

# DAKOTA<sup>TM</sup> STOR-WP

DakotaStor-WP, powered by next generation Microsoft® Storage Server technology, is a cost-effective, versatile storage appliance that delivers seamless interoperability, solid reliability and simple-to-manage storage resources for heterogeneous network environments. Just attach it to your existing network and within minutes you can provide NAS shares and iSCSI targets to Windows, UNIX, Linux, and Macintosh clients. Gateway models enable you to provide NAS and iSCSI capability for existing SAN storage or design a scalable, highly available unified storage appliance. DakotaStor-WP is integrated with Windows Storage Server 2008, providing easy-to-manage file and block level storage, as well as print services from the one appliance at a low cost of ownership.

### Performance

DakotaStor-WP is built on a state-of-the-art server-class single or dual processor Intel® Xeon Series 5500 platform, featuring Intel Turbo Boost, Hyper-Threading, and QuickPath technologies for top performance in bandwidth intensive applications. A powerful SAS/SATA Hardware RAID controller with 512 MB of cache provides enterprise-level storage features and performance. DakotaStor-WP features up to four Gigabit Ethernet NICs with Intel I/O Acceleration Technology, which use features of Microsoft's Scalable Networking Pack to move data more efficiently through the processors for fast, reliable networking. Running a storage-optimized version of Windows Server 2008, DakotaStor-WP is 15-20% faster than a general purpose Windows 2008 Server in file serving.

### Reliability and Data Availability

DakotaStor-WP is integrated with best-of-breed components and is based on Windows Server 2008, a robust operating system that provides high reliability and security. Support for multiple RAID levels protects your data against disk failure while advanced RAID and hardware redundancy features provide for high data availability. RAID level 6 improves fault tolerance by implementing two parity drives, ensuring data availability in the unlikely event that two drives fail simultaneously or a drive fails during a rebuild. Windows Storage Server 2008 is a dedicated file and print server and has all functionality unrelated to file serving removed, increasing reliability and lowering CPU overhead. The Distributed File System (DFS) feature provides simplified, fault-tolerant access to files and WAN-friendly replication.



### FEATURES

- Windows Storage Server 2008
- NAS & iSCSI Storage
- SATA & SAS Disk Drives
- RAID levels 0, 1, 1E, 5, 5EE, 6, 10, 50, 60 and JBOD
- Intelligent Power Management
- Zero-Maintenance Cache Protection\*
- JBOD Expansion up to 96 Drives
- Unified Share and Storage Management
- Share & Storage Provisioning Wizards
- Storage Manager for SANs
- File Server Resource Manager
- Quota Management
- File Policy Management
- Data De-Duplication (SIS)
- Indexing Service
- DFS Replication
- Volume Shadow Copy Services (VSS)
- Shadow Copies for Shared Folders
- Windows Sharepoint® Services
- Print Manager Console
- Email Event Notification
- IPMI 2.0 Management with Dedicated LAN
- No Client Licenses
- Anti-Virus Support
- Redundant Hot Swap Components
- FC, SAS, SCSI, & iSCSI Connectivity Options
- Local Tape Backup Support
- Backup Application Support
- Backup Agent Support

\* Available on certain models



**STORAGE**

[www.amsstorage.com](http://www.amsstorage.com)

## Multi-Protocol NAS Connectivity

Because DakotaStor-WP is powered by Windows Server 2008, it is designed to exist in heterogeneous network environments and transfer data using industry standard file sharing protocols over industry standard network protocols. Therefore, clients can share storage resources, regardless of their operating environment. Cross platform NAS connectivity provides common storage resources and increased user productivity. iSCSI targets are accessible from clients running standard iSCSI software initiators and HBAs.

## iSCSI Software Target

Microsoft iSCSI Software Target enables you to implement an iSCSI SAN with storage provisioning and management capabilities. Managed via the Integrated Management Console, administrator's can create and manage iSCSI targets and iSCSI virtual disks, as well as schedule, export, and locally mount snapshots for use in backup and recovery operations. Wizards are provided to facilitate these features.

