

# DELL POWEREDGE HALF-HEIGHT M610 AND FULL-HEIGHT M710 BLADE SERVERS



**The Dell™ PowerEdge™ M-Series blade servers help cut operating expenses through energy efficiency, product flexibility, and efficient use of data center space. When combined with Dell's world-class storage, management, and support offerings, the result is a total enterprise solution that can help you simplify and save on IT expenses.**



## **STRONG IT FOUNDATION**

To build the most efficient data center solutions, Dell sought input from IT professionals. You asked for reliability, scalability, energy efficiency, and a lower total cost of ownership (TCO). Our next-generation M610 and M710 blade servers deliver, becoming the cornerstone of a high-performance data center capable of keeping pace with your changing business demands.

## **PURPOSEFUL DESIGN**

Designed with your needs in mind, these M-Series blades use the Intel® Xeon® 5500 and 5600 series processors. These processor series adapt to your software in real time, processing more tasks simultaneously. Using Intel Turbo Boost Technology, the M-Series blades can increase performance during peak usage periods. When demand decreases, Intel Intelligent Power Technology helps reduce operating costs and energy usage by proactively putting your server into lower power states.

To enhance virtualization and database performance, the M610 is designed with 50% more memory capacity than its predecessor. This increased memory capacity saves money by enabling you to use smaller, less-expensive DIMMs to meet your computing needs.

Today's data center demands high availability and redundancy. The new full-height PowerEdge M710 delivers full-fabric redundancy (on all three fabrics) for exceptional I/O capacity. Dell's innovative expansion to a full-height form factor enables a significant increase in the total memory capacity of the M710: 18 DIMM slots and up to 192GB of total RAM. The M710 Blade Server allows quick virtualization with software from leading industry vendors using an SD card or internal USB for embedded hypervisors.

## **SCALABILITY FOR GROWTH**

As your application needs increase, M-Series blades allow you to scale up to 128 cores and 1536GB of memory per 10U chassis, with opportunities for even greater capacities in the future.

To keep pace with changing requirements, you can effectively scale I/O application bandwidth with end-to-end 10Gbe or FC8 solutions. Virtualize I/O within your M-Series chassis using Cisco's Virtual Blade Switch technology, and manage up to nine Cisco Ethernet switches as a single switch. Additionally, use NPIV and Port Aggregator modes on a variety of switches to virtualize Ethernet or Fibre Channel ports for integration into heterogeneous fabrics. By harnessing Dell's FlexIO modular switches, you can scale your I/O needs cost effectively, adding ports and functionality through switch modules, including 10Gb uplinks and stacking ports instead of needing to buy complete new switches.

## **COMPLETE STORAGE SOLUTIONS**

Easily change your storage infrastructure to meet fluctuating business needs using Dell™ storage solutions. With the virtualized architecture of the EqualLogic™ PS Series, you can help ensure maximum flexibility while maintaining your consolidation strategy. EqualLogic lets you deploy and redeploy physical storage arrays and shift workloads (data volumes) between pools or tiers of storage without application downtime. With the addition of a PS6000, your administrators can move database applications from PS5000 or previous arrays to high-performance SSD systems online or shift applications requiring the extra bandwidth of the PS6000 Series.

Tuned to the needs of today's rapidly changing businesses, Dell provides a range of solutions for building on your investment to avoid costly "rip and replace" scenarios.

## **SMART INVESTMENT**

Global economic challenges are increasing the pressure on corporate revenues. CIOs are evaluating IT budgets seeking to increase productivity and lower costs. The M-Series is a smart solution that helps protect your infrastructure investments, simplify your IT environment, and drive real and sustainable savings in power efficiency and productivity. An M-Series investment can free up time and money previously needed for maintenance so you can use it for true innovation.

The Dell M-Series Blades offer the lowest TCO compared to HP and IBM blade solutions.<sup>1</sup>

- **A future-ready, passive midplane capable of supporting multiple generations of blade servers and a full array of upcoming I/O technologies**
- **FlexIO technology to eliminate "rip and replace" blade switch upgrades; modularity is built into the switches**
- **FlexAddress to simplify efforts and interactions between server and networking teams by providing slot-assigned, persistent WWN/MAC/iSCSI for maintenance, without additional management tools or proprietary hardware**
- **Energy Smart Technologies, including low-flow fans and highly efficient power supplies for outstanding energy efficiency**

## **SIMPLIFIED SYSTEMS MANAGEMENT**

The next generation Dell OpenManage™ suite offers enhanced operations and standards-based commands designed to integrate with existing systems for effective control.

