

# DELL EQUALLOGIC™ PS6000X



The Dell EqualLogic PS6000X is a virtualized iSCSI SAN that combines intelligence and automation with fault tolerance to provide simplified administration, rapid deployment, enterprise performance and reliability, and seamless scalability. With 10,000 RPM SAS disk drives, the PS6000X array provides up to 6.4 TB of storage for a great balance of cost-effective performance and capacity. The PS6000 line features a redesigned controller with 2x the memory of its predecessor and a fourth Gigabit Ethernet port that can deliver improved sequential read and write performance<sup>1</sup>.

## EXCEPTIONAL EASE OF USE

The PS6000X is an intelligent storage array that is designed to provide rapid installation, 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. A PS6000X is designed to be installed, 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 — helping to prevent 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 EqualLogic SAN line is designed to meet and exceed the rugged requirements of the data center. The PS6000X includes fault tolerance capabilities through fully redundant and hot-swappable components — dual-controllers, standard dual fan trays, dual power supplies, and disk drives with hot spares.

## ENTERPRISE DATA SERVICES WITHOUT ADDITIONAL COST

With built-in storage features once available only to top-tier data centers, the PS6000X enables best practice storage for every size organization. EqualLogic PS Series arrays include the following enterprise data services and software features with no additional software licensing fees:

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

**DATA PROTECTION, AVAILABILITY AND RECOVERY** | Auto-Replication, Multi-Way • Instant Volume Restore • Multi-Path I/O<sup>2</sup> • Multi-Volume, Writeable Snapshots • Snapshot and Auto-Replication Scheduler • Volume Cloning • Volume Consistency Sets

**STORAGE VIRTUALIZATION** | Array Evacuation • Automatic Load Balancing • Automatic or Manual Storage Tiering • Complete SAN Virtualization • Online Data and Volume Movement • RAID Load Balancing • Storage Pools • Thin Provisioning

**MAINTENANCE** | Auto-Stat Disk Monitoring System • E-mail Home • Enclosure Monitoring System • Detailed Historical Performance Monitoring

**SERVER MANAGEMENT AND PROTECTION INTEGRATION** | Auto-Snapshot Manager/Microsoft<sup>®</sup> Edition<sup>3</sup> • Auto-Snapshot Manager/VMware<sup>™</sup> Edition<sup>4</sup> • Automatic MPIO Connection Management • Microsoft<sup>®</sup> VSS and VDS Providers • Smart Copy for Microsoft<sup>®</sup> Hyper-V<sup>5</sup>, Exchange<sup>®</sup>, SQL Server<sup>®</sup>, Windows<sup>®</sup> File Systems and VMware<sup>®</sup> VMFS • VMware<sup>®</sup> Site Recovery Manager Adapter

## FLEXIBILITY WITH LOW COST OF OWNERSHIP

The Dell EqualLogic PS Series arrays represent a breakthrough in storage economics, from purchase and setup to operation and upgrades. Unlike traditional SANs, the EqualLogic PS Series includes software and applications expected from an enterprise-level SAN at no extra cost. The PS Series scales on-demand — and online — allowing storage growth without disrupting applications. As a result, EqualLogic PS6000X arrays provide exceptional flexibility at a low total cost of ownership.

Whether consolidating a direct-attached storage (DAS) infrastructure, migrating data from an existing SAN or NAS system, streamlining data protection processes, or simply adding storage capacity, the EqualLogic PS Series from Dell offers a family of proven, high-performance, self-managing storage arrays designed to meet the requirements of today's critical datacenter environments.