- **Virtual Disk Storage.** Disks created using iSCSI Software Target are iSCSI virtual disks, which are files in the virtual hard disk (VHD) format. These virtual disks offer flexible and effective storage. They are dynamically extendable to provide extra capacity on demand, enable efficient storage utilization, and minimize the downtime required to create and install new disks.
- **Hardware Providers.** To support advanced management of iSCSI virtual disks and snapshots, you can install the Virtual Disk Service (VDS) and Virtual Shadow Copy Service (VSS) hardware providers, provided with system.
- **Security.** The Microsoft iSCSI Software Target supports security protocols and configuration such as iSNS integration, IPv6, IPsec, and CHAP authentication.
- **Snapshots.** To facilitate backup and recovery operations, you can schedule and create snapshots of iSCSI virtual disks. Snapshots can be scheduled to be created automatically without stopping programs and can be mounted locally or exported to facilitate backup and recovery operations.
- **Replication.** Microsoft's iSCSI target LUNs are file-based virtual disks and are open files, therefore cannot be replicated using DFS Replication. The Double-Take replication option is required to replicate iSCSI LUNs. Double-Take's data replication technology combines continuous real-time backup and automatic failover capabilities for disaster recovery, high availability, and centralized backup. Double-Take can also be used as the replication engine for DakotaStor-WP NAS shares for single-pane replication management. For more information on Double-Take visit <http://www.doubletake.com/english/products/double-take-windows/Pages/default.aspx>

## Security

DakotaStor-WP features the tight enterprise-level security of Windows Server 2008 Full Active Directory support enables DakotaStor-WP to integrate seamlessly into a Windows enterprise network. Other authentication features include NT Domain Authentication (PDC) and Unix Network Information Services (NIS). DakotaStor-WP also integrates completely into Distributed File System (DFS) environments. The Microsoft iSCSI Software Target supports security protocols and configuration such as iSNS integration, IPv6, IPsec, and CHAP authentication.

## Manageability

The Windows Storage Server 2008 MMC-based management console enables administrators to perform the majority of storage management tasks from a central location. The Unified Share and Storage Management snap-in provides wizard-based provisioning of volumes, shared folders, and iSCSI targets, as well as the ability to configure quotas, file screening, Single Instance Storage, and indexing. DakotaStor-WP can be managed remotely via a web browser from Windows and non-Windows clients. A keyboard, mouse, and monitor (or KVM) is supported for local management. The "Out-of-Box Experience" incorporates a single configuration utility that starts automatically at logon, guiding administrators through the initial setup. And for common configuration tasks, administrators will have access to all the appropriate tools through the "Initial Configuration Tasks" interface.

An embedded Intelligent Management (IPMI 2.0) module with dedicated network port monitors onboard instrumentation such as temperature sensors, power status, voltages and fan speed, and provides remote power control capabilities to reboot and/or reset the appliance. It also includes remote access to the BIOS configuration and operating system console information via SOL (Serial over LAN) or embedded KVM over LAN capabilities. Because the IPMI controller is a separate processor, the monitoring and control functions work regardless of CPU operation or system power-on status.

## Configuration and Scalability

DakotaStor-WP features high performance SATA or SAS disk drives in multiple RAID configurations, providing the flexibility you need to fit your price, performance and data protection requirements. External SAS RAID ports provide scalability up to 104 SAS or SATA drives via JBOD expansion modules. The JBOD expansion modules connect directly to the RAID controller external SAS ports for increased reliability and performance. A flexible design with multiple PCI expansion slots enables you add Fibre Channel, SAS, SCSI, and iSCSI HBAs for direct attached storage and SAN connectivity.

## Intelligent Power Management

Adaptec Intelligent Power Management (IPM) reduces power and cooling costs by up to 70% using intelligent I/O caching combined with disk drive power savings modes. The three levels of disk drive power modes are: 1) Normal operation - full power, full RPM, 2) Standby - low-power mode spins disks at lower RPM, and 3) Power-off - disks not spinning.

