PowerEdge M1000e Blade Chassis

The Dell™ PowerEdge™ M1000e Modular Blade Enclosure is the rock-solid foundation for Dell's blade server architecture, providing an extremely reliable, flexible and efficient platform for building any IT infrastructure.

The Dell PowerEdge M1000e Modular Blade Enclosure is a breakthrough in enterprise server architecture. Built from the ground up to combat data center sprawl and IT complexity, the M1000e delivers one of the most energy efficient, flexible, and manageable blade server products on the market.

Leading Energy Efficiency

The M1000e enclosure takes advantage of its world-class design by coupling optimized airflow with ultra-efficient power supplies and fans to effectively cool the chassis within a lower power envelope.

Effortless Scalability

Only Dell provides complete, scale-on-demand switch designs. With additional I/O slots and switch options, you have the flexibility you need to meet ever-increasing demands for I/O consumption. Plus, Dell's FlexIO modular switch technology lets you easily scale to provide additional uplink and stacking functionality—no need to waste your current investment with a "rip and replace" upgrade.

Easy-to-Use, Powerful Management Tools

The M1000e helps reduce the cost and complexity of managing computing resources so you can focus on growing your business or managing your organization with features such as:

- Centralized Chassis Management Controller (CMC) modules for redundant, secure access paths for IT administrators to manage multiple enclosures and blades from a single interface.
- Dynamic and granular power management so you have the capability to set power thresholds to help ensure your blades operate within your specific power envelope.
- Real-time reporting for enclosure and blade power consumption, as well as the ability to prioritize blade slots for power, providing you with optimal control over power resources.

FlexAddress Technology: The Simple, Low-Cost Way to Limit Downtime

Dell's patent-pending FlexAddress™ technology allows any M-Series blade enclosure to assign the World Wide Name (WWN) or Media Access Control (MAC) address of Fibre Channel, Ethernet and iSCSI controllers to an

M1000e blade slot instead of directly to the blade. By removing the network and storage identity from the server hardware, customers are now able to upgrade and replace components or the entire blade server without being forced to change the identity on the network or rezoning switches. Unlike other solutions, which often require separate management interfaces and proprietary hardware, FlexAddress will work with any network and is implemented directly from the integrated Chassis Management Controller by simply selecting the chassis slots and fabrics which you want to enable. FlexAddress delivers persistent network and storage identities, equipping your data center to handle predictable or even unplanned changes— add, upgrade, or remove servers without affecting your networks.

Dell 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.

