**Dell | EMC CX500 Fibre Channel Storage System**

**Key Points**

- The Dell™/EMC® CX500 storage system is designed to keep users online...always. Enterprise-class business continuance features include hot-pluggable redundant hardware, hot spare disk drives, multipath failover, snapshots, cloning, and local/remote mirroring, and non-disruptive firmware upgrades - all at midrange prices.

- The CX500 storage system continues in the excellence of the previous generations, coupling lessons learned and best practices with the latest hardware and software technologies. The CX500 carries the reliability and dependability that customers have come to expect in Dell/EMC.

- Whether data growth, business continuance or higher performance is the driver, the CX500 can be used to upgrade an existing Dell/EMC SAN. The CX500 interoperates freely with both legacy Dell/EMC products as well as other CX series Dell/EMC solutions. Mirroring (via MirrorView™) is supported between the CX500 and CX500, CX400, CX600, FC4700, or FC4700-2 systems.

- The CX500 is designed for future growth. Pay-as-you-grow by hot-adding expansion enclosures with the CX500. It is possible to...
add up to seven DAE2 expansion enclosures (up to 120 drives) to a single CX500. If an organization outgrows a CX500, it is easily converted to a DAE2-OS for data-in-place redeployment into new CX700 systems.

• Help lower the total cost of storage with simple yet powerful management software. The CX500 storage system is fully compatible with the entire Navisphere® software suite as well as completely integrated into the VisualSAN® SAN management product.

• Maximize your investment by integrating both fibre channel drives with Advanced Technology Attach (ATA) drives in the same array. Effectively store data where it makes the most sense – whether performance or capacity oriented.

• Superior service and support – Dell offers professional consulting, installation, and implementation services to help ensure your CX500 storage system is brought online quickly and is configured to meet your business requirements. And every CX500 is backed with Gold level Dell Premier Enterprise Support Services to help ensure that the system remains up and running for years to come.

Background

The CX500 storage system continues where the CX400 left off, providing best-of-breed enterprise storage in direct attach or SAN environments. Storage-based functionality and comprehensive management software offer world-class information protection and streamlined, efficient management. The CX500 is a fully integrated 2 Gigabit storage solution with four front-end Fibre Channel 2 optical ports and up to 120 2-Gigabit back-end disk drives.

Advanced software functionality for management, business continuity, disaster recovery, data movement, data management and analysis round out this complete solution to a growing business’s storage needs.

Product Description

The Dell/EMC CX500 is a mid-range 2Gbps Fibre Channel RAID array that can be used in a SAN or directly attached to servers. The CX500 offers the same enterprise business continuance features as the Dell/EMC CX700, but is designed for more price-sensitive users who do not need all the performance and scalability that the CX700 offers.
The CX500 storage system consists of a 2Gbps Disk Processor Enclosure (DPE2) and optional 2Gbps Disk Array Enclosures (DAE2) and/or ATA Disk Array Enclosure (DAE2-ATA). The DPE2 contains two storage processor boards, up to fifteen 1-inch Fibre Channel disk drives, and redundant, hot-swappable fans and power supplies in a single 3U chassis—see Figure 1.

![Figure 1](CX500_Rear_View.png)

**Figure 1**
**CX500 Rear View showing Power Supplies and Storage Processors.**

Up to seven DAE2 and/or DAE2-ATA expansion enclosures with up to fifteen drives each can be added to the subsystem for a maximum configuration of 120 drives behind a single DPE2. With 146GB FC drives, this equates to 17.1 terabytes of raw storage. When using the DAE2-ATA enclosure, the CX500 storage system’s total capacity expands to 27.7 terabytes of raw storage.

Four full bandwidth 2Gbps Fibre Channel host ports allow direct connection of up to four hosts or a single 2-node high availability cluster (two HBAs per server) without the use of an external switch. In SAN environments, the CX500 can hold storage for up to 128 redundantly connected servers.

The CX500 storage system is configured and managed through the Navisphere software suite (the same as every other Dell/EMC product), and has the same firmware functionality as the CX700 including online LUN expansion and non-disruptive firmware upgrades (NDU) as shown in Figure 2. The CX500 also runs SnapView™ point-in-time-copy software, SANCopy™ data movement software and MirrorView remote replication software.