## Zero-Maintenance Cache Protection

Adaptec's Zero-Maintenance Cache Protection, available on most models, is a revolutionary advancement that solves battery deficiencies by providing full cache protection with no installation, monitoring, maintenance, or replacement costs. Featuring 4 GB of NAND flash memory paired with super capacitor technology, DakotaStor-WP RAID controllers with Zero-Maintenance Cache Protection instantly save cache contents in the event of system power loss. The super capacitor charges instantly while the system is booting, cache protection is available within minutes of installation, and stored data is preserved for up to 10 years. And, since it is flash-based, systems don't need to be shut down for battery replacement. See model chart for availability.



## Distributed File System (DFS)

The Distributed File System (DFS) solution in Windows Storage Server 2008 provides simplified, fault-tolerant access to files and WAN-friendly replication. Distributed File System consists of two technologies:

- **DFS Namespaces.** Formerly known as Distributed File System, DFS Namespaces allows administrators to group shared folders located on different servers and present them to users as a virtual tree of folders known as a namespace. A namespace provides numerous benefits, including increased availability of data, load sharing, and simplified data migration.
- **DFS Replication.** The successor to File Replication service (FRS), DFS Replication is a new state-based, multimaster replication engine that supports scheduling and bandwidth throttling. DFS Replication uses a new compression algorithm known as Remote Differential Compression (RDC). RDC is a protocol that can be used to efficiently update files over a limited-bandwidth network. RDC detects insertions, removals, re-arrangements of data in files, enabling DFS Replication to replicate only the deltas (changes) when files are updated.

## Unified Share and Storage Management

With the Share and Storage Management snap-in, you can easily set up and manage shared folders and storage. Share and Storage Management provides the following:

- MMC-based management of shared folders, storage, and iSCSI targets.
- Provision Storage Wizard for creating and configuring storage, including creating a LUN and formatting a volume.
- Provision a Shared Folder Wizard for creating and configuring shared folders that can be accessed using either the SMB or NFS protocol.

This makes it possible to complete most of the administrative tasks required to create and manage shared folders, volumes, and iSCSI targets, configure Single Instance Storage (SIS), configure quotas, configure file screening, and enable indexing from a single management point.

## File Server Resource Manager

File Server Resource Manager provides a suite of tools for administrators to understand, control, and manage the quantity and type of data stored on their servers. File Server Resource Manager enables you to place quotas on folders and volumes, actively screen files, and generate comprehensive storage reports.

## Storage Management for SANs

Storage Manager for SANs helps you create and manage logical unit numbers (LUNs) on Fibre Channel and iSCSI disk drive subsystems in your storage area network (SAN). Storage Manager for SANs can be used on storage subsystems that support Virtual Disk Service (VDS). Use Storage Manager for SANs to create and assign LUNs, manage connections between LUNs and the servers in your SAN, and set the security properties for iSCSI storage subsystems. Available in Standard and Enterprise editions.

## Indexing Service

Indexing Service extracts the information from a set of documents and organizes it in a way that makes it quick and easy to access that information through the Search function for computers running Microsoft Windows 2000, XP, or Vista. This information can include text from within a document (its contents), and the characteristics and parameters of the document (its properties), such as the author's name. Once the index is created you can query the index for documents that contain key words, phrases, or properties.

## Single Instance Storage

Single Instance Storage (SIS) is a data de-duplication technology that recovers disk space by reducing the amount of redundant data stored on a volume by identifying identical files, storing only a single copy of the file in the SIS common store and replacing the files with pointers to the file in the SIS common store. Available in Standard and Enterprise editions.

## Print Management

Print Management enables you to view and manage printers and print servers in your organization. You can use Print Management to manage all network printers on print servers running Windows 2000/2003/2008 Server.