<sup>1</sup>Based on testing performed by Dell Labs in January 2009 comparing Dell EqualLogic PS6000 Series arrays to PS5000 Series arrays

<sup>2</sup>Qualified for Microsoft<sup>®</sup> Windows Server<sup>®</sup> 2000 and 2003, VMware<sup>®</sup>, Linux<sup>®</sup> and Sun<sup>®</sup> Solaris<sup>®</sup> Operating Systems

<sup>3</sup>Qualified for Microsoft<sup>®</sup> Windows Server<sup>®</sup> 2003 and Windows Server<sup>®</sup> 2008, including Hyper-V<sup>®</sup>

<sup>4</sup>Qualified for VMware<sup>®</sup> ESX 3.5, ESXi 3.5 and ESX 3

<sup>5</sup>Expected availability in Q2, 2009



FEATURES		DELL EQUALLOGIC™ PS6000X	
<b>Product Configurations</b>			
Storage Controllers	Dual controllers with a total of 4 GB battery-backed memory Battery-backed memory provides up to 72 hours of data protection		
Hard Disk Drives	Sixteen (16) SAS hot-pluggable hard disk drives		
Drive Capacity	10,000 RPM SAS drives available in 400 GB		
System Capacity	6.4 TB using sixteen (16) 400 GB SAS disk drives		
<b>Technical Highlights</b>			
Volumes	Up to 1,024		
Snapshots	512 per volume / up to 10,000 total		
Hosts Accessing PS Series Group	Up to 512 per pool / 2,048 per group		
Host Protocol	Any standards-compliant iSCSI initiator		
Operating Systems Supported	Windows® 2000 Server, Windows Server® 2003, Windows Server® 2008, including Hyper-V®, Windows Vista®, Windows XP®, Red Hat® Enterprise Linux®, SUSE® Linux® Enterprise, Linux, Sun® Solaris®, UNIX®, IBM® AIX®, HP-UX®, Mac OS® X, VMware® ESX Server 3 / 3.5 / ESXi 3.5, Citrix® XenServer®, Virtual Iron®, Novell® Netware®		
RAID Support	Automatic RAID 5, RAID 6, RAID 10, and RAID 50		
GbE Network Interfaces	Four (4) copper per controller		
TCP Network Support	IPv4, IPv6 core support including JITC		
Expansion Option	Can be combined with other EqualLogic PS Series arrays in the same SAN group, online		
Reliability	Redundant, hot-swappable controllers, power supplies / cooling fans, and disks Individual disk drive slot power control		
Enclosure Monitoring System	Automatic spare configuration and utilization SMART Automatic bad block replacement Auto-Stat Disk Monitoring System (ADMS) to monitor health of data on disk drives		
Management Interfaces	SAN HeadQuarters multi-group performance and event monitoring tool Serial console Ability to configure a separate management network		
Security	CHAP authentication Access control for iSCSI Access control for management interfaces including RADIUS support		
Notification Methods	SNMP traps, e-mail, syslog		
Power	AC voltage: 100-240 VAC ±10% single phase Power factor: 0.98 (minimum) Heat dissipation: 1,740 BTU per hour (maximum)		
Environmental	Frequency: 47-63 Hz Power consumption: 520 VA, 540 Peak VA (operating maximum) Power supplies: Dual 440W dc Temperature range: 5 to 35°C / 41 to 95°F Storage temperature: -20 to 60°C / -22 to 140°F Altitude: -70 to 3,048 m operational / -305 to 12,192 m non-operational Relative humidity: 20 to 80% non-condensing operational / 5 to 95% non-condensing non-operational Shock: 5 g 10 ms ½ sine operational / 30 g 10 ms ½ sine non-operational Vibration: Random .21 grms @ 5-500Hz operational / Random 1.04 grms 2-200Hz non-operational Acoustics: Sound Power Operating: <5.8 db LpA @ 20°C Air Quality: Airborne contaminant level of G2 or lower as defined by ISA-S71.04-1985		
Physical	Height: 13 cm / 5.12 in / 3 EIA units Width: 48.26 cm / 19.0 in / 1EC Rack Compliant Depth: 55.1 cm / 21.7 in Weight: 36 kg / 79.6 lb (maximum configuration)		

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