![Figure 2](Navisphere_Manager.png)

**Figure 2**
**Screenshot of Navisphere Manager graphical user interface**
The CX500 is qualified to be used with Microsoft® Windows®, Novell® NetWare®, Linux®, and several Unix variants including Sun Solaris®, IBM-AIX®, and HP-UX®.

**Table 1**
**Feature Comparison of the CX500 to the CX300 and CX700**

<table>
<thead>
<tr>
<th>Feature</th>
<th>CX500</th>
<th>CX300</th>
<th>CX700</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive scalability</td>
<td>120</td>
<td>60</td>
<td>240</td>
</tr>
<tr>
<td>Host scalability (SAN)</td>
<td>128</td>
<td>64</td>
<td>256</td>
</tr>
<tr>
<td>Performance</td>
<td>120,000 IOPs 720 MB/s</td>
<td>50,000 IOPs 680 MB/s</td>
<td>200,000 IOPs 1520 MB/s</td>
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<tr>
<td>Host connections</td>
<td>4 SFF optical</td>
<td>4 SFF optical</td>
<td>8 SFF optical</td>
</tr>
<tr>
<td>Rack size (DPE2 or SPE)</td>
<td>DPE2 and SPS, with disks 4U</td>
<td>DPE2 and SPS, with disks 4U</td>
<td>SPE and SPS, no disks 5U</td>
</tr>
<tr>
<td>Rack size (DAE2)</td>
<td>3U</td>
<td>3U</td>
<td>3U</td>
</tr>
<tr>
<td>RAID</td>
<td>0, 1, 1/0, 3, 5</td>
<td>0, 1, 1/0, 3, 5</td>
<td>0, 1, 1/0, 3, 5</td>
</tr>
<tr>
<td>Cache vaulting</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Data scrubbing</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Management software</td>
<td>Navisphere Manager</td>
<td>Navisphere Manager</td>
<td>Navisphere Manager</td>
</tr>
<tr>
<td>Point in time copy</td>
<td>SnapView</td>
<td>SnapView</td>
<td>SnapView</td>
</tr>
</tbody>
</table>
Markets/Applications
The CX500 is a mid-range storage system suitable for use in business critical or day-to-day production-level activities that require leading edge performance and scalability with options for business continuance and disaster recovery. The CX500 may be deployed in heterogeneous Windows, NetWare, Linux, and Unix environments and is appropriate for applications in medium-sized businesses to global enterprises.

Examples of where the CX500 storage system is a good fit are as follow:

- Business critical applications that require continuous availability and disaster recovery, combined with high performance and large capacity scaling
- Large scale SAN deployments (40 + servers)
- Applications that require cost-effective array-based point-in-time-copy or cloning as well as mirroring.
- Data center environments where the flexibility of modular storage growth is needed

CX500 storage systems are targeted toward the external RAID storage market, for those customers seeking a storage consolidation platform with no single point of failure, high reliability, availability and performance while supporting many servers and applications.

The CX500 is great for data intensive applications and fully functional enterprise SAN environments including (but not limited to):

- High performance applications
- Video streaming and high speed content delivery
- Disaster Recovery (fully mirrored solutions)
- OLTP and web servers
- Data warehouses
• Graphics intensive environments
• Distributed organizations
• Email (Messaging)
• Customer relationship management

Direct Attach
In direct attach configurations, the CX500 storage system provides storage for up to four directly attached servers or a combination of clustered servers. In these configurations, the CX500 has higher availability and allows more distance between server and storage than direct attached SCSI storage systems. Also, configuring the CX500 as direct attach storage prepares the attached servers for seamless integration into a SAN at some point in the future.

Storage Area Networks
In a SAN environment (where the CX500 really shines), the CX500 storage system can actively communicate with up to 128 redundantly connected servers. When used in a SAN, the CX500 offers the following potential benefits over direct-attached storage:

• Lower total cost of ownership through simplified management and centralized backup
• More efficient use of assets through increased storage utilization
• Reduced impact to production performance through LAN-free backup
• Reduced risk of data loss through disaster recovery capabilities (i.e., remote mirroring, point-in-time copies and clones)

Typical Applications
• Exchange clusters using MirrorView for disaster recovery
  The performance and scalability of the CX500 storage systems are ideal for high availability clusters running Microsoft Exchange or other messaging software for several thousand users. MirrorView remote mirroring software adds another dimension of data protection to email data by allowing mirroring to other Dell/EMC arrays hundreds of meters or thousands of kilometers away.