## Volume Shadow Copy Service (VSS)

System administrators can use point-in-time shadow copy technologies to make up to 512 snapshots per volume (of which 64 are reserved for Shadow Copies for Shared Folders) using applications that have a VSS requestor. These shadow copy backups are available for rapid restores should the need arise. Unlike tape backups which can take hours to restore, these shadow copy backups can be restored in minutes. The end user can also benefit from point in time imaging technologies, using the Shadow Copies for Shared Folders (SCSF) feature. SCSF enables users to restore accidentally deleted or overwritten files or entire folders without the need for IT intervention. A maximum of 64 SCSF per volume can be created.

## Windows SharePoint® Services

Microsoft Windows SharePoint Services is a powerful Web-based team collaboration environment that is included in Windows Storage Server 2008. Windows SharePoint Services provides an integrated portfolio of collaboration and communication services designed to connect people, information, processes, and system both within and beyond the organizational firewalls.

## Antivirus Support

Windows Storage Server 2008 is built upon the Windows Server family of operating systems, therefore you can benefit from the increased security provided by existing antivirus software from a variety of supported Microsoft partners.

## System Recovery

DakotaStor-WP features an on-disk operating system recovery image for simple recovery to factory default settings. A system recovery DVD or USB stick is also included for bare-metal operating system recovery.

## Total Cost of Ownership

DakotaStor-WP enables you to reduce your total cost of ownership by ensuring fast deployment, seamless network interoperability, high uptime, low administration and no client license costs. By combining multiple storage technologies into one hardware platform and one management interface, DakotaStor-WP appliances reduce the cost of hardware, management, training, power, rack space, and support.

For more information about Windows Storage Server 2008, visit <http://www.microsoft.com/windowsserver2008/en/us/WSS08.aspx>



### Pre-Installed Software

#### Microsoft Windows Server 2008

Windows Server 2008 NAS Optimized Operating System with iSCSI Target support and enhanced management tools.

#### Microsoft Services for Network File System (NFS)

Services for Network File System (NFS) is a set of services that integrates with Windows Server 2003 to allow UNIX-based NFS clients to access resources on Windows Storage Servers without having to explicitly sign on to the Windows domain.

#### Microsoft Backup

Microsoft Backup enables administrators to backup files to a local tape drive.

#### Microsoft iSCSI Software Target

Microsoft iSCSI Software Target option enables you to implement an iSCSI SAN with storage provisioning and management capabilities. Managed via the Microsoft Management Console, administrator's can create and manage iSCSI targets and iSCSI virtual disks, as well as schedule, export, and locally mount snapshots for use in backup and recovery operations. Wizards are provided to facilitate these features.

#### Double-Take® (Option)

Double-Take's data replication technology combines continuous real-time backup and automatic failover capabilities for disaster recovery, high availability, and centralized backup. Double-Take is required for replication of Microsoft iSCSI Software Targets.

### Management

- Windows Remote Desktop
- Windows Remote Desktop via Web
- Local via Keyboard & Mouse
- KVM & KVM over LAN
- Dynamic Volume Manager
- SNMP Support
- Email Alert Notification
- System and Security Logs
- System Health Monitoring
- IPMI 2.0 with Dedicated LAN

### File Sharing Protocols

- CIFS/SMB, NFS, FTP, HTTP, & WebDAV

### NIC Teaming Options

- Link Aggregation
- Load Balancing
- Failover

### Security Features

- File Level Access Control Lists
- Local User/Group Database
- Microsoft Active Directory Services (ADS)
- Microsoft NT Domain Controller (PDC)
- Unix Network Information Services (NIS)
- Supports Kerberos Version 5.0
- Supports NTLM v2 Authentication
- RAID Protected OS

### RAID Features

- RAID levels 0, 1, 1E, 5, 5EE, 6, 10, 50, 60 and JBOD
- Zero-Maintenance Cache Protection\*
- Quick initialization
- Online capacity expansion
- Copyback hot spare
- Dynamic caching algorithm
- Native Command Queuing (NCQ)
- Background initialization
- RAID level migration
- Hot spares - global, dedicated, and pooled
- Automatic/manual rebuild of hot spares
- Configurable stripe size
- S.M.A.R.T. support
- Multiple arrays per disk drive
- Dynamic sector repair
- Staggered drive spin-up
- Optimized disk utilization

