branch office and SMB needs

### Feature Comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>PS6000E</th>
<th>PS6500E</th>
<th>PS6500X</th>
<th>PS6000XX</th>
<th>PS6000XXS</th>
<th>PS6000XS</th>
<th>PS6500E</th>
<th>PS6500S</th>
<th>PS6500XS</th>
<th>PS6500XV</th>
<th>PS6010E</th>
<th>PS6010S</th>
<th>PS6010X</th>
<th>PS6510E</th>
<th>PS4000E</th>
<th>PS4000X</th>
<th>PS4000XXS</th>
<th>PS4000XS</th>
<th>PS4000XV</th>
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</thead>
<tbody>
<tr>
<td>Array capacity</td>
<td>2, 4, 8, 16 or 32 TB</td>
<td>24 or 96 TB</td>
<td>28.8 TB</td>
<td>24 or 96 TB</td>
<td>2, 4, 8, 16 or 32 TB</td>
<td>44 TB</td>
<td>44 TB</td>
<td>44 TB</td>
<td>48 or 96 TB</td>
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<td>48 or 96 TB</td>
<td>28.8 TB</td>
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<tr>
<td>Disk drives</td>
<td>8 or 16 – 7200 RPM SATA Drives</td>
<td>48–7200 RPM SATA Drives</td>
<td>48–10,000 RPM SAS Drives</td>
<td>16–10,000 RPM SAS Drives</td>
<td>16–15,000 RPM SAS and 8 Solid State Disk (SSD) Drives</td>
<td>8 or 16 SSD Drives</td>
<td>8 or 16 – 7200 RPM SATA Drives</td>
<td>16 – 8/15,000 RPM SAS and 8 Solid State Disk (SSD) Drives</td>
<td>8 or 16 – 10,000 RPM SAS Drives</td>
<td>8 or 16 – 15,000 RPM SAS Drives</td>
<td>8 or 16 – 10,000 RPM SAS Drives</td>
<td>8 or 16 – 2,000 RPM SATA drives</td>
<td>8 or 16 – 16,000 RPM SATA Drives</td>
<td>16–10,000 RPM SAS Drives</td>
<td>16–15,000 RPM SAS Drives</td>
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<tr>
<td>Drive capacities</td>
<td>250 GB, 500 GB, 1,002 TB</td>
<td>500 GB, 1,002 TB</td>
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<tr>
<td>Network connectivity</td>
<td>4 Ethernet/iSCSI Ports per Controller</td>
<td>2 controllers/array; Two 10 Gb Ethernet/iSCSI Ports per Controller</td>
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<td>Chassis</td>
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<td>Memory</td>
<td>4 GB</td>
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<tr>
<td>Maximum Number of Arrays Per PS Series Group</td>
<td>16 PS Series arrays, including up to 2 PS4000 arrays</td>
<td>2 PS4000 arrays</td>
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* Please contact Dell Sales Rep for details.

### Enterprise Data Services

All-inclusive with no separate licenses on all PS Series arrays

- **Data Protection, Availability & Recovery**
  - Auto-Replication, Multi-Site
  - Instant Volume Restore
  - Multi-Path I/O
  - Multi-Volume, Writeable Snapshots
  - Snapshots and Auto-Replication Scheduler
  - Volume Cloning
  - Thin Clones
  - Volume Consistency Sets

- **Storage Virtualization**
  - Non-Disruptive Array Addition and Removal
  - Automatic Load Balancing
  - Automatic or Manual Storage Tiering
  - Complete SAN Virtualization
  - Online Data and Volume Movement
  - RAID Load Balancing
  - Storage Pools
  - Thin Provisioning
  - Full Copy
  - Block Zeroing and Hardware-Assisted Locking

- **Server Management & Protection Integration**
  - Auto-Snapshot Manager/Microsoft® Edition
  - Auto-Snapshot Manager/VMware® Edition
  - Automatic MPIO Connection Management
  - Microsoft® VSS and VDS Providers
  - Smart Copy for Microsoft® Hyper-V®, Exchange®, SQL Server®, File Systems and VMware® VMFS
  - VMware® Site Recovery Manager Adapter

- **Management**
  - PS Group Manager
  - SAN HeadQuarters Multi-Group Monitoring
  - Rapid Provisioning
  - Remote Setup Wizard
  - Roles-Based Administration
  - Volume Management

- **Maintenance**
  - Auto-Stat Disk Monitoring System
  - E-Mail Home
  - Enclosure Monitoring System
  - Detailed Historical Performance Monitoring

* Qualified for Microsoft® Windows Server® 2003, Windows Server® 2008, including Hyper-V®, Windows Server® 2008 R2, including Hyper-V®, VMware®, Linux® and Sun® Solaris® Operating Systems

* Qualified for Microsoft® Windows Server® 2003, Windows Server® 2008, including Hyper-V® and Windows Server® 2008 R2 including Hyper-V®

* Qualified for VMware® ESX 3, 3.5, 4 and 4.1 and ESXi 3.5, 4 and 4.1

Simplify your storage at [Dell.com/PSSeries](http://Dell.com/PSSeries)