• Medium to large sized OLTP databases using SnapView cloning for zero-window, full performance backup
  The transactional performance of the CX500 coupled with SnapView array-based software is the perfect combination for
mission critical databases that are active 24x7. Use cloning to create a point-in-time copy of the data, and then back up or analyze the copy while the original data remains in production. Since the cloned data and the original data reside on different disks, the backups and analyses will have minimal performance impact to your database.

- **Decision support systems using SnapView snapshots for space efficient zero-window backup**

  The CX500 storage system can also be used for non-critical applications that require a highly scalable, cost effective solution with high performance needs. This is typical of many decision support databases. The CX500 can scale up to 17.5 TB with 146GB drives (28TB with ATA) providing plenty of capacity for your data. In addition, by using SnapView snapshots, you can back up this large amount of data with zero downtime to your database, and without having to make a full copy.

- **Video editing and prepress**

  With 720MB/s of sequential bandwidth, the CX500 storage system is ideally suited to video and prepress applications. The CX500 can directly attach to up to four high-speed video editing stations. To connect to more servers, simply add a Fibre Channel switch.

**Manufacturing** Compute intensive applications ranging from software development to CAD/CAM to automobile crash simulation (finite element modeling) all provide opportunities for a CX500 high bandwidth offering. Manufacturing environments are looking for highly available offerings at a reasonable price that can be integrated smoothly into existing development and management applications. Reducing development time for products by providing a shared file system space for CAD/CAM applications at an attractive price is a key offering.

**Life Sciences and Healthcare** Computational chemistry, genomics, and proteomics are all compute intensive applications at the forefront of new drug discovery and genetic research activities. It is believed that proteomics is both larger and more complex than genomics and will far exceed genomics in the amount of data generated, maybe 30 to 1,000 times the amount. The complex nature of the data not only requires compute intensive applications but in many instances the same high bandwidth storage environment that we have seen in the healthcare environment with the PACS (Picture Archiving Communications systems. Given the CX500 storage system’s improved performance and storage capacity over its predecessor the CX400, it is now possible for life sciences companies to consider this mid size
product as an addition to their datacenter without concern for diminished speeds when their storage requirements reach very large sizes.

**Financial Services** This is the prototypical industry where information is the foundation of business decisions. Banking and securities-related businesses rely on data warehousing to drive CRM (Customer Resource Management) programs and new process development. Also, compliance with Federal regulations and customer service requirements drive the need for image processing for much of the paper (e.g., checks, stock certificates) that comprises financial transactions. The robust performance, functionality, capacity, density, and attractive price/performance of the CX500 storage system particularly where high bandwidth applications are required can help banks meet the challenge of keeping images of checks, loan documents, and transaction records secure and highly available for seven years or often the life of the loan. Banks are evaluating the total cost of records management and are finding that high capacity disk subsystems can be cost effective versus the traditional paper, microfilm, and tape archive. The CX500’s attractive price point further reinforces the benefits of a Dell/EMC offering in this space.

**Oil and Gas** The capturing and processing of data for oil and natural gas exploration is one of the most “compute intensive” applications today. Additionally data warehousing is an integral part of the analysis phase of oil exploration. Through data warehousing, large volumes of seismic data are shared between geophysicists and must remain highly available around the clock so that they can collaborate to find oil more quickly and more reliably during the exploration and the discovery process. If access to a shared pool of seismic information isn’t possible, expensive drilling rigs and other assets are idle. The new CX500 storage array is well suited to this work given its 4GB of cache which can speed processing in intensive Read/Write environments often encountered in geophysical analysis. Also, the CX500 is ready to accommodate up to 17.1 Terabytes of data and more than 27TBs of data when using ATA hard drives, meaning organizations can keep large volumes of analytical data in near-line storage without needing to archive to slower mediums such as tape or optical disk.

**Retail** Similar to financial services, the retail industry relies on data warehousing to drive much of the business, from financial performance analysis to CRM programs to targeted marketing. Retailers consolidate and manage ever-increasing amounts of
actionable data about buying behavior to create a personalized view of customer’s today. They have a need to predict preferences and purchases of tomorrow and they need to know their most profitable customers. The CX500 storage system is a great fit for data warehousing applications that help organizations make marketing or business decisions. Because the CX500 scales to more than 27 TB and can use EMC’s optional MirrorView software, data inputted at one retail location can be shared with other locations nearby simultaneously.