\* Available on certain models (See model chart)

### JBOD Expansion

- Xyratex 1603 EBOD
- Promise VTJ610sS & VTJ310sS

\*Call AMS Sales for compatibility with other JBODs

### Microsoft Windows Storage Server 2008 Editions

Description	Workgroup	Standard	Enterprise
<b>HARDWARE</b>			
Architecture	x64	x64	x64
CPU Sockets	Up to 4	Up to 4	Up to 8
Max Random Access Memory (RAM)	Up to 32 GB	Up to 32 GB	Up to 2 TB
NIC Support	2	Unlimited	Unlimited
Disks (number / interfaces / RAID type)	4 / Any / Any	Any / Any / Any	Any / Any / Any
<b>FILE AND PRINT SERVER FEATURES</b>			
Server Message Block (SMB) Connections	50	Unlimited	Unlimited
NFS	✓	✓	✓
Print Services	✓	✓	✓
DFS Replication	✓	✓	✓
File Server Resource Manager (FSRM)	✓	✓	✓
Single Instance Storage (SIS)	No	✓	✓
Clustering	No	No	✓
DHCP Server	✓	✓	✓
Search	✓	✓	✓
DFS-N, WS-Man, WMI, Server Backup, BitLocker	✓	✓	✓
Microsoft iSCSI Software Target	✓	✓	✓

### DakotaStor-WP Gateway Specifications

	DSW1200QG	DSW2200QG
<b>O/S VERSION</b>	Windows Storage Server 2008 Standard (64 Bit) (Upgradeable to Enterprise)	Windows Storage Server 2008 Standard (64 Bit) (Upgradeable to Enterprise)
<b>iSCSI SOFTWARE TARGET</b>	Included	Included
<b>PROCESSOR</b>	1 x Xeon 5520, 2.26 GHz (Upgradeable to 2 x 2.4 GHz CPUs)	1 x Xeon 5520, 2.26 GHz (Upgradeable to 2 x 2.4 GHz CPUs)
<b>MEMORY</b>	6 GB installed (32 GB Max)	6 GB installed (32 GB Max)
<b>DRIVE TYPE</b>	SAS & SATA	SAS & SATA
<b>HOT SWAP MIRRORED O/S DRIVES</b>	2	2
<b>ADDITIONAL DRIVE BAYS</b>	6	6
<b>RAID CONTROLLER</b>	Adaptec Series 5Z	Adaptec Series 5Z
<b>RAID CACHE PROTECTION</b>	Zero Maintenance Cache	Zero Maintenance Cache
<b>RAID LEVELS</b>	Factory Default RAID-1	Factory Default RAID-1
<b>INTEGRATED LAN</b>	2 – GbE with Intel I/O Acceleration 3 (Upgradeable to 4, does not use PCIe Expansion Slot)	4 – GbE with Intel I/O Acceleration 3
<b>External SAS Ports</b>	Option	Option
<b>External SCSI Ports</b>	Option	Option
<b>External FC Ports</b>	Option	Option
<b>External iSCSI HBA Ports</b>	Option	Option
<b>PCI Expansion Slots</b>	1 – PCIe 8	2 – PCIe 8x LP; 1 – PCIe 4x LP
<b>Floppy Drive</b>	Optional	Optional
<b>OPTICAL DRIVE</b>	CD/DVD-ROM	DVD-R
<b>USB PORTS</b>	4 – USB 2.0 (Rear)	2 – USB 2.0 (Rear) 2 – USB 2.0 (Front)
<b>SERIAL PORTS</b>	1 (Rear)	1
<b>IPMI 2.0 WITH DEDICATED LAN</b>	Included	Included
<b>COOLING FANS</b>	4	3 – Hot Swap
<b>POWER SUPPLY</b>	650W Redundant	720W Redundant
<b>DIMENSIONS HxWxD (IN.)</b>	1.7 x 17.2 x 25.6	3.5 x 17.2 x 25.5
<b>OPERATING TEMPERATURE</b>	10°C to 35°C	10°C to 35°C
<b>OPERATING RELATIVE HUMIDITY</b>	8% to 90%	8% to 90%

