

Dell EMC PowerEdge MX5016s and MX5000s



The MX5016s direct-attached storage sled delivers flexible performance and capacity options within the PowerEdge MX architecture.



The MX5000s supports a x4 SAS connection to each of the eight front facing sled bays in the MX5000s chassis.

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Product overview

The Dell EMC PowerEdge MX offers a scalable and flexible architecture so you can adapt to changing requirements. Tailor your ideal storage to compute configuration ratio within the MX7000 chassis with the Dell EMC PowerEdge MX5016s SAS storage sled. The MX5000s SAS IOM is used to provide Fabric C SAS connectivity between compute sleds and internal storage sleds.

MX5016s product overview

The full-height, single-width MX5016s offers easy front access to quickly swap and HDDs or SSDs.

- Scale-out to 7 MX5016s sleds with up to 112 drives per chassis (plus up to an additional 6 internal server drives and two M.2 boot devices).
- Support diverse, data-heavy workloads such as SDS (vSAN), SQL, ERP and dense virtualization.
- Map individual drives to two-socket MX740c and four-socket MX840c servers.
- Configure your direct-attached SAS environment with PERC and HBA storage controller options.
- Help deliver high availability for your critical workloads with dual port 12Gb/s SAS, hot-pluggable drives and hot serviceable expanders.
- Assign the appropriate ratios of compute, storage and networking, then adapt as workloads change.

MX5000s product overview

The SAS IOM consists of four major functional blocks:

- Fabric switch (SAS expander subsystem)
- SAS I/O controller (IOC)
- Fabric management processor
- IOM common circuits

The IOM facilitates SAS Storage subsystem, drive assignments, reporting health status and event logs for the associated SAS devices. You can manage SAS fabric by using the OpenManage Enterprise-Modular user interface to view inventory, storage event logs and manage drive or enclosure assignments. For more information about managing the SAS fabric using OpenManage Enterprise-Modular, see the OpenManage Enterprise-Modular User's Guide available at Dell.com/cmcmanuals.

 **NOTE: For more information about SAS IOM LED indicators, see [PowerEdge MX5000s System diagnostics and indicator codes](#)**

New technologies

The list below shows the new technologies for the PowerEdge MX5016s and MX5000s :

MX5016s

- Sixteen side loading, hot pluggable 2.5" drives in a front translating sled
- Hot-serviceable Dual Expanders providing dual SAS paths to all SSD and HDDs
- Dual Power delivery for redundancy
- Dual x4 SAS links to the PowerEdge MX7000 infrastructure
- 12Gb/s SAS support

MX5000s

- 12Gb/s supported (backwards compatible to 6Gb/s and 3Gb/s)
- Eight x4 internal SAS connections to each of the chassis bays for connection to either compute sleds or storage sleds
- Management processor for SAS topology
- IOM common circuits for interface to chassis Management Module

Product features

The PowerEdge MX5016s and MX5000s offer the following features:

Table 1. MX5016s Product features

Feature	Specifications
Hard drives	supports up to sixteen 2.5-inch, hot-swappable SAS hard drives, SSDs
Storage expander	supports PowerEdge RAID Controller(PERC) H745PMX and HBA 330MMZ.

Table 2. MX5000s Product features

Feature	Specifications
SAS version	SAS 3.0 at 12Gb/s
SAS Link Width	x4
Internal SAS Links	8
External SAS Links	6 each x4 external mini-SAS HD connectors (available after initial release)

Chassis view and features

Module overview MX5016s

Front view of the PowerEdge MX5016s module

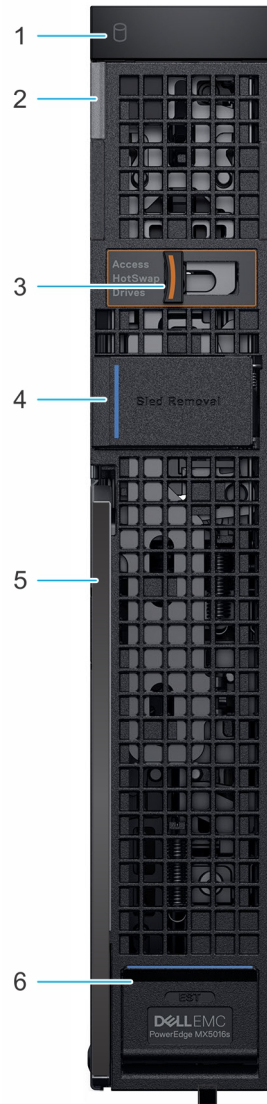


Figure 1. Front view of the PowerEdge 5016s module

- | | |
|-------------------------------|--|
| 1. Drive status indicator | 2. System health and system ID indicator |
| 3. Drive drawer release latch | 4. Sled removal hatch |
| 5. Sled release lever | 6. Information tag panel |

Inside the sled

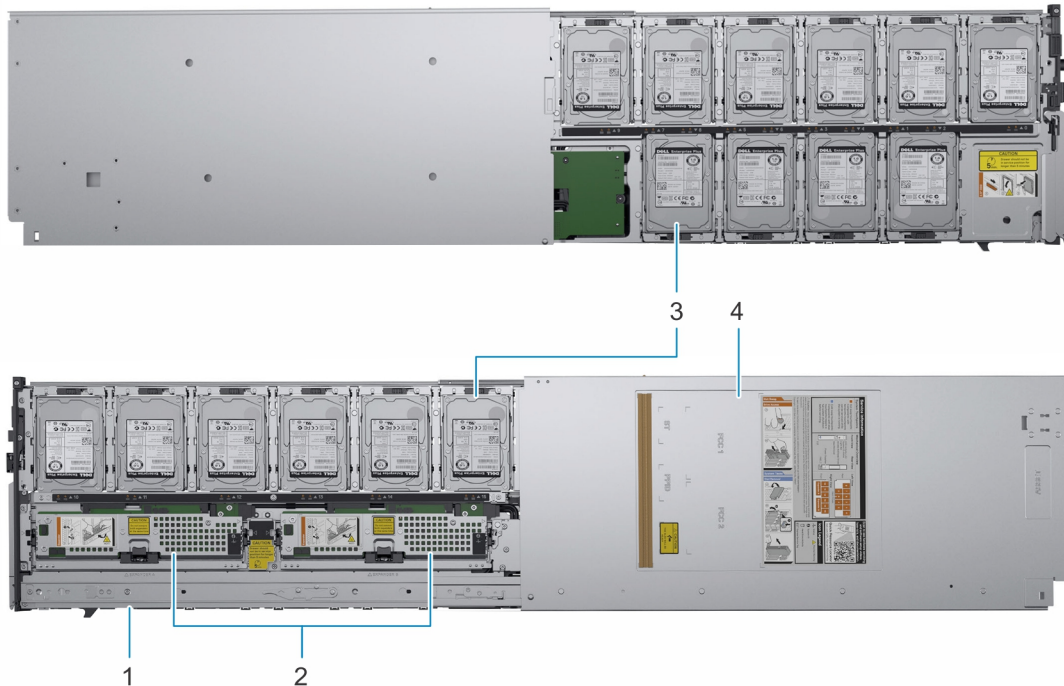


Figure 2. Inside the MX5016s sled

1. Slide rail
2. Expander modules
3. Drives
4. Sled cover

MX5016s Configuration Options

In the PowerEdge MX7000 enclosure, drives inside a Storage Sled map to Compute Sleds. The PowerEdge MX7000 enclosure supports multiple Storage Sled to compute sled-mapping configurations.

