IBM System Storage 7216 Model 1U2 Multi-Media Enclosure - New tape and RDX drives

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At a glance

The IBM® System Storage® 7216 Multi-Media Enclosure (Model 1U2) attaches to specific IBM POWER® BladeCenter® models.

The two bays available on the IBM 7216 Model 1U2 rack mount enclosure can accommodate the following media devices:

- DAT160 80 GB SAS and USB Tape Drives -- Up to two drives
- Half-high LTO™ Ultrium™ 5 1.5 TB SAS Tape Drive -- Up to two drives
- DVD-RAM SAS Optical Drive -- Up to four drives
- RDX removable USB disk drives -- Up to two drive docking stations

Overview

The IBM System Storage 7216 Multi-Media Enclosure Models 1U2 offers SAS and USB electronic interface options to accommodate up to two tape drives, two RDX removable HDD docking stations, or four DVD-RAM drives. The 7216 delivers external tape, removable disk drive, and DVD-RAM drive options that allow data transfer with similar archival storage and retrieval technologies already installed in existing IT facilities. The 7216 offers an expansive list of drive feature options.

This announcement introduces two additional drive options:

- DAT160 80 GB Tape with a USB Interface
- 1.0 TB RDX Removable Disk Drive

A list of all 7216 features includes:

- DAT160 80 GB TAPE DRIVES with SAS or USB Interface options and a Data Transfer rate of up to 24 MB/sec. The DAT160 drive is read-write compatible with DAT160, DAT72, and DDS4 data cartridges
- HALF-HIGH LTO ULTRIUM 5 1.5 TB SAS TAPE DRIVE with Data Transfer rate of up to 280 MB/sec. Read-write compatible with LTO Ultrium 5 and LTO Ultrium 4 data cartridges, and read-only compatible with Ultrium 3 data cartridges
- DVD-RAM: 9.4 GB SAS Slim Optical Drive with SAS interface option, and is compatible with most standard DVD disks
- RDX removable disk drives: The RDX docking station is compatible with most RDX removable disk drive cartridges. The 7216 model offers the following RDX removable drive capacity options:
  - 160 GB
  - 500 GB
  - 1.0 TB

Removable RDX drives are in a ruggedized cartridge that inserts in a RDX removable (USB) disk docking station (feature number 1103). RDX drives are compatible with docking stations installed internally in IBM POWER7® servers.

The 7216 model offers Customer Replaceable Unit (CRU) maintenance service to help make installation or replacement of new drives efficient. Other 7216 Model 1U2 components are also designed for CRU maintenance.

The 7216 drive features attach to an IBM POWER6® or POWER7 System port, or to IBM PS703 and IBM PS704 BladeCenters using either an external SAS USB or cable that is provided with each tape drive, DVD-RAM, or RDX drive feature ordered.

Each USB device in 7216 model may be attached to available USB server ports.

Each 7216 SAS device may be attached individually to an IBM POWER6 or POWER7 Server, or to a BladeCenter Model IBM PS703 or PS704 through SAS Host Bus Adapter (HBA) port. Or up to four 7216 SAS devices may be attached to a single POWER Server SAS HBA port using a one-to-four Quad External SAS Cable (feature number 5544) available only on IBM POWER6 and IBM POWER7 systems.

**Planned availability date**

November 18, 2011

**Description**

IBM System Storage 7216 Multi-Media Enclosure has two bays designed to accommodate up to two tape drives, two RDX removable HDD docking stations, or four DVD-RAM drives. The 7216 attaches to most IBM POWER6 and POWER7 servers and IBM PS703 and IBM PS704 BladeCenter models. The initial order for the 7216 Multi-Media Enclosure must include at least one of the following drive features.

**RDX removable disk drive docking station** (feature number 1103)

The RDX removable disk drive docking station accommodates a 160 GB, 500 GB, or 1.0 TB removable disk drive or data cartridge. The disks are in a protective rugged enclosure that plug into the docking station.

Listed RDX Removable drive capacities are uncompressed. Typical RDX compression is 2X. Compression/decompression is provided by the AIX® or Linux™ operating system, not the drive itself. RDX technology is not supported on an IBMi operating system.

The docking station holds one removable rugged disk drive or data cartridge at a time. The rugged removable disk cartridge and docking station backs up information similar to tape drives. The RDX docking station interface is USB level 2.0. Industry standard RDX removable disk drive may be installed in the RDX docking station. The RDX removable disk docking station feature includes a half-high drive latch, a USB interface assembly, and an external USB cable.