### DakotaStor-WP Appliance Rack Specifications

	DSW100Q	DSW1000Q DSW1000QF	DSW2200Q	DSW2200E	DSW3200E	DSW4200A
<b>O/S VERSION</b>	Windows Storage Server 2008 Standard (64 Bit) (Workgroup Models Available)	Windows Storage Server 2008 Standard (64 Bit)	Windows Storage Server 2008 Standard (64 Bit)	Windows Storage Server 2008 Standard (64 Bit)	Windows Storage Server 2008 Standard (64 Bit)	Windows Storage Server 2008 Standard (64 Bit)
<b>iSCSI SOFTWARE TARGET</b>	Included	Included	Included	Included	Included	Included
<b>PROCESSOR</b>	1 x Xeon 5502, 1.86 GHz (Upgradeable to 2.26 GHz)	1 x Xeon 5504, 2.0 GHz (Upgradeable to 2 x 2.4 GHz CPUs)	1 x Xeon 5520, 2.26 GHz (Upgradeable to 2 x 2.4 GHz CPUs)	1 x Xeon 5520, 2.26 GHz (Upgradeable to 2 x 2.4 GHz CPUs)	1 x Xeon 5520, 2.26 GHz (Upgradeable to 2 x 2.4 GHz CPUs)	2 x Xeon 5520, 2.26 GHz (Upgradeable to 2.4 GHz)
<b>INSTALLED MEMORY</b>	2 GB	2 GB	4 GB	4 GB	6 GB	6 GB
<b>MAX MEMORY</b>	12 GB	32 GB	32 GB	32 GB	32 GB	32 GB
<b>DRIVE TYPE</b>	SATA	SAS & SATA	SAS & SATA	SAS & SATA	SAS & SATA	SAS & SATA
<b>O/S DRIVES*</b>	100 GB Partition of a 4-Drive RAID-5	100 GB Partition of a 4-Drive RAID-5	100 GB Partition on 2 RAID-1 Mirrored Drives (Excess capacity of RAID-1 available for data)	100 GB Partition on 2 RAID-1 Mirrored Drives (Excess capacity of RAID-1 available for data)	100 GB Partition on 2 RAID-1 Mirrored Drives (Excess capacity of RAID-1 available for data)	100 GB Partition on 2 RAID-1 Mirrored Drives (Excess capacity of RAID-1 available for data)
<b>HOT SWAP DATA DRIVES</b>	4 (OS and Data)	4 (OS and Data)	6	10	14	22
<b>RAID CONTROLLER</b>	Adaptec Series 3	Adaptec Series 5Z	Adaptec Series 5Z	Adaptec Series 5Z	Adaptec Series 5Z	Adaptec Series 5
<b>RAID CACHE PROTECTION</b>	Optional Battery	Zero Maintenance Cache	Zero Maintenance Cache	Zero Maintenance Cache	Zero Maintenance Cache	Battery
<b>RAID LEVELS*</b>	Factory Default RAID-5	Factory Default RAID-5	0, 1, 1E, 5, 5EE, 6, 10, 50, 60 & JBOD	0, 1, 1E, 5, 5EE, 6, 10, 50, 60 & JBOD	0, 1, 1E, 5, 5EE, 6, 10, 50, 60 & JBOD	0, 1, 1E, 5, 5EE, 6, 10, 50, 60 & JBOD
<b>SAS RAID EXPANSION PORTS</b>	None	1 (SFF-8088) (Upgradeable to 3)	1 (SFF-8088) (Upgradeable to 3)	1 (SFF-8088) (Upgradeable to 3)	1 (SFF-8088) (Upgradeable to 3)	1 (SFF-8088) (Upgradeable to 3)