Each slot in the MX7000 chassis supports a compute sled or a storage sled, and there are no fixed mappings for the sleds. Using the OpenManage Enterprise-Modular web interface the disks in a storage sled can be mapped to a compute sled with the following options:

- Map an entire storage sled (Enclosure- Assigned Mode) to a compute sled
- Map a specified group of disks (Drive- Assigned mode)

Mapping requirements and restrictions:


- Each compute or storage sled has two x4 SAS paths, with one path connecting to each of the two Fabric-C IOMs
- The SAS storage solution requires two MX5000s IOMs installed in Fabric-C to provide redundant paths
- IOM C1 connects to Expander 1 in each of the installed Storage Sleds
- IOM C2 connects to Expander 2 in each of the installed Storage Sleds
- Each Expander within a storage sled connects to all 16 SAS drives, providing redundant paths
- Any compute sled intended to connect to the SAS storage must have a Fab-C mezzanine card installed (either the HBA330 MMZ or the PERC MX745P)
- Compute sleds with the MX745P controller option may also choose to use the internal drives on the compute sled within the same virtual drive as drives within a mapped storage sled
- In Drive-Assigned mode, disks are visible to only a single compute sled, and can be assigned in any order or quantity

- In Enclosure-Assigned mode, all 16 drive slots are mapped together to the selected compute sled. In this mode, more than one compute sled can be mapped to the storage sled, which means the disks are visible to more than one compute node simultaneously.

 **NOTE: This shared mode requires the use of a cluster-aware operating system, and is not supported with the PERC MX745P.**

Setting up your system

- For initial setup when the enclosure is powered off, perform the following steps:
 - a. Install the Compute Sleds, Storage Sleds, and SAS IOM modules.
 - b. Power on the enclosure.

 **NOTE: The system is powered on and initialized in the following sequence: SAS IOMs, Storage Sleds, and then the Compute Sleds.**
 - c. Log in to the OpenManage Enterprise-Modular user interface to assign the Storage Sleds to the compute sled slots. For more information, see the *OpenManage Enterprise-Modular User's Guide* at Dell.com/openmanagemanuals > Chassis Management Controllers.
- For initial setup during System Maintenance, when the enclosure is already powered on, perform the following steps:
 - a. Power off the compute sleds to which the Storage Sled is to be assigned.
 - b. Install the Storage Sled.
 - c. Using the systems management software, assign Storage Sled to the Compute Sleds. For more information, see the *OpenManage Enterprise-Modular User's Guide* at Dell.com/openmanagemanuals > Chassis Management Controllers.

Storage sled mapping configurations

The expander modules inside a Storage Sled map the drives in the Storage Sled to Compute Sleds in the enclosure. The PowerEdge MX7000 enclosure supports multiple Storage Sled to compute sled mapping configurations.

 **NOTE: Storage Sled configurations map Storage Sled drive bays to Compute Sleds in the enclosure.**

Drive assignment

Each slot in the PowerEdge MX7000 chassis supports a Compute Sled or a Storage Sled, and there are no fixed mappings for the sleds. Using the OpenManage Enterprise-Modular web interface the disks in a storage sled can be mapped to a Compute Sled that gives you the following options:

- Enclosure-Assigned mode
- Drive-Assigned mode

Enclosure-Assigned mode:

- All the drives in the PowerEdge MX5016s are assigned to the selected compute sleds.
- The Fab-C Mezz controller can be either PERC H745P MX, or HBA330 MMZ. Enclosure assignment mode is required if the PowerEdge MX5016s is to be shared between multiple compute sleds (that is clustered). Only HBA330 MMZ controller supports shared assignments.

