



# Dell EqualLogic Quick Reference Guide



PS4000

PS6000/PS6500

PS6010/PS6510

**Elevator Pitch**

The Dell™ EqualLogic™ family of iSCSI SANs from Dell is fundamentally changing the way enterprises think about purchasing and managing storage. Built on a virtualized peer storage architecture, the EqualLogic PS Series simplifies the deployment and administration of consolidated storage environments. Its all-inclusive, intelligent feature set streamlines purchasing, delivers rapid SAN deployment, easy storage management, comprehensive data protection, enterprise-class performance and reliability, and seamless pay-as-you grow expansion. All EqualLogic PS Series arrays are completely interoperable, and can be mixed and matched to build tiered storage within a single SAN or across SAN groups.

**Description**

The Dell EqualLogic PS4000 brings data-center-class IT solutions such as consolidation and virtualization to remote office and small medium business storage deployments. Get the same innovative EqualLogic virtualized architecture and full software feature set as previous generations at an affordable entry point.

The EqualLogic PS6000 Series is a line of enterprise-class midrange storage arrays that delivers exceptional self-optimizing performance, virtualized server integration, integrated data protection for key business applications, consolidated management, and deployment flexibility without compromising data availability.

The newest iSCSI arrays in the PS Series, the EqualLogic PS6010 and PS6510 models, add the power of 10GbE technology to the exceptional EqualLogic storage performance of previous generations. They deliver increased bandwidth performance for critical business applications, virtualization, storage consolidation and high-performance data backup and data protection.

**Software**

Unlike traditional SANs, the EqualLogic PS Series of arrays come with the software and applications expected from an enterprise-level SAN, at no additional charge — there is no additional software to install or service costs to incur to initiate the data management and protection features for this enterprise-class SAN.

**Basic Features**

**Data Management**

- Roles-based Administration
- Rapid Provisioning
- Remote Setup Wizard
- PS Group Manager
- Volume Management
- SAN Headquarters Multi-Group Monitoring

**Data Protection & Availability**

- Multipath I/O
- RAID 5, 6, 10, 50
- Automatic RAID Placement
- Volume Consistency Sets

**Data Maintenance**

- E-mail Home
- Enclosure Monitoring System
- Performance Monitoring
- Auto-stat Disk Monitoring System

**Advanced Features**

**Storage Virtualization**

- Array Evacuation
- Automatic Load Balancing
- Automatic or Manual Storage Tiering
- Complete SAN Virtualization
- Online Data and Volume Management
- RAID Load Balancing
- Storage Pools
- Thin Provisioning

**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 Exchange, SQL Server, Windows NTFS File Systems, Hyper-V virtual machines, and VMware VMFS
- VMware Site Recovery Manager Adapter

**Data Protection & Recovery**

- Multi-volume, Writable Snapshots
- Instant Volume Restore
- Volume Cloning
- Auto-replication, Multi-way
- Snapshot and Auto-replication Scheduler

**SAN HQ**

**From a single user interface, SAN HQ lets you:**

- Monitor multiple EqualLogic SAN Groups
- Launch the EqualLogic Group Manager management console for any monitored storage group
- Get a consolidated view of alerts
- Perform trend analysis, with SAN HQ's customizable views according to storage manager-defined timelines
- Manage multiple versions of firmware

**SAN HQ helps administrators to:**

- Better understand storage performance and capacity usage over time
- More effectively allocate storage resources by identifying underutilized resources
- Quickly be informed of events and potential issues such as latency

**SAN HQ gathers and reports data on:**

- Capacity
- I/O Performance
- Network Data
- Member Hardware and Configuration
- Volumes Data

**Competitors**

HP EVA, Net App, HP LeftHand, Compellent, IBM

**Customer Profile**

- Virtual Server Deployments in branch offices and Small Medium Businesses
- Departmental storage consolidation
- Simplifying data protection and disaster recovery at remote sites

- Data center consolidation and virtualization
- Microsoft Exchange, SQL, Oracle and other critical business applications
- Disaster recovery
- Large-scale SAN deployments

- Data center consolidation and stronger performing virtualization environments
- High sequential performance and capacity for streaming media and critical business applications
- Stronger performing data backup and Disaster recovery
- Scale-out capacity and performance

**Qualifying Questions**

- What is the project that is driving the need for storage? (What application or initiative is driving it? i.e., VMware, Citrix, Exchange, DR, server/storage virtualization and consolidation, etc.)
- Does your prospect have a current SAN?
  - **If yes**, what is their current storage platform? How many TB of raw storage do they currently have? Do they anticipate significant growth in the next year or two?
  - **If no**, is their data all contained within the servers and/or a direct attached storage device?