A docking station with an RDX removable disk drive or data cartridge can be an excellent alternative to DAT160 and LTO5 tape drives and cartridges. At least one of the three RDX removable disk drive cartridges (feature numbers 1106, 1107, and EU01) must be specified with each docking station feature order.
**DVD Sled with DVD-RAM SAS Drive** (feature number 1420)

This Drive Sled feature allows the installation of two slim-height DVD optical drives in a single bay of the 7216 Storage Enclosure. Included in this feature is one DVD-RAM optical drive, a DVD-RAM test disk, a half-high drive latch, two slim latches, a slim blank, a drive sled with the (SATA to SAS) redriver card, a SAS interface assembly, and an external SAS cable. A second DVD-RAM drive (feature number 1422) drive may be added to the drive slot in the DVD Sled feature by removing the DVD blank panel.

**DVD-RAM Slim SAS Optical Drive** (feature number 1422)

Included with this feature are one DVD-RAM optical drive, a DVD-RAM test disk, a SATA re-driver card, a SAS interface assembly, and an external SAS cable. The DVD-RAM Slim Optical Drive can read and write on 4.7 GB and 9.4 GB DVD-RAM media. The DVD-RAM uses only bare media to help reduce media costs and is also read compatible with multi-session CD, CD-RW, CD recordable, and 2.6 GB and 5.2 GB DVD-RAM media.

**Note:** Disk physical capacity options are 2.6 GB and 4.7 GB per side. The 5.2 GB and 9.4 GB physical capacities may be achieved by using double-sided DVD-RAM disks.

**DAT160 SAS Tape Drive** (feature number 5619)

This tape drive provides physical storage capacity of up to 80 GB (160 GB with 2:1 compression) per data cartridge, and is designed to achieve a data rate of up to 12.0 MB/sec (24.0 MB/sec with compression). It is designed to provide read-write compatibility with DAT160, DAT72, and DDS4 media formats.

The DAT160 SAS tape drive feature includes a test cartridge, a cleaning cartridge, a half-high drive latch, a SAS interface assembly, and an external SAS cable.

**DAT160 USB Tape Drive** (feature number EU16)

This tape drive provides physical storage capacity of up to 80 GB (160 GB with 2:1 compression) per data cartridge, and is designed to achieve a data rate of up to 12.0 MB/sec (24.0 MB/sec with compression). It is designed to provide read-write compatibility with DAT160, DAT72, and DDS4 media formats.

The DAT160 USB tape drive feature includes a test cartridge, a cleaning cartridge, a half-high drive latch, a USB interface assembly, and an external USB cable.

Media used in the 7216 DAT160 SAS and USB Tape Drive features are compatible with DAT160 tape drives installed in the IBM 7214 Tape and DVD Storage Enclosure, and DAT160 drives installed internally in IBM POWER6 and POWER7 servers.

**IBM PS703 and IBM PS704 BladeCenter Install** (feature number 9000)

This feature is for administrative purposes and must be used to specify 7216 attachment to IBM PS703 and IBM PS704 BladeCenters. Specifying feature number 9000 helps to avoid ordering 7216 features that are not available on IBM Blade systems.

**Half-high LTO Ultrium 5 SAS Tape Drive** (feature number 8247)

The Half-high LTO Ultrium 5 feature has a native capacity of up to 1.5 TB (3.0 TB with 2:1 compression).

It also provides read-write compatibility with Ultrium 5 and Ultrium 4 media formats, and read-only compatibility with Ultrium 3 media formats.

The half-high LTO Ultrium 5 SAS tape drive feature includes a test cartridge, a cleaning cartridge, a half-high drive latch, a SAS interface assembly, and an external SAS cable.
The HHLTO5 tape drive feature on IBM System Storage 7216 Multi-Media Enclosure supports data encryption on the base drive with media meeting LTO consortium specifications and Application Managed Encryption (IEEE P1619.1-2007 compliant AES-GCM 256 bit encryption algorithm). Data encryption is performed after data compression.

Media used in half-high LTO Ultrium 5 1.5 TB SAS Tape Drives is compatible with HHLTO5 tape drives installed in the IBM TS2250 External Tape Drive, in IBM TS2900, TS3100, and TS3200 Tape Libraries and HHLTO5 Tape Drives installed internally in IBM POWER6 and POWER7 servers.