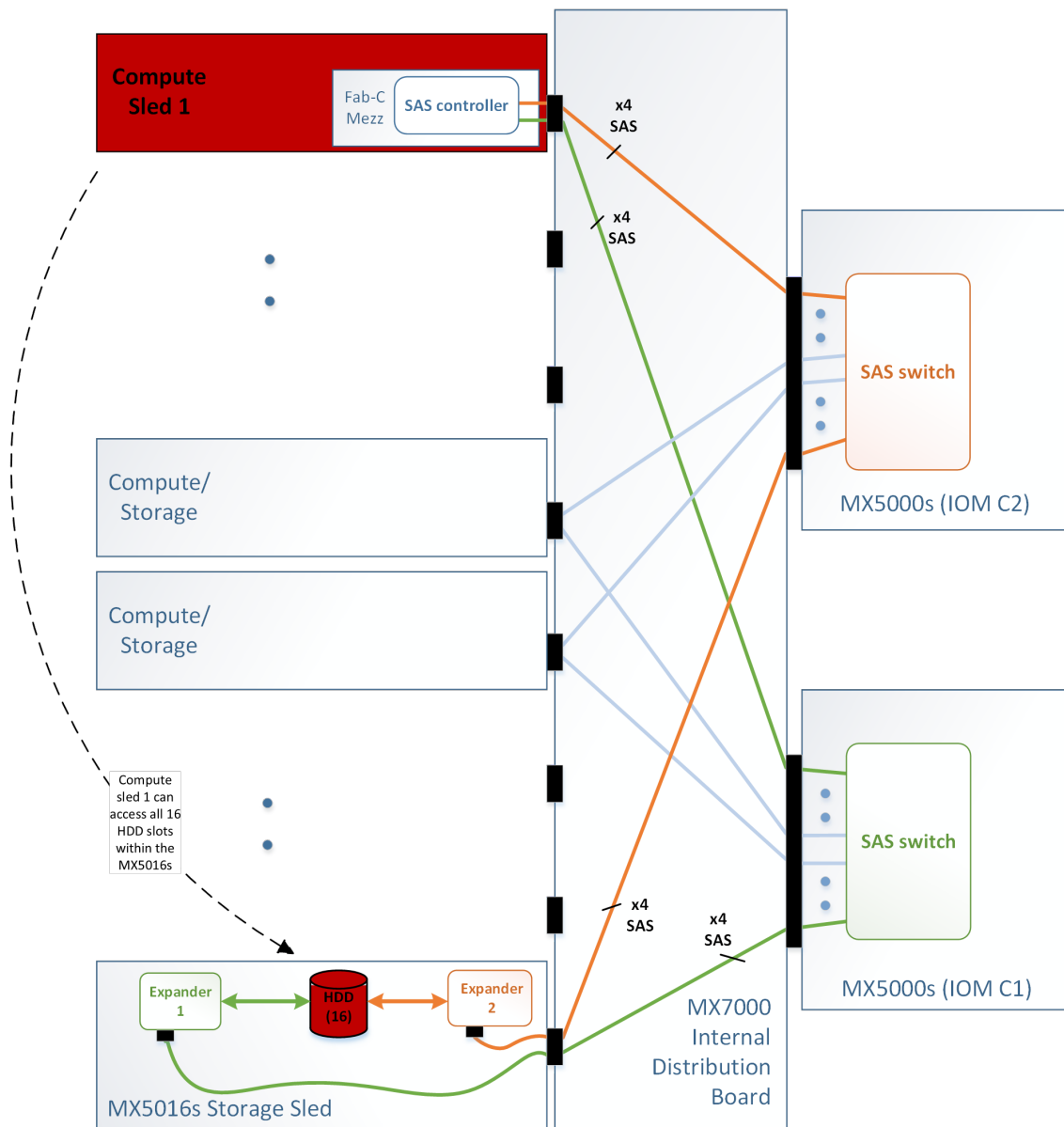


Figure 3. Enclosure-Assigned mode

Drive-Assigned mode:

- A specified group of disks is assigned.
- Drive-Assigned mode assigns the individual drive from the PowerEdge MX5016s to another compute sleds (but cannot be assigned to more than one sled simultaneously). The Fab-C Mezz controller on the mapped compute sled can be either a PERC H745P MX, or HBA330 MMZ.

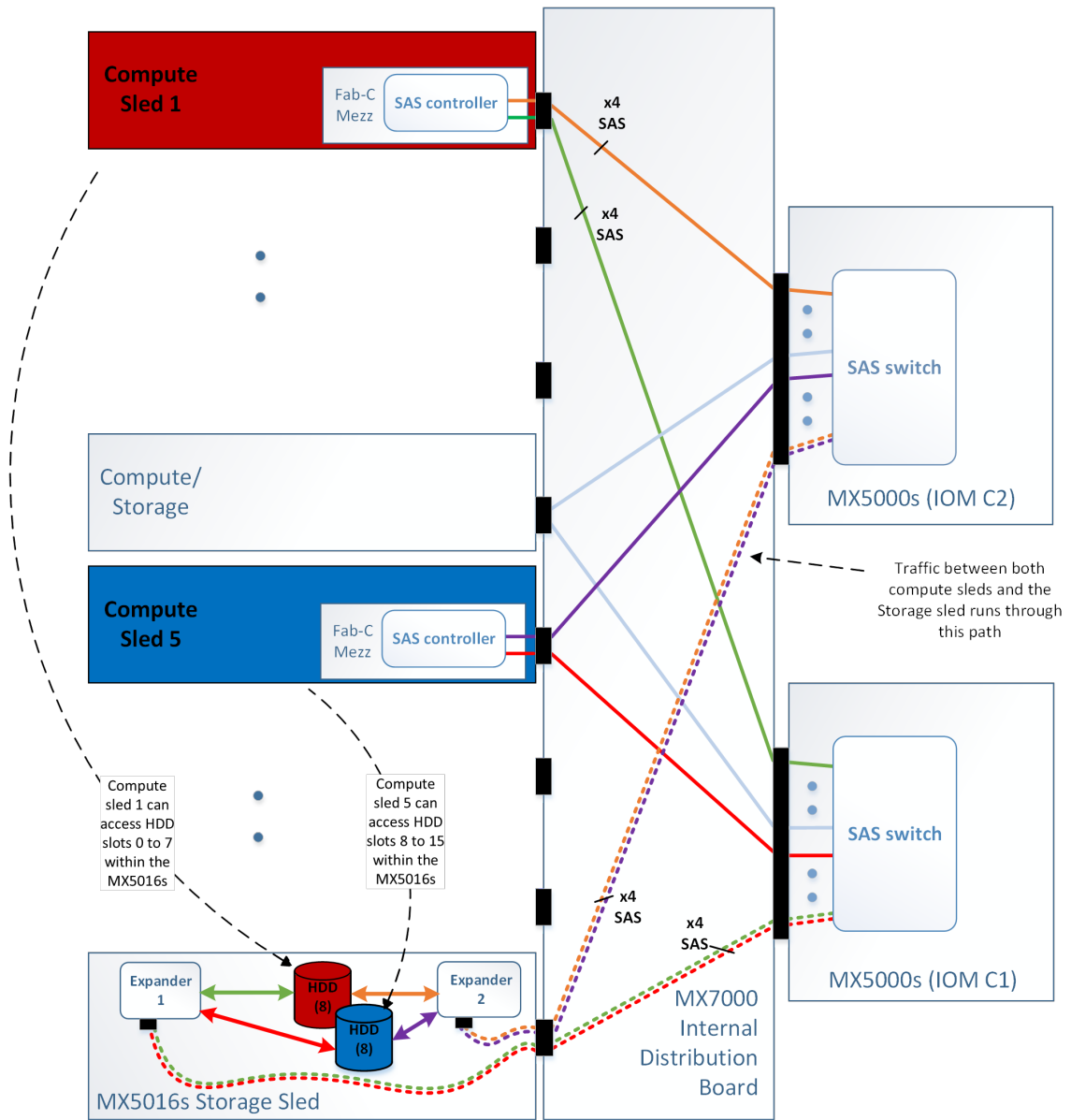


Figure 4. Drive-Assigned mode

Drives

MX5016s supports sixteen hot-swappable 2.5-inch SAS drives. Drives numbered 0 through 9 are located on the left side of the enclosure, and 10 through 15 are located on the right side of the enclosure.

