



IBM Flex System V7000 Storage Node delivers integrated, innovative storage for IBM PureSystems

Table of contents

1 Overview	7 Publications
2 Key prerequisites	8 Technical information
2 Planned availability date	11 Terms and conditions
3 Description	13 Pricing
5 Product number	14 Order now

At a glance

IBM® PureFlex™ System is a new category of systems that integrates multiple server architectures, networking, storage, and system management capability into a single system.

IBM Flex System™ V7000 Storage Node is a powerful block storage system designed to integrate into the IBM PureFlex System and IBM Flex System infrastructure for extremely rapid storage deployment and breakthrough management simplicity.

Flex System V7000:

- Is built on the industry-leading storage virtualization and efficiency capabilities of IBM Storwize® V7000
- Features sophisticated storage technologies including thin provisioning, automated tiering, external storage virtualization, Real-time Compression™, clustering, replication, and a next-generation graphical user interface (GUI)
- Supports 8Gb Fibre Channel (FC) and 10Gb Ethernet Fibre Channel over Ethernet (FCoE) and iSCSI host connectivity
- Supports twenty-four 2.5-inch 6Gb SAS drives, nearline drives, and solid state drives per enclosure
- Scalable to 240 drives per system and 960 drives per clustered system with the attachment of Flex System V7000 and Storwize V7000 expansion enclosures

For ordering, contact your IBM representative, an IBM Business Partner, or IBM Americas Call Centers at 800-IBM-CALL (Reference: YE001).

Overview

IBM Flex System V7000 Storage Node is an integrated storage system for IBM PureFlex System and IBM Flex System, designed to deliver high performance, advanced function, high availability, and modular and scalable storage capacity.

IBM PureFlex System and IBM Flex System represent a new category of computing that integrates multiple server architectures, networking, storage, and system management capability into a single system that is easy to deploy and manage.

IBM PureFlex System and IBM Flex System have built-in virtualization support of servers, storage, and networking to speed provisioning and increase resiliency. In addition, it supports multiple open industry standards, operating systems, networking and storage fabrics, virtualization, and system management protocols, to easily fit within existing and future datacenter environments. IBM PureFlex System

and IBM Flex System are scalable and extendable with multigeneration upgrades to protect and maximize IT investments.

The new IBM Flex System V7000 Storage Node is a powerful block storage system designed to integrate into the IBM PureFlex System or IBM Flex System to enable extremely rapid storage deployment and breakthrough management simplicity. By enabling virtualization, consolidation, and tiering in businesses of all sizes, it is designed to improve application availability and resource utilization. Flex System V7000 offers easy-to-use, efficient and cost-effective management capabilities for both new and existing storage resources in your IT infrastructure. This new class of storage system combines no compromise design along with virtualization, efficiency, and performance capabilities.

IBM Flex System V7000 Storage Node is built on the industry-leading storage virtualization and efficiency capabilities of IBM Storwize V7000 including

- IBM System Storage® Easy Tier® for automated SSD optimization
- IBM Real-time Compression for data footprint reduction

While also being physically and logically integrated into IBM PureFlex System or IBM Flex System .

IBM Flex System V7000 helps simplify and speed IBM PureFlex System deployment, providing superior integration of server and storage management to automate and streamline provisioning for greater responsiveness to business needs and lower overall cost.

Speed Time to Value with:

- Integration by design: Automates deployment with integration into IBM PureFlex System or IBM Flex System infrastructure for deployment in minutes, not weeks.
- Simplified experience: Simplifies management significantly with an integrated, intuitive user interface for ease of use and faster system accessibility to increase administrative efficiency and simplicity.
- Built-in expertise:
 - Virtualized storage: Virtualizes third-party storage for investment protection and nondisruptive migration of the current storage infrastructure.
 - Helps optimize performance and costs for mixed workloads: Up to 200% higher performance than with HDD alone by optimizing SSD usage with Easy Tier .

Key prerequisites

Flex System V7000 Storage Node requires:

- Flex System V7000 control enclosure with optional Flex System V7000 or Storwize V7000 expansion enclosures.
- Flex System V7000 software, version 6.4 or later, for operation. Use of the software is entitled through the acquisition of Flex System V7000 software licenses.
- Flex System Enterprise Chassis with all necessary components to support Flex System V7000 as a node and a switch module supporting the connectivity option configured with the Flex System V7000.