- Is the storage purchase budgeted? Purchase timeframe?
- Is there a compelling event or customer pain point that is driving the storage purchase? (Lease expiration, warranty expiration, out of disk space, suffered a major outage, improve back-ups, DR project deadline, new application being launched, etc.)
- What is the solution selection and decision process? Who is involved?
- What other storage solutions are you considering?
- Who is the final decision maker that will approve the purchase?
- Has the prospect seen a demo? (Event demo, onsite demo, web demo, etc.) If yes, when/where?

**If you hear these words, there's probably a SAN opportunity:**

**Disaster Protection**  
Exchange, SQL, Oracle  
1 TB or more of data  
College/University

**Backup/Restore issues**  
"Database", "Email"  
Server Consolidation  
Storage Management

**Remote Replication**  
Performance  
Storage Consolidation  
Virtualization

**Redundancy**  
Blade servers  
Medical/HIPPA

# Solutions Scenarios:

**Issue:**

**Server Management - Consolidation**

What type of data storage do you currently have (SAN, DAS, NAS)? Do you have to continually add capacity to some servers while other servers have unused capacity going to waste? How many servers are you managing? What type of applications and operating systems do you have? How much capacity are you managing currently? How much growth do you anticipate?



**Scenario # 1**

**iSCSI SAN**

- Event:** When planning for future capacity growth
- Question:** would it help if
- Player:** you
- Action:** could allow all servers to access a shared pool of storage rather than using individual server resources?

**Issue:**

**Disaster Recovery Requirements**

Do you have a Disaster Recovery Plan in place? What is it? What regulatory/compliance issues do you and your company face today (SOX, HIPPA)? How are you currently storing your data at both your Primary and/or secondary sites, (SAN, DAS, NAS)? What are the storage capacity requirements at each location? What size WAN link will be used between locations?



**Scenario # 2**

**Replication**

- Event:** When implementing a Disaster Recovery Plan
- Question:** would it help if
- Player:** a storage provider
- Action:** could also provide replication capabilities with no expensive channel extension equipment, add-on software, or costly staff training needed?

**Issue:**

**Storage Growth Requirements**

How much faster is your storage requirement growing than your server requirements? What is your current storage capacity? What is the estimated storage capacity you will need in the next year? Are you looking to increase the size of your SAN, more fabrics and more ports or just ports, in the next 2 years? What types of applications and operating systems do you have? Which applications are mission critical?



**Scenario # 3**

**Scalability (Tiered Storage)**

- Event:** When implementing additional storage capacity to meet growing requirements
- Question:** would it help if
- Player:** you
- Action:** could physically and logically combine arrays to configure storage pools or tiers to optimize performance and capacity according to application-specific demands?

**Issue:**

**Back Up Complexity**

How is your back up done now? How long is your back up window? How does that affect your IT staff? How many employees are in your IT organization? How confident are you that you can restore data to the way it was before a crash, virus, bug, upgrade or mistake?



**Scenario # 4**

**Back up & Recovery**

- Event:** To shorten back up windows
- Question:** would it help if
- Player:** you
- Action:** could take Snapshots of your data to virtually eliminate the back up window along with having the ability to instantaneously restore your data?

