

IBM RDX USB 3.0 Disk Backup Solution

IBM Redbooks Product Guide

The new IBM® Removable Disk EXchange (RDX) USB 3.0 removable disk backup solution is designed to address your increasing capacity and backup requirements, and reliably and cost-effectively protect your business valuable assets, while alleviating the deployment and management complexity of traditional tape drives. It uses a rugged removable disk cartridge and docking station to provide an easy-to-use, highly secure, fast, and portable answer to your data protection concerns.

The IBM RDX USB 3.0 internal and external removable disk drives are shown in the following figure.



Figure 1. IBM RDX USB 3.0 internal and external drives

Did you know

The IBM RDX solution provides all the benefits of disk, with fast, random access to data and drag-and-drop functionality, in addition to the historic portability and durability benefits of tape. Designed for portability and longevity, the rugged RDX cartridges are engineered to be durable so you can safely transport them off-site while providing the shelf life required for archival requirements.

IBM RDX features high-capacity shock-resistant cartridges with up to 1 TB capacity, making your storage options extremely flexible. Each cartridge is ruggedized to withstand a drop from up to 0.9 meters (36 in.) without damage. The RDX USB 3.0 docking stations are offered in external stand-alone and internal 5.25-inch half-height units to seamlessly integrate into your IBM System x® environment. The USB interface ensures a simple installation while providing high performance, with sustained transfer rates of up to 96 MBps.

Through rigorous testing by IBM through the IBM ServerProven® program, you can maintain a high degree of confidence that your IBM System x server configuration is compatible with and functions reliably when using these RDX backup units. For an extra measure of confidence, IBM RDX USB 3.0 backup units are covered under IBM warranty.

Part number information

The following table provides the ordering part numbers and feature codes for the IBM RDX USB 3.0 disk backup options.

Table 1. Ordering part numbers and feature codes

Description	Part number	Feature code
External backup units		
External Carrier USB 3	None	A2VM
IBM RDX USB 3.0 Dock with 320GB Cartridge	362532Y	Not applicable
IBM RDX USB 3.0 Dock with 500GB Cartridge	362550Y	Not applicable
IBM RDX USB 3.0 Dock with 1TB Cartridge	36251TY	Not applicable
Internal backup units		
IBM RDX 3 Internal USB Drive (dock/carrier)	None	A2U7
IBM RDX Internal USB 3.0 Dock with 320GB Cartridge	00D2786	A2VE
IBM RDX Internal USB 3.0 Dock with 500GB Cartridge	00D2787	A2VF
IBM RDX Internal USB 3.0 Dock with 1TB Cartridge	00D2788	A2VG
Cartridges		
IBM RDX 160 GB Cartridge	46C5366	5707
IBM RDX 320 GB Cartridge	46C5367	5708
IBM RDX 500 GB Cartridge	46C5368	5709
IBM RDX 750GB Cartridge	81Y3645	A1VK
IBM RDX 1TB Cartridge	81Y3647	A1VL
External cables		
3 Meter External USB 3 cable (USB type B-A)	None	A2X3
Internal cables		
USB cable (USB type B-B)	None	3831
1 meter internal USB cable (USB type B-A)	None	9266
Internal x3200 M3 USB Cable (USB type B-2x3)	None	9275
Internal x3650/x3655 USB Cable (USB type B-1x6)	None	3833

The part numbers for the IBM RDX Internal USB 3.0 Dock with Cartridge include the following items:

- One internal carrier/dock (drive) to fit into a 5.25-inch HH bay
- One cartridge (either 320 GB, 500 GB, or 1 TB capacity)
- Documentation CD
- Software CD
- Four USB cables for internal tape connectivity:
 - 14-inch USB cable with type B-2x3 connector
 - 28-inch USB cable with type B-B connector
 - 12.5-inch USB cable with type B-1x6 connector
 - 1 meter USB cable with type B-A connector
- Mounting screws

The internal drive can be converted to a 3.5-inch form factor for use in some rack-optimized servers, as described in the Supported Servers section of this guide.

The part numbers for the IBM RDX USB 3.0 Dock with Cartridge (external) include the following items:

- One external carrier/dock (drive)
- One cartridge (either 320 GB, 500 GB, or 1 TB capacity)
- Documentation CD
- Software CD
- AC adapter (12 output; 100-240 V, 50-60 Hz input)
- 3 m external USB 3 cable

The part numbers for the IBM RDX cartridges include the following item:

- One cartridge (either 160 GB, 320 GB, 500 GB, 750 GB, or 1 TB capacity)

The following figure shows the IBM RDX Internal USB 3.0 Dock with rails for mounting in 5.25-inch bays.



