



# EqualLogic PS-M4110 Blade Arrays

Dell EqualLogic continues to drive innovation by delivering all the functionality and enterprise-class features of its traditional EqualLogic arrays in a new blade form factor.

The introduction of the PS-M4110 Blade Array enables a fully virtualized solution integrating storage, servers and networking within one blade chassis. With its unique peer scalability, all-inclusive software and ease of management, the PS-M4110 Blade Array is the industry's only fully redundant, enterprise class storage array designed to fit inside a blade chassis.<sup>1</sup>

## Converge without compromise

Compute, network and store your Dell™ PowerEdge™ M-Series servers, Dell Networking MXL switches, and Dell EqualLogic™ Blade Arrays in a single blade chassis. With the physical convergence of high-performing Dell servers, networking and storage, you receive a fully virtualized, end-to-end 10GbE data-center-in-a-box solution — giving you the everyday simplicity you need to help reduce your physical footprint as well as your hardware, licenses, configuration, and power and cooling costs. Dell's converged data-center-in-a-box is streamlined and easy to deploy with less than twenty minutes to configure — and in fewer than half the steps compared to a competitive solution.<sup>2</sup> By converging into a blade solution, you can respond more quickly to the challenges of your business.

## Scale performance and capacity, seamlessly

Flexible and seamless scalability gives you a comprehensive enterprise-class solution, designed with EqualLogic's unique peer-scaling architecture that scales both performance and capacity simultaneously. And, as your storage demands grow, you can easily scale both inside and outside of the PowerEdge M1000e blade chassis. A Dell EqualLogic PS-M4110 blade storage solution has the ability to scale outside the server chassis to greater than 96% more usable capacity and dramatically better performance, with 40% more IOPS than competitive solutions in the market.<sup>2</sup>

## Manage with ease

The EqualLogic PS-M4110 Blade Array harnesses EqualLogic's award-winning ease-of-use and all-inclusive software — all in a convenient blade form factor. Enterprise-class SAN features include EqualLogic array software (firmware), SAN Headquarters, and Host Integration Tools (HIT) for the Microsoft, VMware and Linux platforms and applications you use every day. Additionally, server administrators now have EqualLogic Blade Array set-up and deployment capabilities tightly integrated with their existing Dell Chassis Management Controller (CMC).

## Find your end-to-end solution

With a variety of systems built for capacity and performance, there is a Dell EqualLogic solution designed to suit your needs. Reduce IT complexity, lower costs, and eliminate inefficiencies by making IT and business solutions work harder for you. You can count on Dell for end-to-end solutions to maximize your performance and uptime. A proven leader in Servers, Storage and Networking, Dell Enterprise Solutions deliver innovation at any scale. Contact your Dell Sales Representative for more information.