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Feature	Technical Specification
Chassis Enclosure	Form Factor: 10U modular enclosure holds up to sixteen half-height blade servers 44.0cm (17.3") H x 44.7cm (17.6") W x 75.4cm (29.7") D Weight: • Empty Chassis only—98lbs • Chassis w/ all rear modules (IOMs, PSUs, CMCs, KVM)—176lbs • Max Fully loaded w/ blades and rear modules—394lbs
Power Supplies	**3 (non-redundant) or 6 (redundant) 2360 watt hot-plug power supplies:** • Based on Dell Energy Smart Technologies, the M1000e power supplies deliver greater levels of efficiency (>91%), even at low levels of utilization • Redundant power supplies support 3+3 (AC redundancy), 3+1 (power supply redundancy), or 3+0 (non-redundant) modes • System supports new Dynamic Power Supply Engagement functionality, which (if enabled) puts lightly loaded power supplies into standby mode, driving up the utilization and thus the efficiency on the active supplies • Power supplies require 200+ volt AC input; Dell offers a wide range of Power Distribution options for the M1000e with 20A, 30A, 60A single-phase, or 30A three-phase options
Cooling Fans	M1000e Chassis comes standard with 9 hot-pluggable, redundant fan modules • Based on Dell Energy Smart Technologies, M1000e fans are a breakthrough in power and cooling efficiency • The fans deliver low power consumption, but also use next generation fan technologies to ensure the lowest possible amount of fresh air is consumed to cool the enclosure
Input Device	Front Control Panel with interactive Graphical LCD • Supports initial configuration wizard • Local server blade, enclosure, and module information and troubleshooting Two USB Keyboard/Mouse connections and one Video connection (requires the optional Avocent® iKVM switch to enable these ports) for local front "crash cart" console connections that can be switched between blades
Enclosure I/O Modules	Up to six total I/O modules for three fully redundant fabrics, featuring Ethernet FlexIO technology providing on-demand stacking and uplink scalability. Dell's FlexIO technology delivers a level of I/O flexibility, bandwidth, investment protection, and capabilities unrivaled in the blade server market. **FlexIO Technologies include:** • Completely passive, highly available midplane that can deliver greater than 5Tbps of total I/O bandwidth • Support for up to two ports of up to 40Gbps from each I/O Mezzanine card on the blade server **PowerConnect™ M6220 Gigabit Ethernet Switch** Includes 4 x fixed copper 10/100/1000Mb Ethernet uplinks standard plus 2 of the following optional modules: • 48Gb (full duplex) Stacking module • 2 x 10Gb Optical (XFP-SR/LR) uplinks • 2 x 10Gb copper CX4 uplinks PowerConnect™ M6348 Gigabit Ethernet Blade Switch Includes 16 external fixed 10/100/1000Mb Ethernet RJ-45 ports to support 32 internal server GbE connections supplied by quad-port Gigabit Ethernet mezzanine cards (Broadcom® 5709 or Intel® ET 82572) plus up to 4 10Gb uplink ports: 2x 10Gb Optical SFP+ (SR/LR) and/or SFP+ DAC 2x 10Gb Copper CX4 or 32Gb stacking for M6348 **PowerConnect™ M8024 10Gb Ethernet Switch** Includes up to 8 external LAN ports using 2 flexible modular external port options for greater diverse connectivity: Up to two 4x SFP+ modules (8 ports) Up to two 2x 10GbaseT ports per module (4 ports) Up to two 3 CX4 modules (6 ports) **Dell™ Gigabit Ethernet Pass-Through Module** Supports 16 x 10/100/1000Mb copper RJ45 connections **Dell™ 10Gb Ethernet Pass-Through Module** Supports 16 x 10Gb copper RJ45 connections **Cisco® Catalyst® Blade Switch M 3032** Includes 4 x fixed copper 10/100/1000Mb Ethernet uplinks standard plus 2 optional module bays, supporting 2 x 1Gb copper or optical SFPs each. **Cisco® Catalyst® Blade Switch M 3130G** Includes 4 x fixed copper 10/100/1000Mb Ethernet uplinks, 64Gb (full duplex) StackWise® Plus stacking ports plus 2 optional module bays, each can support either 2 x 1Gb copper or optical SFPs **Cisco® Catalyst® Blade Switch M 3130X** Includes 4 x fixed copper 10/100/1000Mb Ethernet uplinks, 64Gb full duplex StackWise® Plus stacking ports, and support for 2 x X2 modules for up to a total of two 10Gb CX4 or SR/LRM uplinks **Brocade® M5424 8Gb Fibre Channel Switch** Includes 8 external SAN ports **Dell™ 4Gb Fibre Channel Pass-Through Module** 16 x FC 1/2/4Gb SFP ports **Mellanox® M2401G Dual Data Rate (DDR) InfiniBand Switch** 8 copper or Optical external 4x Double Data Rate (DDR – 20Gb) Infiniband ports **Mellanox® M3601Q Quad Data Rate (QDR) InfiniBand Switch** 16 copper or Optical external 4x Quad Data Rate (QDR–40Gb) Infiniband ports **Brocade® M5424-N Fibre Channel Switch**
Management	**1 (standard) or optional 2nd (redundant) Chassis Management Controller(s) (CMC) which provide:** • Single secure interface for inventory, configuration, monitoring, and alerting for the chassis and all components • Real-Time Power/Thermal Monitoring and Management • Real-Time System AC Power Consumption with resettable peak and minimum values • System-level power limiting and slot-based power prioritization Manages Dynamic Power Engagement functionality which can help to lower overall system power consumption by ensuring power supplies run at their optimal efficiency points Manages fan speed control using Dell's enhanced efficiency technologies to ensure fans are delivering optimal cooling while minimizing power consumption and airflow Secure Web (SSL) and Command Line (Telnet/SSH) interfaces Supports multiple levels of user roles and permissions, including integration into Microsoft® Active Directory® Services 2 x 10/100/1000Mb Ethernet ports + 1 serial port Provides single point of connection from management network to iDRAC on each of the blades and the management interfaces on the integrated I/O Modules 2nd Ethernet port supports daisy chaining of CMCs for improved cable management **Optional Integrated Avocent® keyboard, video and mouse (iKVM) switch** • Enables USB keyboard/mouse and video port on front control panel • 2 x USB, video, and Analog Console Interface (ACI) ports • ACI port allows connectivity and seamless tiering via cat5 cables to Dell or Avocent® KVM switches with Analog Rack Interface (ARI) ports. **Dell™ OpenManage™ Systems Management** • Altiris™ Deployment Solution for Dell Blade Servers—reduce deployment time from hours to seconds • Dell Management Console—manage multiple Dell servers from a single console • OpenManage™ Server Administrator—monitoring agents and 1:1 management utilities • Integration with 3rd party management solutions through Dell's Certified Partner Program • Remote Management
External Storage Options	Dell EqualLogic™ PS Series, Dell/EMC AX Series, Dell/EMC CX Series, Dell/EMC NS Series, Dell PowerVault™ MD Series, Dell PowerVault NX Series
Rack Support	RapidRails™ static rails for 4-post square hole racks; VersaRails static rails for 4-post square or unthreaded round hole racks

For more information about the M1000e Blade Chassis, see the PowerEdge M1000e Technical Guide.

Discover more at Dell.com/Blades