Figure 2. IBM RDX Internal USB 3.0 Dock with rails

The following figure shows three of the available cartridge sizes.



Figure 3. IBM RDX cartridges

Features

The IBM RDX USB 3.0 drives have the following features:

- Affordable capacity: 320 GB, 500 GB, and 1 TB disk cartridges.
- Simplicity: With only the native OS, RDX provides random access to data and the convenience of drag-and-drop functionality through persistent drive letter access. It can also be addressed like traditional removable tape media, when used in conjunction with any of the supported backup applications.
- Flexibility: Internal and external RDX installation alternatives.
- Plug-and-Play connectivity: USB 3.0 interface for increased ease of use.
- Inexpensive performance: USB sustained transfer rate of up to 96 MBps.
- Portability and durability: RDX disk cartridges are shock-resistant, rugged, and removable for safely transporting offsite. Each is ruggedized to withstand a drop from up to 0.9 meters (36 in.) without damage.
- Investment protection: The carrier supports next generation capacities of cartridges.
- Effortless ordering: Internal and external single-cartridge bundles by capacity; additional cartridges can be ordered separately.
- Secure: Cartridges can be password protected and software encrypted for extra security.

Specifications

The IBM RDX drives have the following specifications:

- Up to 96 MBps native USB transfer rate
- Up to 1 TB native capacity
- Hot-plug capability
- 5.25-inch Internal form factor, convertible to 3.5-inch form factor in certain configurations
- External USB stand-alone offering or internal docks can be used with external enclosure

Physical specifications

IBM RDX Internal USB 3.0 Dock:

- Height: 41 mm (1.6 in.)
- Width: 146 mm (5.75 in.)
- Depth: 172 mm (6.8 in.), including bezel
- Weight: 635 g (1.4 lb)

IBM RDX USB 3.0 Dock (external):

- Height: 52 mm (2.0 in)
- Width: 110 mm (4.3 in)
- Depth: 177 mm (7.0 in), including bezel
- Weight: 540 g (1.2 lb)

IBM RDX cartridge:

- Height: 24 mm (0.9 in.)
- Width: 87 mm (3.4 in.)
- Depth: 119 mm (4.7 in.)
- Weight: 173 g (0.4 lb)

Operating environment

The IBM RDX USB 3.0 drives are supported in this environment:

- Temperature:
 - Operating: 10° - 40°C (50° - 104°F)
 - Non-operating: -40° - 65°C (-40° - 149°F)
- Relative humidity:
 - Operating: 20% - 80% (non-condensing)
 - Non-operating: 10% - 90% (non-condensing)

Warranty

Your RDX purchase is covered under IBM warranty.

Warranty on the IBM RDX Internal USB 3.0 Dock: One year, customer-replaceable unit (CRU) limited warranty, or when installed in an IBM System x server or IBM external tape enclosure, the internal dock assumes your system's or enclosures' base warranty and any IBM ServicePac® upgrade.

Warranty on the IBM RDX USB 3.0 Dock (external): Three year, customer-replaceable unit (CRU) limited warranty.

Warranty on the IBM RDX cartridges: The cartridges are not covered by the RDX product warranty, and are considered consumable media. RDX cartridges have a limited one year warranty provided by IBM Storage Media. If any defect in material or manufacture appears within one year of the date of original purchase of this product, it will be replaced or the purchase price refunded.

Supported servers

The IBM RDX Internal and External USB 3.0 Docks are supported in the IBM System x servers listed in the following table.

Table 2. Supported System x servers

Product description	x3100 M4 (2582)	x3200 M3 (7327, 7328)	x3250 M3 (4251, 4252)	x3250 M4 (2583)	x3400 M3 (7378, 7379)	x3500 M3 (7380)	x3500 M4 (7383)	x3530 M4 (7160)	x3550 M3 (7944)	x3550 M4 (7914)	x3620 M3 (7376)	x3630 M3 (7377)	x3630 M4 (7158)	x3650 M3 (7945)	x3650 M4 (7915)	x3690 X5 (7147)	x3750 M4 (8722)	x3755 M3 (7164)	x3850 X5 (7143)	dx360 M3 (6391)	dx360 M4 (7912)
IBM RDX Internal USB 3.0 Dock	Y	Y	N	N	Y	Y	N	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N
IBM RDX USB 3.0 Dock (external)	Y	Y	Y	Y	Y	Y	N	N	Y	N	Y	Y	N	Y	N	N	N	Y	N	N	N