**Entertainment** All aspects of film, video and broadcasting content production and distribution are intense image processing applications. In addition, the keen cost sensitivity of these industries play to Dell/EMC’s exceptional price-performance attributes.

**Features and Benefits**

**Availability:**

The CX500 storage system offers robust end-to-end data integrity, full component redundancy, and non-disruptive ‘upgrades.’ Unique capabilities include active disk scrubbing, cache de-staging, hot swappable components and non-disruptive micro-code and application upgrades.

**Management:**

Like all Dell/EMC CX-Series arrays, the CX500 storage system uses the Navisphere management framework. Navisphere is the easy to learn, easy to use GUI-based storage management tool. Navisphere enables the management of single-to-many Dell/EMC storage arrays from anywhere with its extensive security options.

**Open Systems Consolidation:**

The Dell/EMC product line offers extensive support for multi-vendor environments including UNIX, Windows NT, Linux and Netware. It supports the majority of major hosts and operating systems concurrently.

The CX500 storage system is designed to hold and consolidate all of a company’s datacenter operations and form the core of a company’s data strategy.

**Performance and Scalability:** The Dell/EMC CX500 offers up to 760MB per second performance and the ability to scale up to over 17 TBs of raw storage when using Fibre Channel hard drives. And as much as 27.7TB with ATA hard drives.
Flexibility:
The Dell/EMC product line offers numerous configuration choices for connectivity, performance and capacity. Integrating into your existing environment is made easier through extensive compatibility testing and validation.

Investment Protection:
Dell/EMC storage systems provide great investment protection. The entire CX-Series family leverages common components and compatible software, and can be upgraded throughout the line.

With the addition of ATA and a hardware base designed to accommodate feature technology advancements, the CX-Series is a sound investment today and tomorrow.

Back up and Restore Functionality:
Whether your need is business continuance, disaster recovery, or high availability, the CX-Series can assist in reaching your goals.

Dell/EMC products with integrated hardware, software and backup offerings from all major vendors (including Veritas, Legato, CA, Tivoli, EDM and CommVault) offer a variety of customizable solutions to match your data management plan.

High availability hardware
The modular redundant design of the CX500 storage system allows the system to continue normal operation in the event of a failed power supply, cooling unit, storage processor, or disk drive. All these components are hot pluggable for easy repair with no downtime.

Sequential bandwidth and IO
With four full bandwidth, 2Gbps Fibre Channel ports on the host side and two on the drive side, the CX500 storage system is suitable for the most demanding applications. This clearly establishes the CX500 as a contender in its competitive set and makes the array ideal for sequential applications such as video, prepress, and scientific analysis.

High IO is a critical feature for customers looking to supply database or OLTP applications with the data they demand to operate at peak speeds. The CX500, with 120,000 IOPs per second, is well matched to support intensive data base applications.
Cache tuning

All Dell/EMC storage systems have extremely flexible cache tuning capabilities relative to competing modular storage products. This allows cache to be tuned precisely to the load resulting in optimized performance.

Cache is tuned through Navisphere Manager. The user can set parameters for:

- Amount of read cache per processor
- Amount of write cache per system
- Cache page size
- High and Low watermark
- Watermark processing on/off
- Mirrored write cache on/off
- Read and write cache enable per processor and per LUN
- Prefetch attributes (used with read caching)

Centralized management

Navisphere Manager is a powerful configuration and management utility for all Dell/EMC storage systems. The easy-to-use Graphical User Interface gets your basic configuration up and running quickly and then dive in later for optimization and tuning. Powerful monitoring and notification functions, including “email home” capability, automatically let you know when something is wrong and spark corrective action from Dell.

Navisphere Manager is Java-based code that resides on the array and serves up the GUI to a web browser anywhere on your LAN or WAN. Use a single management station to manage one or several storage systems. Make changes to your configuration remotely. It’s no problem with Navisphere Manager.