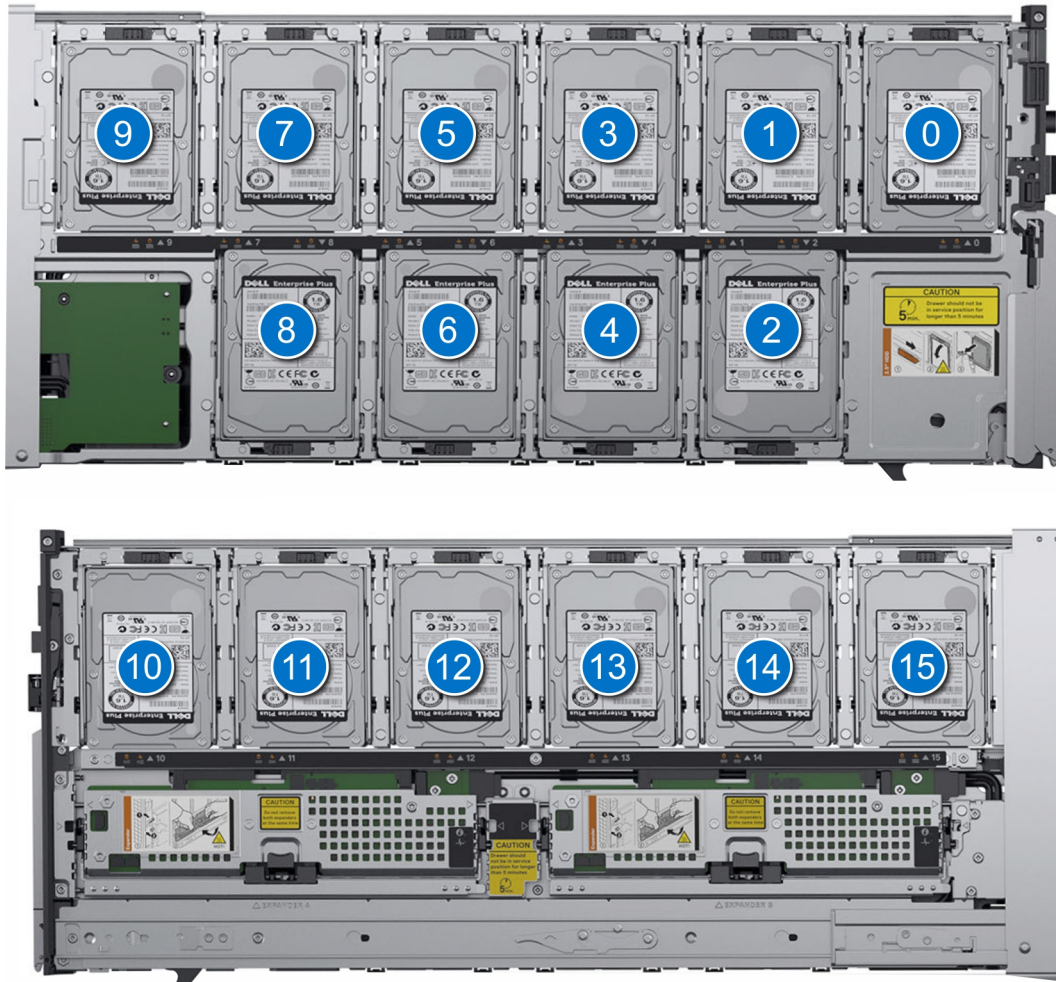


Figure 5. Drive numbering

Storage expander module

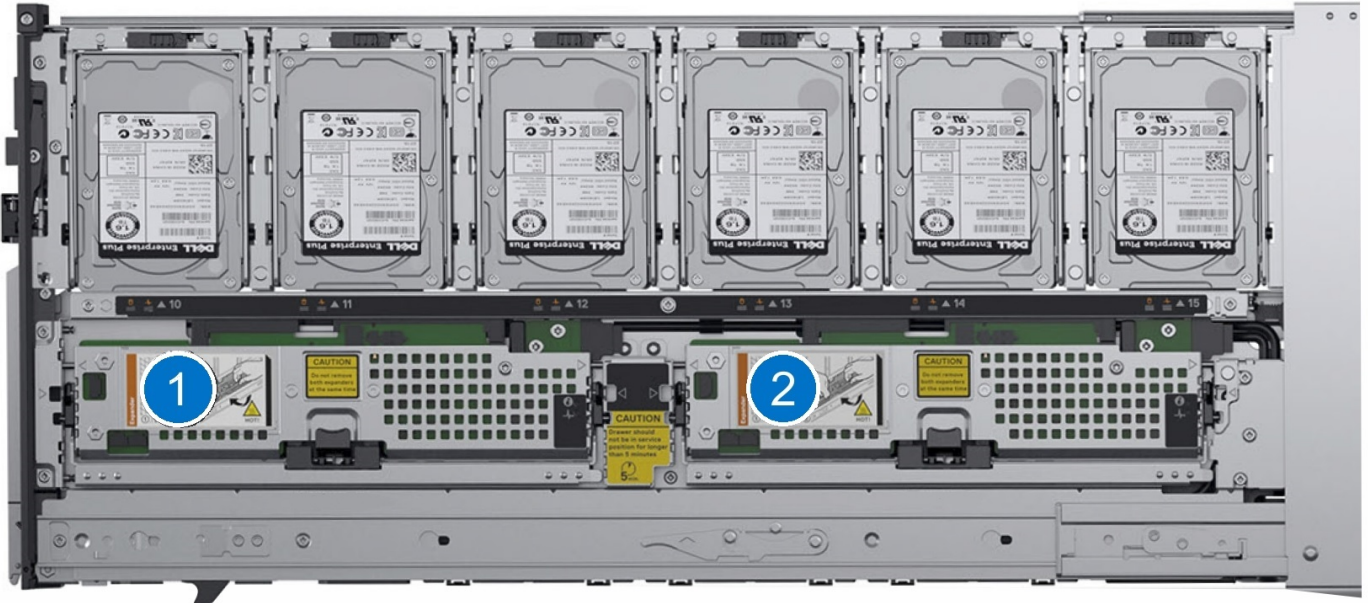


Figure 6. SAS expander modules

PowerEdge MX5000s System diagnostics and indicators

System health indicator codes

The system health indicator is located on the front panel of the sled. The status indicators indicate the health condition of the PowerEdge MX5016s storage sled.

Table 3. Health status indicators codes

System health indicator codes	Condition
Solid blue	Indicates that the system is powered on, system is healthy, and system ID mode is not active.
Blinking blue	Indicates that the system ID mode is active.
Blinking amber	Indicates that the system is experiencing a fault. Check the System event log or the LCD panel, if available on the bezel, for specific error messages. For more information about error messages, see the <i>Dell Event and Error Messages Reference Guide</i> at Dell.com/openmanagemanuals > OpenManage software .