For the latest information about the devices supported by each System x server type, see IBM ServerProven. You can either view by server or select the **Tape backup units** link at:

<http://ibm.com/servers/eserver/serverproven/compat/us/>

Internal installation

The IBM RDX Internal USB 3.0 Dock can be installed internally in specific servers, as listed in Table 2. Depending on the server, the Internal Dock is installed in the server's standard 5.25-inch form factor bay or it can be mounted internally with the addition of a 3.5-inch enablement kit. The following table lists the internal USB cables and the enablement kits (if required) for the servers in which Internal Docks are supported.

Table 3. Supported System x servers

Product description	Part number	Feature code	x3100 M4 (2582)	x3200 M3 (7327, 7328)	x3400 M3 (7378, 7379)	x3500 M3 (7380)	x3620 M3 (7376)	x3650 M3 (7945)
IBM RDX Internal USB 3.0 Dock	See Table 1	See Table 1	Y	Y	Y	Y	Y	Y
Internal USB cables								
USB cable (USB type B-B)	None	3831	N	N	Y	Y	N	N
1 meter internal USB cable (USB type B-A)	None	9266	Y	N	N	N	Y	Y
Internal x3200 M3 USB Cable (USB type B-2x3)	None	9275	N	Y	N	N	N	N
Internal x3650/x3655 USB Cable (USB type B-1x6)	None	3833	N	N	N	N	N	N
3.5-inch enablement kits								
Tape Enablement Kit option for IBM System x3650 M3	59Y3806	1746	N	N	N	N	N	Y
IBM x3620 M3 Tape Enablement Kit	69Y0798	6419	N	N	N	N	Y	N

Popular configurations

This section illustrates how the IBM RDX USB 3.0 drives can be used in configurations.

External USB drive

The following figures shows the IBM RDX USB 3.0 Dock (external) connected to a supported System x server.

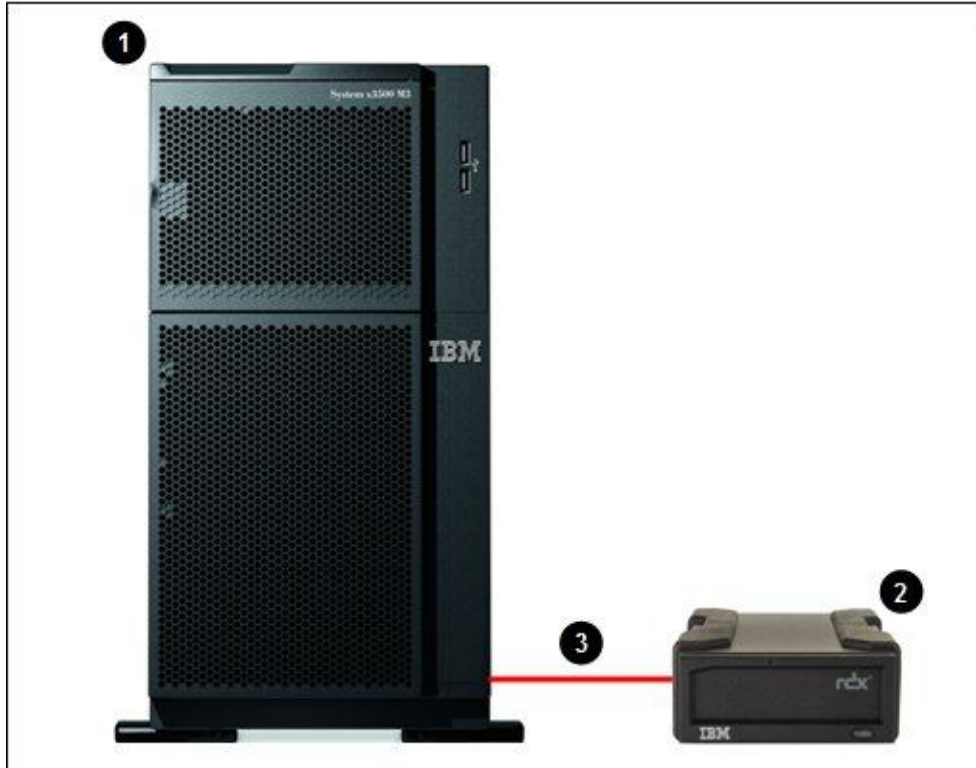


Figure 4. The IBM RDX USB 3.0 Dock connected to an x3500 M3 server with 24 hard drive bays

The parts used are listed in the following table.

