

Storage Solutions



Data protection and recovery solutions to keep business productive and responsive to dynamic business changes.



At a Glance

- Continuous data access
- Storage affordability
- Purpose-built
- Shorter time to value

Overview

The Need for Durable Data Protection

In today's 24x7 business environment, maintaining availability of critical business applications is paramount. Ten years ago the focus was on keeping sales transaction applications, ERP applications and other business applications running. Email, file systems, internal and external web sites, as well as CRM and stock trading systems have all become business critical. The key factors which explain the increased importance of application availability are:

- Cost: When critical applications are un-available, business stops!
- Competition: When applications are inaccessible, the competition takes advantage.
- Risk and cost of litigation: Organizations can get sued if transactions are lost, or if important transactions are prevented due to application non-availability.

The Need to Ensure High Availability for Corporate Data

In today's information-rich workplace, even basic corporate systems now house multiple terabytes of mission-critical information that must be readily accessed, updated, and backed up. With data becoming the paramount enterprise asset, the saying "Information is Power" has never been more appropriate and the impact of lost data has never been more damaging.

The key factors powering this trend include:

- Data volumes are exploding;
- Data value is increasing dramatically;
- Managing cost and complexity of on-line data stores is soaring;
- Re-creating data is error-prone and slow;
- Lost productivity from system downtime and inaccessible data is painful; and
- Data availability expectations are rising and justifiably so.

Solution

NEC has designed its storage solutions to improve data availability and reduce system operating cost. NEC's solutions approach is to bundle specific storage hardware and software purpose-created to address these objectives. With every bundled solution, we include remote installation service, which is intended to assure the best approach is taken to pre-installation planning, installation, post-installation review as well as provide system users with the education they need to maximize their productivity. Education is the essential ingredient to avoiding problems and it is also a great vehicle for enhancing the value delivered. Education ensures that system users are fully briefed on the hardware and software components included in their solutions.

NEC Storage Solutions: the Hardware & Software Components

	D3	D3i	D4
1. EFFICIENCY BUNDLE			
Hardware	Base Unit (Dual Controller)	Base Unit (Dual Controller)	Base Unit (Dual Controller)
	4GB Cache	4GB Cache	4GB Cache
	6 x 1TB SATA HDDs	6 x 1TB SATA HDDs	6 x 1TB SATA HDDs
	4 Ports (4Gbps FC)	4 Ports (1Gbps iSCSI)	4 Ports (8 Gbps FC)
Software	Storage Manager	Storage Manager	Storage Manager
	Dynamic Data Replication + DynamicSnap Volume	Dynamic Data Replication + DynamicSnap Volume	Dynamic Data Replication + DynamicSnap Volume
	Performance Monitor	Performance Monitor	Performance Monitor
	Performance Navigator	Performance Navigator	Performance Navigator
	Performance Optimizer	Performance Optimizer	Performance Optimizer
	Power Conserver	Power Conserver	Power Conserver
			Thin Provisioning
Installation	Remote	Remote	Remote
2. AVAILABILITY BUNDLE			
Hardware	2 x Base Unit (Dual Controller)	Base Unit (Dual Controller)	2 x Base Unit (Dual Controller)
	2 x 4GB Cache	4GB Cache	2 x 4GB Cache
	2 x 6 x 1TB SATA HDDs	6 x 1TB SATA HDDs	2 x 6 x 1TB SATA HDDs
	2 x 4 Ports (4Gbps FC)	4 Ports (1Gbps iSCSI)	2 x 4 Ports (8Gbps FC)
Software	Storage Manager	Storage Manager	Storage Manager
	Dynamic Data Replication + DynamicSnap Volume	Dynamic Data Replication + DynamicSnap Volume	Dynamic Data Replication + DynamicSnap Volume
	2 x Remote Data Replication	Replication Control SQL Option	2 x Remote Data Replication
	Replication Control SQL Option	Volume Protector	Replication Control SQL Option
	Volume Protector	Power Conserver	Volume Protector
	Power Conserver		Power Conserver
Installation	Remote	Remote	Remote

SAN Storage Hardware

The storage systems powering these solutions include NEC's D3 and D4 families of storage arrays.

D3 Array Family

The D3 array family supports both Fibre Channel and iSCSI SAN. NEC D3 storage arrays deliver compelling value by combining balanced performance, dependability, scalability, efficiency and reliability. The D3-10 SAN arrays are used by organizations for primary, high capacity secondary, or tiered storage infrastructure. D-Series arrays are well-suited for virtualized environments, cloud storage, databases, data warehouses, disk-to-disk backup, messaging, file storage, and other block-level storage applications.

D4 Array Family

The D4-30 SAN storage array delivers both high performance 8 Gbps Fibre Channel ports and cost-effective 10 Gbps iSCSI connectivity in the same system for use with VMware®, databases, and other block-storage applications. Simultaneous use SAS and SATA drives in the same enclosures to create tiered storage architecture.

SAN Storage Software

Storage Manager Software

NEC's Storage Manager software performs basic and advanced storage management functions. It is a browser-based interface that is used to control all aspects and functions of the D-series storage hardware. It can manage multiple arrays from a single point and there is nothing extra to install when additional software is added. When new functions are enabled, they are accessed, displayed, and controlled through the same familiar interface.

Path Manager

Path Manager enables multi-pathing for failover and load balancing. Up to 32 physical connections or logical data paths between a server and array provide higher reliability and performance. Clustered servers are also supported.

Performance Monitor

NEC's Performance Monitor storage software collects and accumulates information on the performance of the NEC storage systems and displays the performance level in real-time. When load exceeds a preset threshold level, a message or an icon is displayed for notification.

Performance Navigator

Performance Navigator enables fast and reliable analysis by providing performance information in an easily understandable form. With hundreds of performance metrics to choose from, Performance Navigator assists in quickly identifying potential bottlenecks and trends.

Performance Optimizer

Performance Optimizer identifies and eliminates performance bottlenecks caused by a disk pool hotspot – a concentrated I/O load on specific physical disks. The performance bottleneck is resolved fast because administrators do not have to perform troublesome and time-consuming performance analysis. Hotspot elimination is performed online without disrupting applications. Performance Optimizer can also be used to non-disruptively migrate volumes (LUNs) to a different tier of storage: move LUNs on SAS drives to SATA drives (and vice-versa) without bringing down the application.

Power Conserver

Power Conserver reduces power consumption by server-based scripting to power disk drives up when required and down when not. Power Conserver is particularly useful for disk-to-disk backup, when the backup disk target is only used during the backup window so the drives can be turned off during the rest of the day.

Dynamic Data Replication

Dynamic Data Replication creates a copy of a volume (LUN) within the same array. It can separate the volumes, restore the data to the original volume, as well as re-synchronize the volumes.

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