Planned availability date

December 10, 2012

Description

Integrated, innovative storage for IBM PureSystems™

IBM Flex System V7000 Storage Node is a powerful block storage system designed to enable rapid storage deployment and breakthrough management simplicity through integration with IBM compute, storage, networking, virtualization and management infrastructures. It helps simplify and speed PureFlex System and IBM Flex System infrastructure deployment with superior server and storage management integration to automate and streamline provisioning and to help organizations achieve greater responsiveness to business needs while reducing costs.

Integrating IBM Storwize V7000 capabilities: Integrated into PureFlex System or IBM Flex System solutions, Flex System V7000 can become part of a highly efficient, highly capable, next-generation information infrastructure.

Flex System V7000 is derived from the same base technology as the successful Storwize V7000. It supports unmatched performance and flexibility through internal virtualization and built-in SSD optimization technologies. Nondisruptive migration of data from existing storage translates to simplified implementation, which minimizes user disruption. Sophisticated storage technologies, including IBM Real-time Compression, thin provisioning, automated tiering, external storage virtualization, clustering, replication and a next-generation graphical user interface (GUI) are designed to help you obtain efficiency from your PureFlex or IBM Flex System infrastructure.

Simplified management with automated deployment: The PureFlex System and IBM Flex System have been designed to solve such major IT challenges as storage and network deployment and integrated management, systems security management, virtual systems monitoring and management, and performance tracking.

Flex System V7000 automatically configures into the PureFlex System or IBM Flex System infrastructure. When placed into the Flex System Enterprise Chassis, Flex System V7000 is immediately recognized and added to IBM Flex System Manager™ and its Chassis Map, helping reduce the time required for setup and configuration management. IBM Flex System Manager provides physical and logical storage topology views and shows relationships between storage and server resources, enabling you to track key resources based on business use. Provisioning capabilities include image management for simple virtual machine creation, deployment and cloning. You can manage storage system pools for data lifecycle management and storage placement based on business policies.

Virtualization: Flex System V7000 virtualizes internal and third-party storage for rapid, flexible provisioning and investment protection. Combining storage and server virtualization can build a more powerful virtualized infrastructure than either virtualization solution deployed alone. By integrating and virtualizing all of your storage, you get a single user interface with a management console that is integrated into the comprehensive management system.

Flex System V7000 is a virtualized storage system that enables rapid third-party external storage virtualization to manage capacity in other disk systems. When Flex System V7000 virtualizes a disk system, capacity in the external system inherits the functional richness and ease of use of Flex System V7000, including advanced replication, thin provisioning, Real-time Compression, and Easy Tier.

Performance optimization: Storage tiering helps optimize storage use with data location to improve system performance, reduce costs and simplify management. Easy Tier technology built into Flex System V7000 automatically and dynamically moves only the appropriate data to SSDs in the system, so you get SSD performance without manually creating and managing storage tier policies.

A hybrid storage pool is created containing two tiers, SSD and hard disk drive (HDD). The busiest volume portions are identified and automatically relocated to high-performance SSDs, and the remaining data can take advantage of higher capacity HDDs for the best value.

Compression for enterprise-class storage efficiency: Real-time Compression can improve efficiency by compressing data as much as 80 percent, enabling you to store up to five times as much data in the same physical disk space. It is designed for use with active primary data such as production databases and email applications, dramatically expanding the range of data that can benefit from compression.

Real-time Compression, together with other efficiency technologies, can reduce acquisition costs, reduce rack space, and lower power and cooling costs. When combined with external storage virtualization, it can significantly enhance the usable capacity of your system.

Flex System V7000 Storage Node components

Flex System V7000 Storage Node is comprised of the following:

- Flex System V7000 hardware:
 - Flex System V7000 control enclosure
 - Flex System V7000 expansion enclosure
- Flex System V7000 software

All functional capabilities for the Flex System V7000 Storage Node are provided through the Flex System V7000 software. The Flex System V7000 software is preloaded by IBM on the Flex System V7000 control enclosure. Use of the software is entitled through the acquisition of Flex System V7000 software licenses.

For additional information on the Flex System V7000 software, refer to Software Announcement [212-385](#), dated November 13, 2012, IBM Flex System V7000 Software V6.4 delivers integrated, innovative storage for IBM PureSystems.

Flex System V7000 hardware models

Flex System V7000 hardware models are designed for use in the Flex System Enterprise Chassis.

