Dell EqualLogic PS6000E/6010E

The Dell™ EqualLogic™ PS6000E/6010E 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 SATA disk drives, the PS6000E/6010E delivers good cost-per-gigabyte and up to 32 TB[†] of high-capacity storage per array. The PS6000 line features a redesigned controller with 2x the memory of previous generations. A fourth Gigabit Ethernet port on the PS6000E helps deliver improved sequential read and write performance[1]; and the PS6010E features two 10GbE ports that can deliver up to 10x the bandwidth per port and 2.5x the bandwidth per array compared to previous generations[2].

Exceptional ease of use

The PS6000E/6010E 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 connections, automatically build RAID sets, and conduct system health checks to help ensure that all components are fully functional. A PS6000E/6010E 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 — to help 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 PS6000E/6010E 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.

Feature-rich software portfolio without additional cost

With built-in features that help deliver high-performing, efficient storage infrastructures, the PS6000E/PS6010E enables best practice storage for every size organization. The EqualLogic PS Series arrays include the following software with no additional software licensing fees:

Dell EqualLogic Firmware version 5.0

EqualLogic Firmware is a full-function SAN operating system that provides the following features:

Management | Roles-Based Administration • Volume Management • Dell EqualLogic Group Manager CLI and GUI

Data Protection, availability and recovery | Auto-Replication, Multi-Site • Instant Volume Restore • Multi-Path I/O[3] • Multi-Volume, Writeable Snapshots • Snapshot 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 • Automatic load balancing of volumes across RAID types • Storage Pools • Thin Provisioning • SAN Data Copy Offload • SAN Zero Offload and Scalable Lock Management for VMware®

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

Dell EqualLogic Host Software

EqualLogic Host Software extends the functionality of the array based software enabling cooperation with the host. The following titles are made available with your EqualLogic array purchase.

Dell EqualLogic Remote Setup Wizard | Step-by-step user interface that simplifies traditionally tedious setup and maintenance tasks

Dell EqualLogic Host Software for Windows | Auto-Snapshot Manager/Microsoft® Edition[3]• EqualLogic Multipath I/O Device Specific Module[3] • EqualLogic Volume Shadow Copy Service (VSS) and Virtual Disk Service (VDS) Provider Services[3]

Dell EqualLogic Host Software for VMware | EqualLogic Auto-Snapshot Manager/VMware® Edition[3] • EqualLogic Multipath Extension Module for VMware® ESX[3] • EqualLogic Storage Adapter for VMware® Site Recovery Manager[3]

Dell EqualLogic SAN Headquarters[3] (SAN HQ) | Monitoring and analysis tool that provides centralized access to detailed performance and event data

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 PS6000E/6010E arrays provide exceptional flexibility at a low total cost of ownership.

Comprehensive data management services options

Dell believes that a well planned and maintained storage infrastructure can support growing data requirements without the corresponding increase in cost and complexity. Intelligent data management allows organizations to optimize the value of their storage investment with a better use of resources. Dell Data Management Services can help customers design, implement, manage and maintain storage infrastructures that satisfy data availability, retention and recovery requirements.

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.

Feature	PS6000E	PS6010E
Product Configurations		
Storage Controllers	Dual 1GbE iSCSI controllers with a total of 4 GB† battery-backed memory Battery-backed memory provides up to 72 hours of data protection	Dual 10GbE iSCSI controllers with a total of 4 GB† battery-backed memory Battery-backed memory provides up to 72 hours of data protection
Network Interfaces	Four (4) RJ-45 1GbE copper per controller	Two (2) SFP+ per controller, One (1) 10/100 copper (optional management network only) per controller
Hard Disk Drives	Sixteen (16) SATA hot-pluggable hard disk drives (Eight (8) drive configuration available. Please contact your Dell Sales Representative for details)	
Drive Capacities	7,200 RPM SATA II drives available in 250 GB†, 500 GB†, 1 TB† or 2 TB††	7,200 RPM SATA II drives available in 500 GB†, 1 TB† or 2 TB††
System Capacities	From 4 TB† Minimum to 32 TB† Maximum	From 4 TB† Minimum to 32 TB† Maximum
Technical Highlights		
Volumes	Up to 1,024	
Snapshots	512 per volume / up to 10,000 total per group	
Volume Connections Per PS Series Group	Up to 1,024 per pool / 4,096 per group	
Host Protocol	Any standards-compliant iSCSI initiator	
OS Supported	Windows® 2000 Server, Windows Server® 2003, Windows Server® 2008, including Hyper-V™, Windows Vista®, Windows Server® 2008 R2 including Hyper-V™, Windows XP®, Red Hat® Enterprise Linux®, SUSE® Linux® Enterprise, Sun™ Solaris™, IBM® AIX®, HP-UX, Mac OS® X, VMware® ESX Server 3 / 3.5 / 4 / 4.1, ESXi 3.5 / 4 / 4.1, Citrix® XenServer™, Novell® NetWare®	
RAID Support	RAID 5, RAID 6, RAID 10, and RAID 50	
TCP Network Support	IPv4, IPv6 core support	
Expansion Option	Can be combined with other EqualLogic PS Series arrays in the same SAN group, online. Up to 16 total members per group	
Reliability	Redundant, hot-swappable controllers; power supplies / cooling fans, and hot-swappable 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 SNMP, telnet, SSH, HTTP, Web (SSL), host scripting Multi-administrator support	
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 Frequency: 47-63 Hz Power factor: 0.98 (minimum) PS6000E: Power consumption: 450 VA, 530 Peak VA (operating maximum), Heat dissipation: 1,550 BTU per hour (maximum) PS6010E: Power consumption: 480 VA, 530 Peak VA (operating maximum), Heat dissipation: 1,640 BTU per hour (maximum) Power supplies: Dual 440W dc	
Environmental	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 / 78.6 lb (maximum configuration)	
Dell Basic and Optional Support Services	**1-Year Dell Basic Service*:** Included with all EqualLogic purchases. For a period of one year – telephone support services during local business hours excluding local national holidays; service parts shipped via next business day freight method or the next most expedited shipping available in the locality; access to software/firmware updates. **Dell ProSupport** for IT or End-Users with NBD or 4 Hour Onsite Options:** Direct access to Dell experts, 7x24x365 phone support, collaborative hardware and software support, escalation support, global Command Center management and monitoring, how-to application and configuration assistance (Dell ProSupport for End-Users only). **Additional Dell ProSupport** Options include:** Keep your Hard Drive (KYHD), Mission Critical, and Dell ProSupport for IT with Enterprise-Wide Contract.	
Optional Dell IT Consulting Services	**Data Management Consulting from Dell**** offers a comprehensive suite of assessment, design and implementation services to help customers get the most from their EqualLogic PS Series product, covering data management, application performance, data protection and cost of ownership. Dell consultants can provide practical action-oriented plans, to help deliver specific, predictable and measureable outcomes through high-impact, short duration projects.	

†GB means 1 billion bytes and TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.

††2 TB drives available August 2010. TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.

*For a copy of the EqualLogic Limited Warranty and Dell's Basic Service Description write Dell Inc., Attn: Customer Service, 300 Innovative Way, Suite 301, Nashua, NH 03062 USA or see www.dell.com/warranty and www.dell.com/servicecontracts

** Availability and terms of Dell Services vary by region. For more information, visit www.dell.com/servicedescriptions

Simplify your storage at Dell.com/PSseries

SS688_PS6000E_PS6010E_051910_062910