**Note:** Performance on the tape drive features 5619, EU16, and 8247 offered in the 7216 Multi-Media Enclosure may be limited by other components of the system. The actual degree of compression achieved is sensitive to the characteristics of the data that is being compressed.

**Accessibility by people with disabilities**

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at http://www.ibm.com/able/product_accessibility/index.html

**Reference information**

DAT320 SAS Tape Drive (feature number 1402) and DAT320 USB Tape Drive (feature number 5673) are also compatible drive features for the 7216 Multi-Media Enclosure. Feature numbers 1402 and 5673 are no longer available but may already be installed in a 7216 previously purchased.

For more information on these drives, refer to the following announcements:

- Hardware Announcement ZG10-0297, dated August 17, 2010
- Hardware Announcement ZG10-0413, dated November 16, 2010
- Hardware Announcement ZG11-0095, dated April 12, 2011

**Product number**

<table>
<thead>
<tr>
<th>Description</th>
<th>Machine type</th>
<th>Model</th>
<th>Feature</th>
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<tr>
<td>Multi-Media Enclosure</td>
<td>7216</td>
<td>1U2</td>
<td>EU01</td>
</tr>
<tr>
<td>1.0 TB removable RDX Drive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAT160 USB Tape Drive</td>
<td></td>
<td></td>
<td>EU16</td>
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**Publications**

The following publication will be available on November 18, 2011. To order, contact your IBM representative.

<table>
<thead>
<tr>
<th>Title</th>
<th>Order number</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>7216 Model 1U2 Multi-Media Enclosure Setup, Operator and Service Guide (English)</td>
<td>SA23-2271</td>
<td>46C1679</td>
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systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access. The IBM Systems Information Center is at


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http://www.ibm.com/shop/publications/order

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- Select a country/region/language to begin
- Then click on "Search for publications"
- Type in the "Publication number" and click "Go"

The following publications addressing these new features will be available on November 18, 2011.

<table>
<thead>
<tr>
<th>Title</th>
<th>Order number</th>
<th>Part number</th>
</tr>
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<tr>
<td>7216 Model 1U2 Multi-Media Enclosure Setup, Operator and Service Guide (English)</td>
<td>SA23-2271</td>
<td>46C1679</td>
</tr>
<tr>
<td>7216 model Safety Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7216 model Warranty Information</td>
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</tr>
</tbody>
</table>

**Services**

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http://www.ibm.com/services/continuity

For details on education offerings related to specific products, visit


Select your country, and then select the product as the category.
Technical information

Specified operating environment

Hardware requirements

IBM POWER Systems AND BLADECENTER support IBM System Storage 7216 Multi-Media Enclosure

The 7216 Multi-Media Enclosure offers two bays for tape, RDX removable HDDs, or DVD-RAM drives, and can be attached to IBM POWER6, IBM POWER7 Systems™, and IBM PS703 and IBM PS704 BladeCenters. 7216 features are listed below.

<table>
<thead>
<tr>
<th>Feature description</th>
<th>Feature number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 TB removable RDX drive</td>
<td>EU01</td>
</tr>
<tr>
<td>DAT160 USB Tape Drive</td>
<td>EU16</td>
</tr>
<tr>
<td>RDX removable disk docking station</td>
<td>1103*</td>
</tr>
<tr>
<td>160 GB removable RDX drive</td>
<td>1106*</td>
</tr>
<tr>
<td>500 GB removable RDX drive</td>
<td>1107*</td>
</tr>
<tr>
<td>DVD-RAM Sled w/1 DVD-RAM SAS Drive</td>
<td>1420*</td>
</tr>
<tr>
<td>DVD-RAM SAS Drive Only</td>
<td>1422*</td>
</tr>
<tr>
<td>DAT160 SAS Tape Drive</td>
<td>5619*</td>
</tr>
<tr>
<td>HHLTO5 SAS Tape Drive</td>
<td>8247*</td>
</tr>
</tbody>
</table>

* Previously announced

Note: Blank drive or Blank DVD Panels must be installed when slots are empty for proper air flow.

The 7216 will attach to selected IBM POWER6, IBM POWER7, and BladeCenter Systems. A current list of supported host platforms is available at

http://www-03.ibm.com/systems/support/storage/config/ssic/index.jsp

RDX removable disk drives

RDX removable disk drives (feature numbers 1106, 1107, and EU01) require an RDX docking station (feature number 1103).