## PS series iSCSI storage arrays

	PS4000E	PS4000X	PS4000XV	PS6000E	PS6500E	PS6500X	PS6000X	PS6000XV	PS6000S	PS6010E	PS6010S	PS6010X	PS6010XV	PS6510X	PS6510E
<b>Array capacity</b>	2, 4, 8 or 16 TB	6.4, 7.2, or 9.6 TB	4.8, 7.2 or 9.6 TB	2, 4, 8 or 16 TB	24 or 48 TB	28.8 TB	6.4, 7.2 or 9.6 TB	4.8, 7.2 or 9.6 TB	400, 800 GB or 1.6 TB	4, 8, or 16 TB	800 GB or 1.6 TB	4.8 or 9.6 TB	4.8 or 9.6 TB	28.8 TB	48 TB
<b>Disk drives</b>	8 or 16-7,200 RPM SATA Drives	16-10,000 RPM SAS Drives	16-15,000 RPM SAS Drives	8 or 16-7,200 RPM SATA Drives	48-7,200 RPM SATA Drives	48-10,000 RPM SAS Drives	16-10,000 RPM SAS Drives	16-15,000 RPM SAS Drives	8 or 16 Solid State Disk (SSD) Drives	8 or 16 7200 RPM SATA Drives	8 or 16 -100 GB SSD Drives	8 or 16 -10,000 RPM SAS Drives	8 or 16 -15,000 RPM SAS Drives	48 - 10,000 RPM SAS Drives	48 - 7,200 RPM SATA Drives
<b>Drive capacities</b>	250 GB, 500 GB or 1 TB	400 GB, 450 GB or 600 GB	300 GB, 450 GB or 600 GB	250 GB, 500 GB or 1 TB	500 GB or 1 TB	600 GB	400 GB, 450 GB or 600 GB	300 GB, 450 GB or 600 GB	50 or 100 GB	500 GB, 1 TB	100 GB	600 GB	600 GB	600 GB	1 TB
<b>Full hardware redundancy</b> Hot-swappable controllers, fans, power supplies, disks	Yes			Yes											
<b>Network connectivity</b>	2 Ethernet/iSCSI ports per Controller for I/O; 1 Ethernet port for management			4 Ethernet/iSCSI ports per Controller						2 controllers/array; two 10 Gb Ethernet/iSCSI ports per Controller					
<b>Chassis</b>	3U	3U	3U	3U	4U	4U	3U	3U	3U	3U	3U	3U	3U	4U	4U
<b>Memory</b>	2 GB or 4 GB	4 GB	4 GB	4 GB	4 GB	4GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	4 GB	
<b>Maximum number of arrays per PS Series Group</b>	2 PS4000 arrays			16 PS Series arrays, including up to 2 PS4000 arrays											
<b>Enterprise Data Services</b>	Yes, all inclusive with no separate licenses on all PS Series arrays														

## Top Competitive Advantages

**Easier to buy, deploy, manage, and scale**

- All inclusive affordable pricing model – full feature set at significantly lower cost
- Intuitive management interface w/ automated functions to eliminate disruptions and manual configuration tuning
- Single architecture, scales on demand

**Lower product life cycle cost**

- Add latest & greatest hardware to your existing SAN rather than replacing what you bought before
- More performance can be achieved using fewer disks
- With EqualLogic, different generations of controllers, disk sizes, speeds, and RAID levels can be mixed in a single pool
- No forklift upgrades

**Dell tools can recover SQL, Exchange, and VM's.**

- The SQL or Exchange administrator can do full or partial restores easily and without the help of the storage administrator

## Objection Resolution

**"I need Fibre Channel"**

This is usually a performance argument. However, controller efficiency and the number of disks, rather than the bandwidth of your network connectivity or type of disk connectivity, are the typical bottlenecks for most business applications. iSCSI lets businesses utilize existing skills and network infrastructure to create IP-based SANs that deliver the performance of Fibre Channel, but at a fraction of the cost

**Benefits of iSCSI**

- Simplified deployment and management: storage networks can be set up quickly with minimal effort
- Enables cost-effective, scalable, secure, and highly-available SANs
- Utilizes existing management skills and network infrastructure
- Delivers excellent performance
- Provides interoperability using industry standards
- Implemented by the leading server, storage, and network providers
- Available for 10GbE vs. 4GbE FC

## Top Sales Tactics

**Conduct an on-site demo**

- Additionally, challenge competitors to do the same so prospects can experience the added complexity of the competitor's solution

**Proposals:**

- Dell is cost-effective when evaluating TCO and comparing competitor's software and maintenance costs. Ask for an apples to apples quote including years 4/5 maintenance costs
- Focus on cost for capacity and performance, not raw GB and raw spindle

**Awards:**

**Dell EqualLogic PS Series – Winner of 2010 InfoWorld Technology of the Year Award**  
"Dell EqualLogic SANs subscribe to the concept of 'Do one thing and do it well,' and boy, do they do it well... just blazing fast iSCSI performance and a hugely scalable design..." - Paul Venezia, InfoWorld

**Register for a live demo - [www.dell.com/equallogic](http://www.dell.com/equallogic)**

**EqualLogic PS Series Sizing Tool**

[www.Dell.com/Partner](http://www.Dell.com/Partner) > Program and Practice Areas, Enterprise Architecture > Enterprise Architecture Resources (bottom of page) > Technical Tools > EqualLogic PS Series Sizing Tool

**Dell PartnerDirect Portal - [www.dell.com/partner](http://www.dell.com/partner)**

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