<b>JBOD EXPANSION</b>	None	Up to 80 Drives per Port (5 x 16 Bay JBODs) (Up to 240 Drives with 2 Additional Expansion Ports plus 10 x 16 Bay JBODs)	Up to 80 Drives per Port (5 x 16 Bay JBODs) (Up to 240 Drives with 2 Additional Expansion Ports plus 10 x 16 Bay JBODs)	Up to 80 Drives per Port (5 x 16 Bay JBODs) (Up to 240 Drives with 2 Additional Expansion Ports plus 10 x 16 Bay JBODs)	Up to 80 Drives per Port (5 x 16 Bay JBODs) (Up to 240 Drives with 2 Additional Expansion Ports plus 10 x 16 Bay JBODs)	Up to 80 Drives per Port (5 x 16 Bay JBODs) (Up to 240 Drives with 2 Additional Expansion Ports plus 10 x 16 Bay JBODs)
<b>INTEGRATED LAN</b>	2 – GbE	2 – GbE with Intel I/O Acceleration 3 (Option for 4)	4 – GbE with Intel I/O Acceleration 3	4 – GbE with Intel I/O Acceleration 3	4 – GbE with Intel I/O Acceleration 3	4 – GbE with Intel I/O Acceleration 3
<b>External SAS Ports</b>	N/A	Option to add 2 Ports	Option to add 2 Ports	Option to add 2 Ports	Option to add 2 Ports	Option to add 2 Ports
<b>External SCSI Ports</b>	N/A	Options for Single or Dual Ports	Options for Single or Dual Ports	Options for Single or Dual Ports	Options for Single or Dual Ports	Options for Single or Dual Ports
<b>PCI Expansion Slots</b>	N/A	1 – PCIe 8x	2 – PCIe 8x LP 1 – PCIe 4x LP	2 – PCIe 8x LP 1 – PCIe 4x LP	2 – PCIe 8x LP 1 – PCIe 4x LP	2 – PCIe 8x LP 1 – PCIe 4x LP
<b>Floppy Drive</b>	Optional	None	Optional	None	Optional	None
<b>OPTICAL DRIVE</b>	CDR/DVD-ROM	CDR/DVD-ROM	DVD-R	None	DVD-R	DVD-R in Rear
<b>USB PORTS</b>	2 – USB 2.0	4 – USB 2.0 (Rear)	2 – USB 2.0 (Rear)	2 – USB 2.0 (Rear)	2 – USB 2.0 (Rear) 2 – USB 2.0 (Front)	2 – USB 2.0 (Rear)
<b>SERIAL PORTS</b>	1 – (Rear)	1 – (Rear)	1 – (Rear)	1 – (Rear)	1 – (Rear); 1 – (Front)	1 – (Rear)
<b>IPMI 2.0 WITH DEDICATED LAN</b>	Included	Included	Included	Included	Included	Included
<b>COOLING FANS</b>	5	5	3 – Hot Swap	3 – Hot Swap	5 – Hot Swap	5 – Hot Swap
<b>POWER SUPPLY</b>	1 – 280W	650W Redundant F Model: 560W Fixed	720W Redundant	800W Redundant	800W Redundant	1200W Redundant
<b>DIMENSIONS H x W x D (in.)</b>	1.7 x 17.2 x 19.8	1.7 x 17.2 x 25.6	3.5 x 17.2 x 25.5	3.5 x 17.2 x 25.5	5.2 x 17.2 x 25.5	7 x 17.2 x 26
<b>OPERATING TEMPERATURE</b>	10°C to 35°C	10°C to 35°C	10°C to 35°C	10°C to 35°C	10°C to 35°C	10°C to 35°C
<b>OPERATING RELATIVE HUMIDITY</b>	8% to 90%	8% to 90%	8% to 90%	8% to 90%	8% to 90%	8% to 90%

\* Custom configurations available.

