# Dell Storage PS-M4110 Blade Arrays

Dell Storage solutions continue to drive innovation by delivering all the functionality and enterprise-class features of its traditional PS Series arrays in a blade form factor.

The Dell Storage PS-M4110 Series blade arrays enable 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 Series is the industry's only fully redundant, enterprise-class storage array designed to fit inside a blade chassis.[1]

## Converge without compromise

Compute, network and store your Dell™ PowerEdge™ M-Series servers, Dell Networking MXL switches and PS Series blade arrays in a single blade chassis. With the physical convergence of 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 and can be configured in less than twenty minutes. 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 the PS Series' 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.

## Manage with ease

The PS-M4110 Series blade arrays harness the PS Series' award-winning ease-of-use and all-inclusive software — all in a convenient blade form factor. Enterprise-class SAN features include Dell Storage PS Series 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 Blade Array setup and deployment capabilities tightly integrated with their existing Dell Chassis Management Controller (CMC). In addition, Dell Storage Manager (DSM) offers common management and cross-platform replication capabilities between PS and SC Series arrays, allowing you to take advantage of new functionality while leveraging existing investments.

## Find your end-to-end solution

With a variety of systems built for capacity and performance, there is a Dell Storage PS Series 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.

The industry's only fully redundant, enterprise-class storage array designed to fit inside a blade chassis

| PS Series Blade Array Features | PS-M4110E | PS-M4110X | PS-M4110XV | PS-M4110XS |
|---|---|---|---|---|
| Storage controllers | Dual controllers with 2GB of non-volatile memory per controller | | | |
| Network interfaces | Redundant 10Gb connections available through Fabric A or B | | | |
| Hard disk drives | 14 hot-plug 2.5" 7.2K RPM NL-SAS drives | 14 hot-plug 2.5" 10K RPM SAS drives | 14 hot-plug 2.5" 15K RPM SAS drives | 9 hot-plug 2.5" 10K RPM SAS + 5 hot-plug 2.5" SSDs |
| Drive capacities including SEDs | 1TB NL-SAS or 1TB NL-SAS SED | 600GB, 900GB, 1.2TB, 1.8TB SAS or 1.2TB SAS SED | 300GB, 600GB SAS or 600GB SAS SED | 600GB or 1.2TB SAS + 400GB or 800GB SSD |
| System capacities | Up to 14TB | Up to 25.2TB | Up to 8.4TB | Up to 14.8TB |
| **Technical highlights** | | | | |
| Host protocol | Any standards-compliant iSCSI initiators | | | |
| OS supported | Microsoft Windows Server® including Hyper-V® <br> VMware ESX Server™ <br> Red Hat® Enterprise Linux® (RHEL) <br> SUSE® Enterprise Linux® (SLES) <br> Oracle® Linux | | Citrix® XenServer® <br> For a complete list of supported OS versions including software initiators, NICs/CNAs and HBAs, see the Dell Storage Compatibility Matrix on http://en.community.dell.com/dell-groups/dtcmedia/m/mediagallery/20438558. | |
| RAID supported | RAID 5, RAID 6, RAID 10, and RAID 50[2] | | | RAID 6 accelerated |
| TCP network support | IPv4, IPv6 compliant. USGv6 certified. | | | |
| Expansion option | Can be combined with other PS Series arrays in the same SAN group online. A maximum of 2 PS-M4110 blade arrays can be in a group, up to 4 blade arrays per blade chassis. Additionally, the PS-M4110 can scale outside blade chassis to rack-mounted PS Series arrays for up to 16 in a SAN group. Additionally, Dell Storage Manager (DSM) offers common management and cross-platform replication capabilities between SC Series and PS Series arrays, providing PS Series customers the flexibility to add SC Series arrays to their environment, if and when they choose. | | | |
| Reliability | Redundant hot-plug controllers and hot-plug 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; DSM for day-to-day tasks across SC Series and PS Series arrays from a single management interface; PS Series Group Manager; PS Series 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 <br> Height: 189 mm (7.44 inches), Width: 102 mm (4.015 inches), Depth: 515 mm (20.275 inches) | | | |
| Weight | 27.54 lb (12.49 kg) | 28.38 lb (12.87 kg) | 27.82 lb (12.62 kg) | 27.30 lb (12.38 kg) |
| Power | Wattage: 450W; Voltage: 12VDC; Max power input: 450W; Input current: 37.5A | | | |
| Typical power | 248.9W | 261.0W | 293.3W | 230.4W |
| Heat Dissipation | 700W (maximum total), +5V up to 155W; +12V up to 624W; +5Vsb up to 10W | | | |
| Frequency | Frequency: 50/60 Hz | | | |
| **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 PS Series solution.[3] Contact your Dell representative today for more information. | | | |

[1] Results based on July 2015 Internal Dell comparison research.

[2] 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.

[3] Availability and terms of Dell Services vary by region. Dell Basic Service is included standard with PS Series units. For more information, visit Dell.com/ServiceDescriptions.

## End-to-end technology solutions

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/PS