Table 4. Components used when connecting an external IBM RDX USB 3.0 Dock to an x3500 M3 server (as shown in Figure 4)

Diagram reference	Part number	Description	Quantity
1	Varies	x3500 M3 (or other supported server)	1
2	See Table 1	IBM RDX USB 3.0 Dock (external)	1
3	FC A2X3	3 Meter External USB 3 cable (USB type B-A), included with the external RDX dock option	1

Internal USB drive

The following figure shows the IBM RDX Internal USB 3.0 Dock installed in a supported rack-mounted System x server.



Figure 5. The IBM RDX Internal USB 3.0 Dock installed in an x3650 M3 server

The parts used are listed in the following table.

Table 5. Components used when installing RDX Internal USB 3.0 Dock in an x3650 M3 server (as shown in Figure 5)

Diagram reference	Part number	Description	Quantity
1	Varies	x3650 M3 or other supported server	1
2	See Table 3	Tape Enablement Kit	1
3	See Table 1	IBM RDX Internal USB 3.0 Dock	1
	See Table 3	Internal USB cable (included with the internal RDX dock option) - not shown in Figure 5	1

Supported software products

The IBM RDX USB 3.0 drives support the following software products:

- CA BrightStor ARCserve Backup
- Yosemite Backup Basic with Disaster Recovery for Windows and Linux Version 8.7
- Legato Networker
- IBM Tivoli® Storage Manager
- Veritas Backup Exec

Supported operating systems

The IBM RDX USB 3.0 drives support the following operating systems:

- Microsoft Windows Server 2008 R2
- Microsoft Windows Server 2008, Datacenter x86 Edition
- Microsoft Windows Server 2008, Datacenter x64 Edition
- Microsoft Windows Server 2008, Enterprise x86 Edition
- Microsoft Windows Server 2008, Enterprise x64 Edition
- Microsoft Windows Server 2008, Standard x86 Edition
- Microsoft Windows Server 2008, Standard x64 Edition
- Microsoft Windows Server 2008, Web x86 Edition
- Microsoft Windows Server 2008, Web x64 Edition
- SUSE Linux Enterprise Server 10 for x86
- SUSE Linux Enterprise Server 10 for AMD64/EM64T
- SUSE Linux Enterprise Server 10 with Xen for x86
- SUSE Linux Enterprise Server 10 with Xen for AMD64/EM64T
- SUSE Linux Enterprise Server 11 for x86
- SUSE Linux Enterprise Server 11 for AMD64/EM64T
- SUSE Linux Enterprise Server 11 with Xen for AMD64/EM64T
- Red Hat Enterprise Linux 4 AS for x86
- Red Hat Enterprise Linux 4 AS for AMD64/EM64T
- Red Hat Enterprise Linux 4 ES for x86
- Red Hat Enterprise Linux 4 ES for AMD64/EM64T
- Red Hat Enterprise Linux 5 Server Edition
- Red Hat Enterprise Linux 5 Server x64 Edition
- Red Hat Enterprise Linux 5 Server with Xen x64 Edition
- Red Hat Enterprise Linux 5 Server Edition with Xen
- Red Hat Enterprise Linux 6 Server Edition
- Red Hat Enterprise Linux 6 Server x64 Edition
- VMware ESX 4.1
- VMware ESXi 4.1
- VMware vSphere 5

For the latest information about the specific versions and service packs supported, see the IBM ServerProven website at:

<http://ibm.com/servers/eserver/serverproven/compat/us/>

Related publications

For more information, refer to these documents:

- IBM RDX Removable Disk overview and data sheet:
<http://www.ibm.com/systems/storage/tape/rdx>
- IBM RDX Removable Disk specification:
<http://www.ibm.com/systems/storage/tape/rdx/specifications.html>
- *IBM RDX Removable Disk User's Guide*:
<http://www.ibm.com/support/docview.wss?uid=psg1MIGR-5079206>
- IBM US Announcement Letter:
<http://ibm.com/common/ssi/cgi-bin/ssialias?infotype=dd&subtype=ca&&htmlfid=897/ENUS112-046>

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This document was created or updated on July 12, 2012.

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