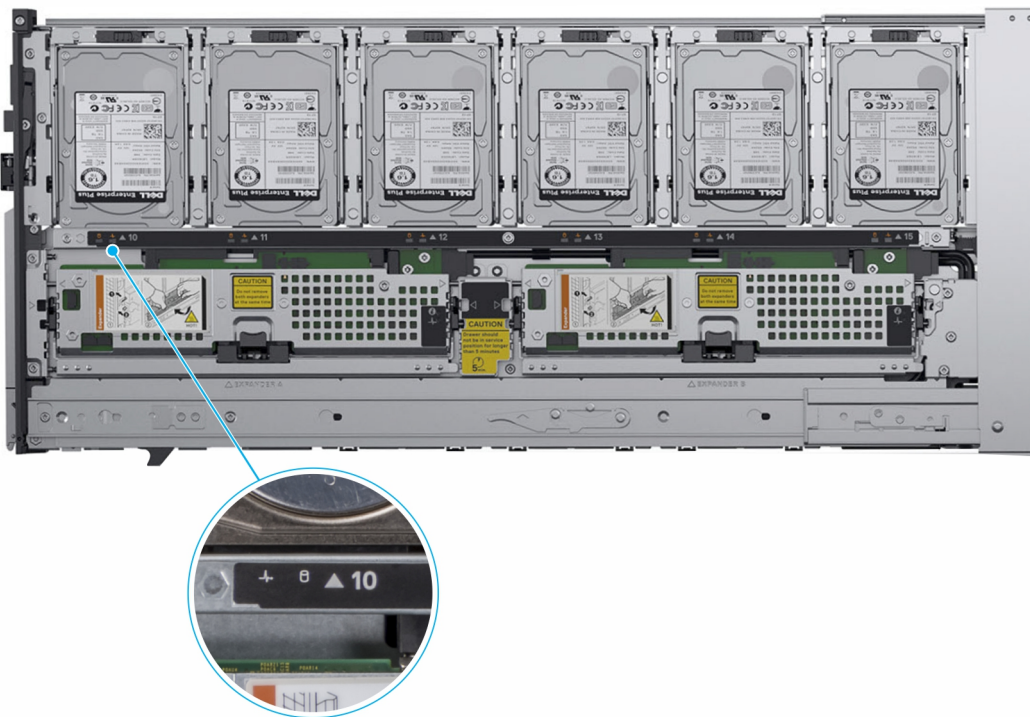
Drive status LED indicators

Table 4. Drive status LED indicator

Drive status LED indicators	Condition
OFF	Indicates that the storage sled is not mapped to any compute sled, or that all compute sleds to which it is mapped are

Drive status LED indicators**Condition**

	powered off. The storage sled is safe to remove in this case.
Solid green	Indicates that the storage sled is mapped to one or more compute sleds and that any of the mapped compute sleds is powered on.
Blinking green	Indicates that the storage sled is mapped to a compute sled and there is activity on any of the internal drives of the storage sled.
Blinking amber	Indicates that a drive within the storage sled has been marked as failed by the disk controller on a mapped compute sled.

**Figure 7. Drive status LED indicator****Table 5. Drive status LED indicator**

Drive status indicators	Condition
Blinks green (On 250 ms Off 250 ms)	Identifying drive or preparing for removal
Off	Slot empty
Blinks green (500 ms), amber (500 ms), and turns off one second	Predicted drive failure
Blinks amber (On 150 ms Off 150 ms)	Drive failed
Blinks green (On 400 ms Off 100 ms)	Drive rebuilding
Solid green	Drive online

Drive status indicators

Condition

Blinks green three seconds, turns off three seconds, blinks amber three seconds, and turns off three seconds

Drives rebuild aborted

Expander health status indicators

Expander health status indicator indicates the health condition of the expander module and identification indicator helps to locate a particular expander card within the storage sled.

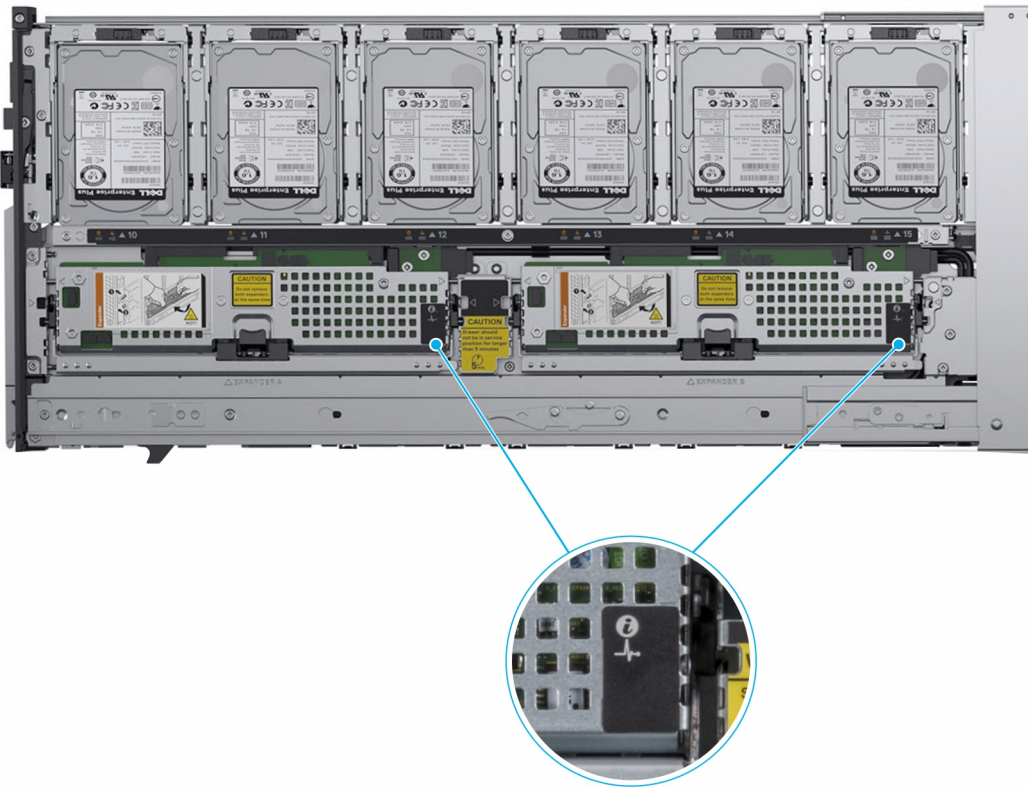





Figure 8. Expander health indicators

Table 6. Expander health status indicators

Indicator, Button, or Connector	Icon	Description	Condition
Identification indicator		Flashes blue for one second and then turns off.  NOTE: LED is OFF, when no Identification in progress.	Identify
Diagnostic indicator		Green	Expander card in good health.
		Flashes amber for two seconds and turns off.	Expander card failure.
		Flashes continuous green for 5 times and then turns off for two seconds.	Expander firmware mismatch