Cables and Host System Bus adapters

SAS Controller Adapter and cable

PCI-E DDR Dual-x4 External SAS Controller Adapter (feature numbers 5278 or 5901) must be installed in IBM POWER6 or IBM POWER7 processor-based servers in order to attach to a 7216 Model 1U2 Multi-Media Storage Enclosure.

IBM POWER6 and POWER7 Systems - Up to two 7216 storage enclosure SAS features may be attached to a PCI-E DDR Dual-x4 SAS Adapter (feature number 5278 or 5901). Attaching a 7216 to a POWER server through the Integrated SAS adapter is not supported.

IBM PS703 and PS704 BladeCenters - A 3 Gigabit SAS Passthru Expansion adapter (feature number 8246) must be installed for each Tape Drive feature installed in the 7216 model. BladeCenters do not support DVD-RAM Drives.

An optional Quad External SAS cable is available by specifying feature number 5544 with each 7216 order. The Quad External Cable allows up to four 7216 SAS tape or DVD-RAM features to attach to a single System SAS Adapter. BladeCenters do not support the Quad External Cable.

For each SAS Tape Drive feature and each DVD-RAM Drive Sled/Drive feature installed in a 7216 storage enclosure, the appropriate external SAS cable will be provided for attachment to an IBM POWER server or BladeCenter.
Attaching the 7216 model to an IBM Power® processor-based server through the integrated SAS adapter is not supported.

**USB adapter and cable**

The DAT160 USB Tape Drive and the removable RDX HDD docking station features on the 7216 model only support the USB cable that is provided as part of the feature number. Additional USB hubs, add-on USB cables, or USB cable extenders are not supported.

For each DAT160 USB Tape Drive and RDX docking station feature installed in the 7216 model, the appropriate external USB cable will be included for attachment to an IBM Power or BladeCenter server. These 7216 features can be connected to the external, integrated USB ports on POWER6 and POWER7 Systems or to the 4-Port USB PCI Express® Adapter (feature number 2728). Feature number 2728 is not available on BladeCenters.

RDX removable disk drives (feature numbers 1106, 1107, and EU01) require an RDX docking station (feature number 1103).

**Power cords**

Power cords are available by country designation and may be specified by feature number. One Rack Device to PDU Cord will be shipped with each IBM System Storage 7216 Multi-Media Enclosure order. Additional power cords may be specified with the 7216 model order from the feature list below.

**Power cords available:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Feature</th>
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</thead>
<tbody>
<tr>
<td>2.8 m (9 ft) Power Cords:</td>
<td></td>
</tr>
<tr>
<td>125V, 10A, U.S./Canada</td>
<td>9800*</td>
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<tr>
<td>250V, 16A (AC), France/Germany</td>
<td>9820*</td>
</tr>
<tr>
<td>250V, 11A, Denmark</td>
<td>9821*</td>
</tr>
<tr>
<td>250V, 13A, United Kingdom</td>
<td>9825*</td>
</tr>
<tr>
<td>250V, 6-16A, Israel</td>
<td>9827*</td>
</tr>
<tr>
<td>250V, 10A, Switzerland</td>
<td>9828*</td>
</tr>
<tr>
<td>250V, 16A, South Africa</td>
<td>9829*</td>
</tr>
<tr>
<td>250V, 10 and 16A, Italy</td>
<td>9830*</td>
</tr>
<tr>
<td>250V, 10A, Australia</td>
<td>9831*</td>
</tr>
<tr>
<td>250V, 15A, U.S./Canada</td>
<td>9833*</td>
</tr>
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<td>250V, 10A, Uruguay/Argentina</td>
<td>9834*</td>
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<td>125V, 10A, Taiwan</td>
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<td>250V, 6A, China (PRC)</td>
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<td>250V, 10A, Brazil</td>
<td>9847*</td>
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<tr>
<td>Rack Device to PDU Cord</td>
<td>9848*</td>
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</table>

* Previously announced feature

**Software requirements**

The IBM 7216 System Storage Multi-Media Enclosure is compatible with most IBM POWER system models, and IBM PS703 and IBM PS704 BladeCenters that offer current level AIX, IBMi, and LINUX operating systems. For a complete list of host software versions and release levels that support the 7216, refer to the following System Storage Interoperation Center (SSIC) website

http://www-03.ibm.com/systems/support/storage/config/ssic/index.jsp

**Note:** All new IBM tape device drivers will be posted to the web through the Fix Central download portal. IBM maintains the latest levels of System Storage tape drive and library device drivers and documentation on the Internet.
Utilize the Fix Central download portal by accessing the following website

http://www.ibm.com/support/fixcentral

There are a few pull down menus to navigate to the correct download as follows:

- In the first pull down menu labeled "Product Group" select "Storage Systems".
- In the next pull down menu that appears which is labeled "Product Family" select "Tape Systems".
- With the next pull down menu, "Product Type", select "Tape Device Drivers and Software".
- This will in turn bring up the "Product" menu, which provides selections for "Platform drivers, Tools, or Software".
- Under "Platform drivers" in order to download your driver, select the correct operating system.
- Two more pull down menus will appear with information. Click "Continue".
- The next screen can be used to narrow the search, however just click "Continue" to view what is available.

The IBM Tape Device Drivers Installation and User’s Guide can be found at the following website

http://www-01.ibm.com/support/docview.wss?rs=577&uid=ssg1S7002972

Planning information

Customer responsibilities

The IBM System Storage 7216 Multi-Media Enclosure is designated as customer setup. Customer setup, operation, and service publications are included with all 7216 Storage Enclosure shipments, or are available by ordering the IBM 7216 Model 1U2 Multi-Media Enclosure Setup, Operator and Service Guide (SA23-2271 (English version document) or available on multiple language CD).

The specific 7216 configuration ordered arrives fully assembled and with drive firmware installed. External SAS or USB cables and a power cord are also included.

IBM maintains the latest levels of System Storage tape drive firmware levels and storage documentation on the Internet. Obtain them by accessing the IBM Fix Central at

http://www.ibm.com/support/fixcentral

You are responsible for downloading or obtaining from IBM, and installing designated Machine Code (microcode, basic input/output system code (called "BIOS"), utility programs, device drivers, and diagnostics delivered with an IBM machine) and other software updates in a timely manner from an IBM Internet website or from other electronic media, and following the instructions that IBM provides. You may request IBM to install Machine Code changes; however, you may be charged for that service.

Cable orders

SAS cables: At least one SAS external cable will be provided with each tape or DVD-RAM drive specified on the IBM System Storage 7216 Multi-Media Enclosure. Each SAS device attaches to a separate IBM POWER System or BladeCenter SAS port.

If the availability of IBM Power System Host Bus Adapter port is limited, a Quad External SAS Cable may be ordered by specifying feature number 5544. The Quad External SAS Cable allows the attach of up to four SAS Tape or DVD-RAM drive devices to a single POWER Server. BladeCenters do not support the Quad Cable feature.
**USB cables:** One USB external cable will be provided with each USB drive or RDX docking station specified on the IBM System Storage 7216 Multi-Media Enclosure. Each USB device attaches to a separate IBM Power System USB port.

Refer to the **Hardware requirements** section for individual drive and cabling requirements. Customers are advised to use only the cables provided by IBM.

**Security, auditability, and control**

These products use the security and auditability features of the host system and application programs.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

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**IBM Electronic Services**

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The Electronic Services news page is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. The news page enables you to gain easier access to IBM resources for assistance in resolving technical problems.

The Electronic Service Agent™ is no-additional-charge software that resides on your server. It monitors events and transmits system inventory information to IBM on a periodic, client-defined timetable. The Electronic Service Agent automatically reports hardware problems to IBM. Early knowledge about potential problems enables IBM to deliver proactive service that may result in higher system availability and performance. In addition, information collected through the Service Agent is made available to IBM service support representatives when they help answer your questions or diagnose problems. Installation and use of IBM Electronic Service Agent for problem reporting enables IBM to provide better support and service for your IBM server.

To learn how Electronic Services can work for you, visit

http://www.ibm.com/support/electronic
Terms and conditions

Field installable feature
Yes

Warranty period
One year. An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. An IBM part or feature which replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature is the same as the machine it is installed.

Customer setup
Yes

Machine code
Same license terms and conditions as base machine

Optional features warranty period
Optional feature - One year
An IBM part or feature installed during the initial installation of an IBM machine is subject to a full warranty effective on the date of installation of the machine. An IBM part or feature which replaces a previously installed part or feature assumes the remainder of the warranty period for the replaced part or feature. An IBM part or feature added to a machine without replacing a previously installed part or feature is subject to a full warranty effective on its date of installation. Unless specified otherwise, the warranty period, type of warranty service, and service level of a part or feature is the same as the machine it is installed.

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