Non-disruptive upgrade (NDU)

Non-disruptive upgrade is built in to the core software of every new generation Dell/EMC storage system. This allows the core code (firmware) to be upgraded on the fly with no interruption in access to the storage on the array. To accomplish this, the array will automatically perform a series of failover and failback operation between the storage processors. Also, the upgrade can be rolled back if the new version reveals unanticipated characteristics in your SAN.
Mirroring

The CX500 storage system supports MirrorView software for mirroring to other Dell/EMC storage systems. The CX500 can mirror over shortwave Fibre Channel for distances of 300 meters, over longwave Fiber Channel for distances of 10km, over Fiber Channel extenders for distances of 60km, and over FC to IP routers (e.g., CNT Ultranet Edge 1000, Nishan) for longer distances.

A mirror consists of a source LUN and one or more target LUNs. Every write to the source LUN is also written to the target LUN before acknowledgement is sent to the host. This is known as synchronous mirroring. Synchronous mirroring will impact performance, but the degree of impact is dependent on several factors so presales consulting engagements are common for mirroring implementations.

The use of ATA disks as the target LUN is both economical and technically a sound choice when suggesting or supplying a mirroring solution. The CX500 storage system supports up to 50 MirrorView images.

Snapshots

A snapshot (also known as a point-in-time-copy) is an instantaneous virtual copy of a LUN taken at a precise moment in time. The term “virtual copy” is used because unlike a mirror or clone, a snapshot is not a full copy of the data but is instead composed of saved pieces of data (copies of the data that has changed) and a table of pointers. The table of pointers allows the snapshot software to piece together and effectively present a LUN composed partially of copied data and partially of the original data.

The critical things to remember about snapshots are:

1. Snapshots are instantaneous – Snapshots have the effect of making an instantaneous copy of the source LUN at a specified point in time. Snapshot LUNs may be mounted immediately after a snapshot session begins.

2. Snapshots allocate space as needed – a snapshot does not necessarily consume as much space as the source LUN.

3. Snapshots share data with source LUNs - When you mount and use a snapshot LUN, the performance of the source LUN is affected because both LUNs may be accessing the same disk drives and in fact there may be contention for the same data.

Snapshots are typically used in backup and other operations where the data must be “frozen” at a particular point in time. Snapshots are NOT used for data recovery because the snapshot is partially composed of the original data (meaning data on the source LUN) and if the source LUN becomes inaccessible, the snapshot will be inaccessible also.
Snapshots are provided on the CX500 storage system via EMC’s optional software package, SnapView. SnapView runs on the CX500 storage processors, and provides snapshot functionality for every server connected to the array. Since SnapView is located on the storage array and not a server in the SAN fabric, snapshots do not consume CPU cycles on the host servers, freeing them for processing. The CX500 supports up to 50 SnapView sessions and 150 snapshot LUNs.

**Clones**

Clones or BCV (Business Continuance Volumes) are a part of the SnapView product supplied on the CX500, and offer a more comprehensive replication solution that is useful for certain application and in certain situations.

Cloning differs from snapshots in the following ways:

- Clones are full copies of the source LUN – snapshots are composed of partial copies and a table of pointers.
- Clones are not instantaneous – the clone must complete synchronization with the source LUN before it can be used. Note that clones are, in a sense, point-in-time copies, but data is frozen when the clone is fractured, not when the cloning session begins. Clones affect performance of the source LUN only while synchronizing. Once a clone is fractured (disconnected) from the source, you can use a clone as an independent LUN with absolutely no impact on the source LUN.
- Clones do not share data with the source and can be located entirely on separate spindles.

Typical uses for clones include decision support systems where analysis must be done on the source data without affecting source LUN performance, and application development where multiple full copies of the data can be subjected to different test scenarios with full performance in each. Cloning is also used in boot-from-SAN scenarios where it is necessary to replicate system disks within the array.

On the CX500 storage system, cloning is provided via SnapView software and can also be achieved with volume management software such as Veritas Volume Manager. The advantages and disadvantages of host-based software discussed in the snapshot section also apply here. The CX500 supports up to 50 SnapView sessions and 150 snapshot LUNs.
Key Customer Benefits

The Dell/EMC CX 500 storage system impacts and benefits include:

Financial benefits

- Organizations can connect more servers and more storage to the Dell/EMC CX500 than with its predecessor meaning organizations can often spread the cost of the array over several departments lessening the expense to any single department. The CX500 can connect to 128 servers and can accommodate 120 hard drives.

Operational benefits

- MirrorView software provides a single, complete disaster recovery solution for every Dell/EMC-attached server platform and operating system.
- With EMC’s optional SnapView software, backup of the Dell/EMC CX500 is virtually non-disruptive to end users meaning organizations can maintain stated service levels on production data while streamlining back up procedures.