Module overview MX5000s

Front view of PowerEdge MX5000s module

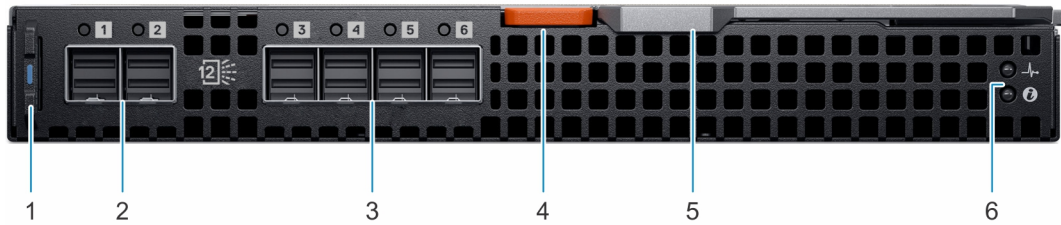


Figure 9. Front view of the PowerEdge MX5000s module

- | | |
|-------------------------------------|-------------------------------|
| 1. Information tag | 2. External SAS ports (1 & 2) |
| 3. External SAS ports (3, 4, 5 & 6) | 4. Release lever button |
| 5. Release lever | 6. LED indicators |

NOTE: External SAS ports 1-6 are available after initial release

External LEDs

The PowerEdge MX5000s SAS IOM supports LEDs for diagnostic and run-time status:

- External SAS Link LEDs - Six external SAS Link LEDs for each of the external SAS connectors. These LEDs are located next to the associated SAS connectors.
- System Status LEDs - External system status LEDs indicate the health status of the SAS IOM. The blue LED is used for IOM Identification.

For more information about external LEDs, see [System diagnostics and indicator for SAS IOM module](#).

PowerEdge MX5000s System diagnostics and indicator codes

LED indicators

The Dell EMC PowerEdge MX5000s LED indicators indicate the health condition of the PowerEdge MX5000s module and identification indicator helps to locate a particular PowerEdge MX5000s module.

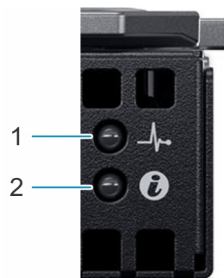





Figure 10. Dell EMC PowerEdge MX5000s LED indicators

Table 7. Dell EMC PowerEdge LED indicators

Indicator, Button, or Connector	Icon	Description	Condition
Identification indicator		Flashes blue for one second and then turns off.	Indicates that the MX5000s module is active.
		 NOTE: LED is OFF, when no Identification is in progress.	
Diagnostic indicator		Green	MX5000s module in good health.
		Flashes amber for two seconds and turns off.	MX5000s module card failure.
		Flashes continuous green for five times and then turns off for two seconds.	MX5000s module firmware mismatch

Appendix A. Additional specifications

Module dimensions

Table 8. Dimensions of the Dell EMC PowerEdge MX5016s and MX5000s

System	Height	Width	Depth(handle closed)
PowerEdge MX5016s	250.2 mm (9.85 inches)	42.15 mm (1.65 inches)	600.00 mm (23.62 inches)
PowerEdge MX5000s	27.50 mm (1.08 inches)	214.50 mm (8.44 inches)	208.30 mm (8.20 inches)

Module weight

Table 9. Dell EMC PowerEdge MX5016s and MX5000s module weight

System	Maximum weight
PowerEdge MX5016s	12 kg (26.45 lbs)
PowerEdge MX5000s	1.5 kg (3.30 lb)

Appendix B. Standards compliance

Table 10. Industry standard documents

Standard	URL for information and specifications
ACPI Advance Configuration and Power Interface Specification, v2.0c	acpi.info
Ethernet IEEE 802.3-2005	standards.ieee.org/getieee802/802.3.html
HDG Hardware Design Guide Version 3.0 for Microsoft Windows Server	microsoft.com/whdc/system/platform/pcdesign/designguide/serverdg.mspx
IPMI Intelligent Platform Management Interface, v2.0	intel.com/design/servers/ipmi
DDR4 Memory DDR4 SDRAM Specification	jedec.org/standards-documents/docs/jesd79-4.pdf
PCI Express PCI Express Base Specification Rev. 2.0 and 3.0	pcsig.com/specifications/pciexpress
PMBus Power System Management Protocol Specification, v1.2	pmbus.info/specs.html
SAS Serial Attached SCSI, v1.1	t10.org
SATA Serial ATA Rev. 2.6; SATA II, SATA 1.0a Extensions, Rev. 1.2	sata-io.org
SMBIOS System Management BIOS Reference Specification, v2.7	dmtf.org/standards/smbios
TPM Trusted Platform Module Specification, v1.2 and v2.0	trustedcomputinggroup.org
UEFI Unified Extensible Firmware Interface Specification, v2.1	uefi.org/specifications
USB Universal Serial Bus Specification, Rev. 2.0	usb.org/developers/docs

Appendix C: Additional resources

Table 11. Additional resources

Resource	Description of contents	Location
Installation and Service Manual	This manual, available in PDF format, provides the following information: <ul style="list-style-type: none"> • Chassis features • System Setup program • System messages • System codes and indicators • System BIOS • Remove and replace procedures • Troubleshooting • Diagnostics • Jumpers and connectors 	Dell.com/Support/Manuals
Technical Guide Details	Chassis details including power and connectivity.	<ul style="list-style-type: none"> • MX7000 https://www.dell.com/en-us/work/shop/povw/poweredge-mx7000 • MX840c https://www.dell.com/en-us/work/shop/povw/poweredge-mx840c • MX740c https://www.dell.com/en-us/work/shop/povw/poweredge-mx740c
Getting Started Guide	This guide ships with the system, and is also available in PDF format. This guide provides the following information: <ul style="list-style-type: none"> • Initial setup steps • Key system features • Technical specifications 	Dell.com/Support/Manuals
Information Update	This document ships with the system, is also available in PDF format online, and provides information on system updates.	Dell.com/Support/Manuals
System Information Label	The system information label documents the system board layout and system jumper settings. Text is minimized due to space limitations and translation	Outside the system chassis cover