### DakotaStor-WP Appliance Tower Specifications

	DSW400Q	DSW800Q	DSW8200Q
O/S VERSION	Windows Storage Server 2008 Standard (64 Bit) (Workgroup Models Available)	Windows Storage Server 2008 Standard (64 Bit)	Windows Storage Server 2008 Standard (64 Bit)
iSCSI SOFTWARE TARGET	Included	Included	Included
PROCESSOR	1 x Xeon 5502, 1.8 GHz (Upgradeable to 2.26 GHz)	1 x Xeon 5504, 2.0 GHz (Upgradeable to 2 x 2.4 GHz CPUs)	1 x Xeon 5520, 2.26 GHz (Upgradeable to 2 x 2.4 GHz CPUs)
INSTALLED MEMORY	2 GB	2 GB	4 GB
MAX MEMORY	12 GB	12 GB	32 GB
DRIVE TYPE	SATA	SATA	SAS & SATA
O/S DRIVES*	100 GB Partition of a 4-Drive RAID-5	100 GB Partition of a 4-Drive RAID-5	100 GB Partition on 2 RAID-1 Mirrored Drives (Excess capacity of RAID-1 available for data)
HOT SWAP DATA DRIVES	4 (OS and Data)	4 (OS and Data) with 4 Expansion Bays	6
RAID CONTROLLER	Adaptec Series 3	Adaptec Series 3	Adaptec Series 5Z
RAID CACHE PROTECTION	Optional Battery	Optional Battery	Zero Maintenance Cache
RAID LEVELS*	Factory Default RAID-5	Factory Default RAID-5	0, 1, 1E, 5, 5EE, 6, 10, 50, 60 & JBOD
SAS RAID	None	1 (Upgradeable to 3)	1 (Upgradeable to 3)
JBOD EXPANSION	None	Yes – Up to 80 Drives (240 with RAID Expansion Ports)	Up to 80 Drives (240 with RAID Expansion Ports)
INTEGRATED LAN	2 – GbE	2 – GbE	4 – GbE with Intel I/O Acceleration 3
External SAS Ports	Option to add 2 Ports	Option to add 2 Ports	Option to add 2 Ports
External SCSI Ports	Options for Single or Dual Ports	Options for Single or Dual Ports	Options for Single or Dual Ports
PCI Expansion Slots	2 – PCIe 8x LP 1 – PCIe 4x LP	2 – PCIe 8x LP 1 – PCIe 4x LP	2 – PCIe 8x LP 1 – PCIe 4x LP
Floppy Drive	Optional	Optional	Optional
OPTICAL DRIVE	DVD-R	DVD-R	DVD-R
USB PORTS	2 – USB 2.0 (Rear) 2 – USB 2.0 (Front)	2 – USB 2.0 (Rear) 2 – USB 2.0 (Front)	2 – USB 2.0 (Rear) 2 – USB 2.0 (Front)
SERIAL PORTS	1	1	1
IPMI 2.0 WITH DEDICATED LAN	Included	Included	Included
COOLING FANS	2	6 – Hot Swap	5 – Hot Swap
POWER SUPPLY	1 – 650W Fixed	1 – 650W Fixed	800W Redundant
POWER SUPPLY	1 – 650W Fixed	1 – 650W Fixed	800W Redundant
RACK KIT OPTION	No	Yes	Yes
DIMENSIONS HxWxD (IN.)	16.8 x 7 x 20.9	17.8 x 7 x 25.5	17.2 x 7 x 25.5
OPERATING TEMPERATURE	10°C to 35°C	10°C to 35°C	10°C to 35°C
OPERATING RELATIVE HUMIDITY	8% to 90%	8% to 90%	8% to 90%

### Warranty & Support

#### DakotaStor-WP ships with:

- 3 year advance replacement for defective field components
- 9 x 5 toll-free technical support

#### Warranty uplifts are available for:

- 9 x 5 Call Center with NBD onsite
- 24 x 7 Call Center with NBD onsite
- 24 x 7 Call Center with 4 hour onsite (requires spares kit)

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