Business benefits

- Growth dynamics can cripple a business, but the Dell/EMC CX500 storage system with SnapView, MirrorView, and Navisphere Manager creates the scalable infrastructure to support your business now and in the future.
- As you gain customers, the information required to run your business grows at a staggering rate. The Dell/EMC CX500 provides a platform and functionality that will deliver that information where needed and when needed as fast as it is needed.

Service and Support

Dell Premier Enterprise Services is a broad portfolio of services designed to help organizations optimize their use of Dell/EMC technology, rapidly deploy systems, and attain the highest possible levels of system uptime.

Consulting and Deployment Services – Required Services

Dell SAN consulting and deployment services help to effectively plan for and optimize the implementation of a new SAN solution to meet unique storage goals.

Note: Required services help to ensure the best possible customer experience. Hardware installation and Gold-level support are included in the storage system’s price. SAN Implementation services are also mandatory services. Key SAN offerings include:
• **Pre-Sales Design & Site Readiness Assessment Service**
  Initial design session to identify and document storage configuration requirements in the Dell SAN Configuration Readiness Form (SCRF) and communicate technical/environmental requirements to the customer. The SCRF is used to plan for the initial installation and to document the user’s complete SAN design for reference in post-installation support from Dell’s Technical Support team.

• **SAN Implementation Service**
  SAN implementation begins with a comprehensive remote planning session to help ensure all technical and environmental requirements are communicated and met in advance of the component-level installation. Also included is a verification of overall site readiness and validation of the customer’s unique system configuration information. The on-site implementation includes:
  o SAN cabling and host connectivity based on the SAN
  o Configuration of switches and installation of agents on approved hosts
  o Software installation of Navisphere Agent, Navisphere Manager, and enabling of Access Logix for LUN access
  o Creation of LUNS, RAID Groups & Storage Groups
  o Product orientation session
  o Development of Component Level Design Document

• **Custom Design & Implementation Service**
  Comprehensive design and implementation for complex systems (16 or more hosts). This service includes the features of the SAN Implementation service and any other needed design and implementation deliverables to meet the customer’s requirements.

• **Hardware Installation**
  On-site installation of the Dell/EMC storage systems, rack mounting of systems, connection to power sources, and power-on of devices.

**Consulting and Deployment Services – Optional Services**

• **Customer Training**
  Variety of training courses, including Dell server and storage products, backup and restore, Storage Area Networks, clustering, and systems management software. Available on-site at your facility or within our Dell labs, Dell Technology Training is designed to equip system administrators with the skills needed to optimize your Dell investment from day one.

• **Proof-of-Concept at Dell Technology Solution Center**
  A secure, comprehensive lab where Dell can assist in analyzing
challenges, testing systems and determining solutions that are optimized for each unique business environment.

- **Back-up & Recovery Design & Implementation**
  Detailed analysis and/or implementation of Backup and utility software.

- **Cluster Implementation**
  Services to design and implement clustered Microsoft Exchange, Microsoft SQL Server, and Dell’s Fibre Channel Cluster kits.

- **SnapView Implementation**
  Installation and configuration of the SnapView application on pre-installed and configured Dell/EMC arrays. At the conclusion of this installation, Dell will conduct a demonstration of SnapView’s capabilities and all configuration settings.

- **MirrorView Implementation**
  Installation and configuration of the MirrorView application, including configuring MirrorView to operate on Dell/EMC arrays, testing the installation, and a product orientation session.

Dell/EMC systems come with a robust standard support program that includes Dell Gold-Level Premier Enterprise Support Service featuring:

- 7x24 High Level engineer- to- engineer telephone support with direct access to Gold Queue
- Technical Account Management Team managed escalations and reporting
- 7x24 4-Hour On-site Support
- Case management services through Enterprise Expert Center
- Remote Software & Storage Support – Unlimited Resolutions
- Storage System Remote Monitoring
- Ability to define your call priority
- Coordinated seamless support between Dell and key third party providers
- Change notification
- Optional upgrade for On-Site Troubleshooting, On-site-Engineers, On-site Parts, and customized Platinum-Level Support
- A three-year Limited Warranty
- 7x24 toll-free hardware technical phone support
- Extensive 7x24 E-support, online services
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