Resource	Description of contents	Location
	considerations. The label size is standardized across platforms.	
Quick Resource Locator (QRL)	This code on the chassis can be scanned by a phone application to access additional information and resources for the server, including videos, reference materials, service tag information, and Dell EMC contact information.	Outside the system chassis cover
Enterprise Infrastructure Planning Tool (EPIT)	The Dell EMC online EPIT enables easier and more meaningful estimates to help you determine the most efficient configuration possible. Use EPIT to calculate the power consumption of your hardware, power infrastructure, and storage.	Dell.com/calc

Appendix D. Support and deployment services

ProDeploy Enterprise Suite and Residency Services

ProDeploy Enterprise Suite gets your server out of the box and into optimized production - fast. Our elite deployment engineers with broad and deep experience utilizing best-in-class processes along with our established global scale can help you around the clock and around the globe. From simple to the most complex server installations and software integration, we take the guess work and risk out of deploying your new server technology. Who's better suited to implement the latest Dell EMC servers than the Dell EMC elite deployment engineers who do it every day?

		Basic Deployment	ProDeploy	ProDeploy Plus
Pre-deployment	Single point of contact for project management		•	In-region
	Site readiness review		•	•
	Implementation planning		•	•
	Technology Service Manager (TSM) engagement for ProSupport Plus entitled devices			•
Deployment	Deployment service hours	Business hours	24x7	24x7
	Onsite hardware installation*	•	•	•
	Packaging materials disposal	•	•	•
	Install and configure system software		•	Onsite
	Project documentation with knowledge transfer		•	•
Post-deployment	Deployment verification		•	•
	Configuration data transfer to Dell EMC technical support		•	•
	30-days of post-deployment configuration assistance			•
	Training credits for Dell EMC Education Services			•

Figure 11. ProDeploy Enterprise Suite capabilities

 **NOTE: Hardware installation not applicable on selected software products.**

ProDeploy Plus

From beginning to end, ProDeploy Plus provides the skill and scale needed to successfully execute demanding deployments in today's complex IT environments. Certified Dell EMC experts start with extensive environmental assessments and detailed migration planning and recommendations. Software installation includes set up of most versions of Dell EMC SupportAssist and OpenManage system management utilities. Post-deployment configuration assistance, testing, and product orientation help you rest easy knowing your systems have been deployed and integrated by the best.

ProDeploy

ProDeploy provides full service installation and configuration of both server hardware and system software by certified deployment engineers including set up of most versions of Dell EMC SupportAssist and OpenManage system management utilities. To prepare for the deployment, we conduct a site readiness review and implementation planning. System testing, validation and full project documentation with knowledge transfer complete the process. We focus on getting you up and running so you can focus on your business and prepare for whatever comes next.

Basic Deployment

Basic Deployment delivers worry-free professional installation of your servers by experienced technicians who know Dell EMC servers inside and out.

Residency Services

Residency helps customers transition to new capabilities quickly through on-site or remote Dell EMC experts whose priorities and time you control. Residency experts can provide post implementation management and knowledge transfer related to a new technology acquisition or day-to-day operational management of the IT infrastructure.

Deployment services

Deployment services details and exceptions can be found in service description documents at the Enterprise Configuration and Deployment page on Dell.com.

Remote Consulting Services

When you are in the final stages of your PowerEdge server implementation, you can rely on Dell Remote Consulting and our certified technical experts to help you optimize your configuration with best practices for your software, virtualization, server, storage, networking, and systems management.

Data Migration Service

Protect your business and data with our single point of contact to manage your data migration project. Your project manager will work with our experienced team of experts to create a plan using industry-leading tools and proven processes based on global best practices to migrate your existing files and data, so your business gets up and running quickly and smoothly.

ProSupport Enterprise Suite

With Dell EMC ProSupport Services, we can help you keep your operation running smoothly, so you can focus on running your business. We will help you maintain peak performance and availability of your most essential workloads. Dell EMC ProSupport is a suite of support services that enable you to build the solution that is right for your organization. Choose support models based on how you use technology and where you want to allocate resources. From the desktop to the data center, address everyday IT challenges, such as unplanned downtime, mission-critical needs, data and asset protection, support planning, resource allocation, software application management and more. Optimize your IT resources by choosing the right support model.