## **LIFECYCLE CONTROLLER**

Lifecycle Controller is the engine for advanced systems management integrated on the server. Lifecycle Controller simplifies administrator tasks to perform a complete set of provisioning functions such as system deployment, system updates, hardware configuration and diagnostics from a single intuitive interface called Unified Server Configurator (USC) in a pre-OS environment. This eliminates the need to use and maintain multiple pieces of disparate CD/DVD media.

## **DELL MANAGEMENT CONSOLE (DMC)**

The new Dell Management Console, powered by Altiris from Symantec, delivers a single view and a common data source into the entire infrastructure. Dell Management Console is built on the Symantec™ Management Platform (formerly Altiris™ Notification Server), an easily extensible, modular foundation that can provide basic hardware management or more advanced functions such as asset and security management. Dell Management Console helps reduce or eliminate manual processes so less time and money is spent keeping the lights on and more time can be spent on strategic uses of technology.

## **ABOUT DELL GLOBAL SERVICES**

Dell Services can help reduce IT complexity, lower costs, and eliminate inefficiencies by making IT and business solutions work harder for you. The Dell Services team takes a holistic view of your needs and designs solutions for your environment and business objectives while leveraging proven delivery methods, local talent, and in-depth domain knowledge for the lowest TCO.

FEATURES	M610	M710
<b>Processors</b>	Latest quad-core or six-Core Intel® Xeon® 5500 and 5600 series processors 60W, 80W, and 95W TDP options	Latest quad-core or six-Core Intel® Xeon® 5500 and 5600 series processors 75W, 55W TDP options
<b>Memory</b>	12 DIMM slots 1GB/2GB/4GB/8GB/16GB ECC DDR3 Support for up to 192GB using 12 x 16GB DIMMs	18 DIMM slots 1GB/2GB/4GB/8GB/16GB ECC DDR3 Support for up to 192GB using 12 x 16GB DIMMs
<b>Chipset</b>	Intel® 5520	
<b>Embedded Hypervisor via SD card (optional)</b>	Citrix® XenServer™ Microsoft® Windows Server® 2008, with Hyper-V™ VMware® vSphere 4/ESXi 4	
<b>Operating Systems</b>	Microsoft® Windows® Essential Business Server 2008 Microsoft® Windows Server® 2008 SP2, x86/x64 (x64 includes Hyper-V™) Microsoft® Windows Server® 2008 R2, x64 (includes Hyper-V™ v2) Microsoft® Windows® HPC Server 2008 Novell® SUSE® Linux® Enterprise Server Red Hat® Enterprise Linux® Sun® Solaris™  For more information on the specific versions and additions, visit <a href="http://www.dell.com/OSsupport">www.dell.com/OSsupport</a> .	
<b>I/O Mezzanine Card Options</b>	<p><b>1Gb &amp; 10Gb Ethernet:</b> Dual-Port Broadcom® Gb Ethernet w/ TOE (BCM-5709S) Quad-Port Intel® Gb Ethernet (BCM-82576) Quad-Port Broadcom® Gb Ethernet (BCM-5709S) Dual-Port Broadcom® 10Gb Ethernet (BCM-57711)</p> <p><b>10Gb Enhanced Ethernet &amp; Converged Network Adapters (CEE/DCB):</b> Dual Port Intel® 10GB Enhanced Ethernet Server Adapter X520-DA2 (FcoE Ready for Future Enablement) Dual-Port QLogic® Converged Network Adapter (QME8142) - Supports CEE/DCB 10GbE + FCoE</p> <p><b>Fibre Channel:</b> Dual-Port QLogic® FC8 Fibre Channel Host Bus Adapter (HBA) (QME2572) Dual-Port Emulex® FC8 Fibre Channel Host Bus Adapter (HBA) (LPe1205-M)</p> <p><b>InfiniBand:</b> Dual-Port Mellanox® ConnectX Quad Data Rate (QDR) InfiniBand Dual-Port Mellanox® ConnectX Dual Data Rate (DDR) InfiniBand</p>	
<b>Drive Bays</b>	<b>M610</b> Two 2.5" SAS/Solid State hot-swappable drives	<b>M710</b> Four 2.5" SAS/Solid State hot-swappable drives
<b>Storage</b>	<p><b>Internal Hot-Swappable Drives</b> 2.5" SAS (10K RPM): 36GB, 73GB, 146GB, 300GB 2.5" SAS (15K RPM): 36GB, 73GB 146GB Solid State Drives (SSD): 25GB, 50GB, 100GB, 150GB Maximum Internal Storage: Up to 1.2TB via 4 x 300GB SAS Hard Drives</p> <p><b>External Storage:</b> Disk Storage Options Dell™ EqualLogic™ PS6000 Series PowerVault™ NX1950 Unified Storage Solution PowerVault™ MD3000i</p> <p><b>Dell/EMC products:</b> Dell/EMC fibre channel and/or iSCSI external storage, including Dell/EMC CX300, CX3-10c, CX3-20, CX3-40, and CX3-80; CX4-120, CX4-240, CX4-480, and CX4-960</p>	
<b>RAID Controller Options</b>	<p><b>Internal:</b> PERC H200 Modular (6Gb/s) PERC H700 Modular (6Gb/s) with 512MB battery-backed cache SAS 6/iR Modular CERC 6/i Modular PERC 6/i Modular with 256MB battery-backed cache</p>	
<b>Communication</b>	<b>Optional add-in NICs:</b> Dual Port 10GB Enhanced Intel Ethernet Server Adapter X520-DA2 (FcoE Ready for Future Enablement)	