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EqualLogic Blade Array Features	PS-M4110E	PS-M4110X	PS-M4110XV	PS-M4110XS
Storage controllers	Dual controllers with 2GB <sup>3</sup> of non-volatile memory per controller			Dual controllers with 2GB non-volatile memory per controller
Network interfaces	Management network: One 100BASE-TX per controller Interfaces ports: One 10GBASE-T with RJ45 and one 10GbE SFP+ for fibre or twin-ax copper cabling			
Hard disk drives	14 hot-pluggable 2.5" 7.2K RPM NL-SAS drives	14 hot-pluggable 2.5" 10K RPM SAS drives	14 hot-pluggable 2.5" 15K RPM SAS drives	9 hot-pluggable 2.5" 10K RPM SAS drives and 5 hot-pluggable 2.5" SSDs
Drive capacities	1TB NL-SAS or 1TB NL-SAS SED	600GB, 900GB, 1.2TB SAS, or 900GB SAS SED	300GB SAS or 300GB SAS SED	600GB or 1.2TB SAS + 400GB or 800GB SSD
System capacities	Up to 14TB	Up to 16.8TB	Up to 4.2TB	Up to 14.8TB
Technical highlights				
Host protocol	Any standards-compliant iSCSI initiators			
OS supported	Microsoft® Windows Server® including Hyper-V® VMware® ESX Server Red Hat® Enterprise Linux® (RHEL) SUSE® Enterprise Linux® (SLES) Oracle® Linux Oracle® Solaris™ IBM® AIX®		HP-UX Mac OS® X Citrix® XenServer® Novell® NetWare® For a complete list of supported OS versions including software initiators, NICs/CNAs, and HBAs, please see the <a href="#">EqualLogic Compatibility Matrix</a> .	
RAID supported	RAID 5, RAID 6, RAID 10, and RAID 50 <sup>4</sup>			RAID 6 accelerated
TCP network support	IPv4, IPv6 core support			
Expansion option	Can be combined with other EqualLogic PS Series arrays in the same SAN group online. A maximum of two (2) PS-M4110 Blade Arrays can be in a group, up to four (4) blade arrays per blade chassis. Additionally, the PS-M4110 can scale outside blade chassis to rack-mounted EqualLogic arrays for up to sixteen (16) in a SAN group.			
Reliability	Redundant hot-pluggable controllers and hot-pluggable disks Redundant network path with internal fabric wiring in M1000e chassis Redundant fans and power supplies provided by M1000e chassis			
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	Dell Chassis Management Console (CMC) integration EqualLogic Group Manager EqualLogic 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 IPSEC and SED			
Notification methods	SNMP traps, email, syslog			
Physical	Half-height, double-wide storage blade Height: 189mm (7.44 inches), Width: 102mm (4.015 inches), Depth: 515mm (20.275 inches)			
Weight	27.54 lb (12.49kg)	28.38 lb (12.87kg)	27.82 lb (12.62kg)	27.30 lb (12.38kg)
Power	Wattage: 450W; Voltage: 12VDC; Max power input: 450W; Input current: 37.5A			
Typical power	248.9W	261.0W	293.3W	230.4W
Dependencies and other components				
Blade enclosure	PowerEdge M1000e			
Blade I/O modules	Dell Networking MXL 10/40GbE blade switch, M8024-k and M8428-k switches, and 10Gb Ethernet Pass-Through-k modules with external switches			
Power supplies and fans	Supplied by Dell PowerEdge M1000e Blade Enclosure			
Dell support and optional storage service offerings	Dell ProSupport Plus for critical systems or Dell ProSupport for premium hardware and software support are recommended to provide you the right support services for your EqualLogic solution. <sup>5</sup> Contact your Dell representative today for more information.			

<sup>1</sup> Results based on June 2012 Internal Dell comparison research.

<sup>2</sup> Principled Technologies, Inc. "Data Center in a Box Performance Test: Comparing Dell and HP Blade Solutions," August 2012 report commissioned by Dell.

<sup>3</sup> GB means 1 billion bytes, TB equals 1 trillion bytes and PB equals 1 quadrillion bytes; actual capacity varies with preloaded material and operating environment and will be less.

<sup>4</sup> RAID 5 is also available for non-production data, but is generally not recommended; RAID 50 is similarly not recommended for production data on drives larger than 2TB.

<sup>5</sup> Availability and terms of Dell Services vary by region. Dell Basic Service is included standard with EqualLogic units. For more information, visit [Dell.com/ServiceDescriptions](#).

## Global services and support

Reduce IT complexity, lower costs and eliminate inefficiencies by making IT and business solutions work harder for you. You can count on Dell for end-to-end solutions to maximize your performance and uptime. A proven leader in Servers, Storage and Networking, Dell Enterprise Solutions and Services deliver innovation at any scale. And if you're looking to preserve cash or increase operational efficiency, Dell Financial Services has a wide range of options to make technology acquisition easy and affordable. Contact your Dell Sales Representative for more information.

## Simplify your storage at [Dell.com/EqualLogic](#)