Accelerate your IT Transformation

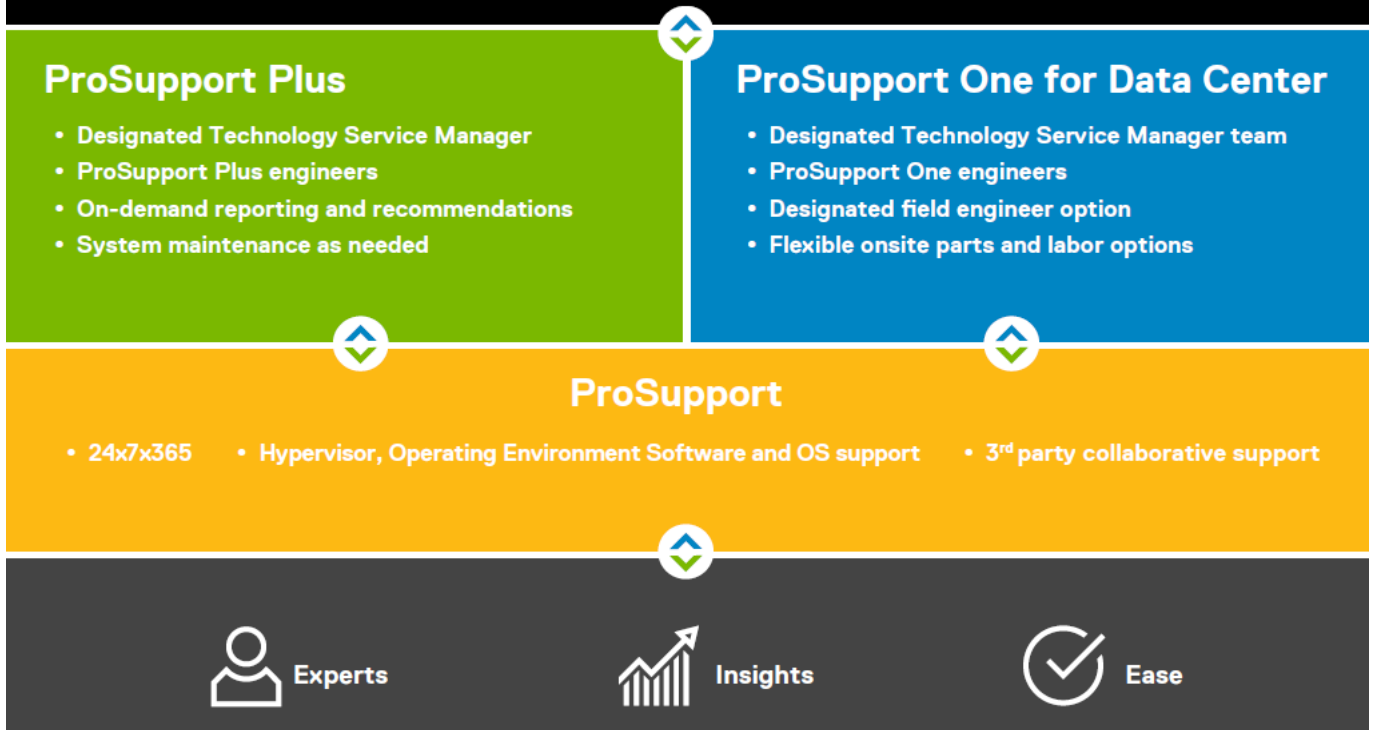


Figure 12. ProSupport Enterprise Suite

ProSupport Plus

When you purchase your PowerEdge server, we recommend ProSupport Plus, our proactive and preventative support for your business-critical systems. ProSupport Plus provides you with all the benefits of ProSupport, plus the following:

- A designated Technology Service Manager who knows your business and your environment
- Access to senior ProSupport engineers for faster issue resolution
- Personalized, preventive recommendations based on analysis of support trends and best practices from across the Dell EMC customer base to reduce support issues and improve performance
- Predictive analysis for issue prevention and optimization enabled by SupportAssist
- Proactive monitoring, issue detection, notification and automated case creation for accelerated issue resolution enabled by SupportAssist
- On-demand reporting and analytics-based recommendations enabled by SupportAssist and TechDirect

ProSupport

Our ProSupport service offers highly trained experts around the clock and around the globe to address your IT needs. We will help you minimize disruptions and maximize availability of your PowerEdge server workloads with:

- 24x7x365 access to certified hardware and software experts
- Collaborative 3rd party support
- Hypervisor and OS support
- Consistent level of support available for Dell EMC hardware, software and solutions
- Onsite parts and labor response options including next business day or four-hour mission critical

ProSupport One for Data Center

ProSupport One for Data Center offers flexible site-wide support for large and distributed data centers with more than 1,000 assets. This offering is built on standard ProSupport components that leverage our global scale but are tailored to your company's needs. While not for everyone, it offers a truly unique solution for Dell EMC's largest customers with the most complex environments.

- Team of designated Technology Services Managers with remote, on-site options
- Designated ProSupport One technical and field engineers who are trained on your environment and configurations
- On-demand reporting and analytics-based recommendations enabled by SupportAssist and TechDirect
- Flexible on-site support and parts options that fit your operational model
- A tailored support plan and training for your operations staff

	ProSupport	ProSupport Plus	ProSupport One for Data Center
Remote technical support	24x7	24x7	24x7
Parts and labor response options	Next business day or Mission Critical	Next business day or Mission Critical	Flexible
Automated issue detection and case creation	•	•	•
Self-service case initiation and management	•	•	•
Hypervisor and OS support	•	•	•
Priority access to specialized support experts		•	•
Designated Technology Service Manager		•	•
Personalized assessments and recommendations		•	•
On-demand support and utilization reports		•	•
Systems Maintenance guidance		Semiannual	Optional
Designated technical and field support teams			•

Figure 13. ProSupport One for Data Center model

Support Technologies

Powering your support experience with predictive, data-driven technologies.

SupportAssist

The best time to solve a problem is before it happens. The automated proactive and predictive technology SupportAssist* helps reduce your steps and time to resolution, often detecting issues before they become a crisis. Benefits include:

- Value - SupportAssist is available to all customer at no additional charge.
- Improve productivity - replace manual, high-effort routines with automated support.
- Accelerate time to resolution - receive issue alerts, automatic case creation and proactive contact from Dell EMC experts.
- Gain insight and control - optimize enterprise devices with on-demand ProSupport Plus reporting in TechDirect and get predictive issue detection before the problem starts.

SupportAssist is included with all support plans but features vary based on service level agreement.

	Basic Hardware Warranty	ProSupport	ProSupport Plus
Automated issue detection and system state information collection	•	•	•
Proactive, automated case creation and notification		•	•
Predictive issue detection for failure prevention			•
Recommendation reporting available on-demand in TechDirect			•

Figure 14. SupportAssist model

Get started at Dell.com/SupportAssist

TechDirect

Boost your IT teams productivity when supporting Dell EMC systems. With over 1.4 million self-dispatches processed each year, TechDirect has proven its effectiveness as a support tool. You can:

- Self-dispatch replacement parts
- Request technical support
- Integrate APIs into your help desk

Or, access all your Dell EMC certification and authorization needs. Train your staff on Dell EMC products as TechDirect allows you to:

- Download study guides
- Schedule certification and authorization exams
- View transcripts of completed courses and exams

Register at techdirect.dell.com

Additional professional services

Dell Education Services

Dell Education Services offers the PowerEdge server training courses designed to help you achieve more with your hardware investment. The curriculum is designed in conjunction with the server development team, as well as Dell EMC's technical support team, to ensure that the training delivers the information and practical, hands-on skills you and your team need to confidently manage and maintain your Dell EMC server solution. To learn more or register for a class today, visit LearnDell.com/Server.

Dell EMC Global Infrastructure Consulting Services

Dell EMC Global Infrastructure Consulting Services use skilled solution architects, innovative tools, automated analysis and Dell EMC's intellectual property to give you rapid insight into the root causes of unnecessary complexity. We seek better answers than traditional service models, and our strategy is to help you quickly identify high-impact, short-duration projects that deliver return on investment (ROI) and free up resources. The results are practical, action-oriented plans with specific, predictable, measurable outcomes. From data center optimization to server virtualization to systems management, our consulting services can help you build a more efficient enterprise.

Dell EMC Managed Services

Dell EMC Managed Services are a modular set of lifecycle services designed to help you automate and centrally configure, deploy, and manage your day-to-day data center operations. These services extend your existing on-premise IT infrastructure with off-premise cloud services designed to better address challenges with mobility, highly distributed organizations, security, compliance, business continuity, and disaster preparedness.