FEATURES	M610	M710
<b>Power</b>	Supplied by Dell's M1000e Blade Chassis	
<b>Graphics/Video</b>	Matrox® G200 with 8MB of cache	
<b>Chassis</b>	The PowerEdge™ M610 and M710 blade servers only fit in the M1000e blade enclosure. A total of 8 x M710s or 16 x M610s can fit into every M1000e enclosure. Full-height and half-height blades can be mixed in M1000e enclosures with no limitations.	
	M610 physical dimensions: Height: 18.9 cm (7.4 in) Width: 5cm (2") Depth: 48.6 cm (19.2 in) Weight: 11.1kg (24.5lb.) (Maximum Configuration): 5.2-6.4 kg (11.5-14.0 lb)  Half height blades fit inside the M1000e Blade Chassis. Maximum of 16 per blade chassis.	M710 physical dimensions: Height: 38.5cm (15.2") Width: 5cm (2") Depth: 48.6cm (19.2") Weight: 11.1kg (24.5lb.) — Maximum configuration  Full height blades fit inside the M1000e Blade Chassis. Maximum of 8 per blade chassis.
<b>Management</b>	<b>Dell OpenManage™ software tools</b> Dell Management Console Integration with 3rd party management solutions via Dell's Certified Partner Program  <b>Altiris™ Deployment Solution for Dell Blade Servers</b> Designed to help reduce deployment time from hours to minutes  <b>Integrated Dell Remote Access Controller (iDRAC) with:</b> Out-of-Band alerting, status, inventory, and troubleshooting via Secure Web GUI / CLI (telnet/SSH) Console Redirection (Virtual KVM (vKVM) and Remote Virtual Media (vMedia) vMedia (virtual media) Map media from remote workstation/network to the blade Console Redirection - vKVM (virtual KVM) out of band remote console, supports Java or ActiveX plug-ins IPMI 2.0 support	
<b>Environmental</b>	Operating Temperature: 10° C to 35° C (50° F to 95° F) <sup>6</sup> Storage Temperature: -40° C to 65° C (-40° F to 149° F) Maximum humidity gradient: 10% per hour, operational and non-operational conditions. Storage Relative Humidity: 5% to 95% non-condensing (twmax=38C) Operating Vibration: 0.26Grms at 10Hz to 350Hz for 15 minutes Storage Vibration: 1.54Grms Random Vibration at 10Hz to 250Hz for 15 minutes Operating Shock: 1 shock pulse of 41G for up to 2ms Storage Shock: 6 shock pulses of 71G for up to 2ms Operating Altitude: -16 to 3,048m (-50 ft to 10,000 ft) Storage Altitude: -16m to 10,600m (-50 ft to 35,000 ft)  <a href="http://www.dell.com/content/topics/global.aspx/corp/environment/en/index?c=us&amp;l=en&amp;s=corp">http://www.dell.com/content/topics/global.aspx/corp/environment/en/index?c=us&amp;l=en&amp;s=corp</a>	
<b>Regulatory</b>	FCC (U.S. only) Class A ICES (Canada) Class A CE Mark (EN 55022 Class A, EN55024, EN61000-3-2, EN61000-3-3) VCCI (Japan) Class A BSMI (Taiwan) Class A C-Tick (Australia/New Zealand) Class A SABS (South Africa) Class A CCC (China) Class A MIC (Korea) Class A UL 60950-1 CAN/CSA C22.2 No. 60950-1 EN 60950-1 IEC 60950-1  Dell Regulatory Compliance Home Page Dell Regulatory Datasheet Home Page	

<sup>1</sup> Based on Principled Technologies report "Total cost of ownership (TCO) of Dell, HP, and IBM blade solutions" commissioned by Dell in September 2008. TCO includes hardware, support, management software, IO virtualization, power, cooling, network ports, and data center space.

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