The Flex System V7000 control enclosure features:

- Dual node canisters with 16 GB of cache (8 GB per canister)
- 8Gb FC and 10Gb FCoE / iSCSI host connectivity options
- 24 2.5-inch 6Gb SAS drive bays
- 6Gb SAS ports for the attachment of expansion enclosures
- Management modules with integrated connectivity to the Flex System Chassis Management Module
- Support for the attachment of other storage devices using the FC or FCoE interface to enable use of the External Virtualization function

The Flex System V7000 expansion enclosure features:

- Dual expansion canisters
- 24 2.5-inch 6Gb SAS drive bays
- 6Gb SAS ports for attachment of to upstream and downstream enclosures
- Management modules with integrated connectivity to the Flex System Chassis Management Module

Host connectivity: Host connectivity to compute nodes is provided through optional Flex System V7000 control enclosure network cards that connect to the Flex System Enterprise Chassis midplane and its switch modules. Available options are:

- 10Gb Converged Network Adapter (CNA) 2 Port Daughter Card for FCoE and iSCSI fabric connections
- 8Gb Fibre Channel (FC) 4 Port Daughter Card for Fibre Channel fabric connections.

Both cards must be installed in pairs (one card per node canister) and the following configurations are supported:

- Two or four 10Gb CNA cards
- Two 8Gb FC cards
- Two 10Gb CNA cards and two 8Gb FC cards

Drive options: Both the Flex System V7000 control and expansion enclosures support high-capacity nearline disk drives, high-performance disk drives, and solid state drives. Drive types can be intermixed within an enclosure. The following 6Gb SAS drives are supported:

- 500 GB and 1 TB GB 7,200 rpm disk drives
- 300 GB, 600 GB, and 900 GB 10,000 rpm disk drives
- 146 GB and 300 GB 15,000 rpm disk drives
- 200 GB and 400 GB solid state drives

Scalability: The Flex System V7000 control enclosure supports the attachment of Flex System V7000 expansion enclosures (maximum of two) and Storwize V7000 expansion enclosures (maximum of nine). Flex System V7000 and Storwize V7000 expansion enclosures can even be intermixed behind a single Flex System V7000 control enclosure, although the total number of expansion enclosures cannot exceed nine.

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

For additional information on the Flex System V7000 software, refer to Software Announcement [212-385](#), dated November 13, 2012 , IBM Flex System V7000 Software V6.4 delivers integrated, innovative storage for IBM PureSystems .

Product number

Description	Machine type	Model	Feature
IBM Flex System V7000 Control Enclosure	4939	A49	
IBM Flex System V7000 Expansion Enclosure	4939	A29	
Drives:			
500 GB 7.2K 2.5 inch HDD	4939	A49,A29	AD11
1 TB 7.2K 2.5 inch HDD	4939	A49,A29	AD12
300 GB 10K 2.5 inch HDD	4939	A49,A29	AD21
600 GB 10K 2.5 inch HDD	4939	A49,A29	AD23

900 GB 10K 2.5 inch HDD	4939	A49, A29	AD24
146 GB 15K 2.5 inch HDD	4939	A49, A29	AD31
300 GB 15K 2.5 inch HDD	4939	A49, A29	AD32
200 GB 2.5 inch SSD	4939	A49, A29	AD41
400 GB 2.5 inch SSD	4939	A49, A29	AD43
Cables:			
External Expansion Cable	4939	A49, A29	ADA6
Internal Expansion Cable	4939	A29	ADA1
Interconnects:			
10Gb CNA 2 Port Card	4939	A49	ADB1
8Gb FC 4 Port Card	4939	A49	ADB2
Miscellaneous:			
Flex System V7000 Drive Filler	4939	A49, A29	AD0Z
RFID Tag For Servers/Compute Nodes/ Chassis/Rack For Flex	4939	A49, A29	ERF1

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM , you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=112-093>

Additional information

Flex System V7000 base system models consist of the following items:

- Flex System V7000 control enclosure (Model A49):
 - Double-high, full-wide node for use in an IBM Flex System Enterprise Chassis
 - Two node canisters with 16 GB cache (8 GB per canister)
 - 8Gb FC, 10Gb iSCSI and 10Gb FCoE host connectivity options
 - Two management modules (one per canister) with integrated connectivity to the Flex System Chassis Management Module
 - Two 6Gb SAS ports (one per canister) for attachment of a Flex System V7000 or Storwize V7000 expansion enclosures
 - Twenty four slots for 2.5-inch SAS drives
- Flex System V7000 expansion enclosure (Model A29):
 - Double-high, full-wide node for use in an a Flex System Enterprise Chassis
 - Two expansion canisters
 - Two management modules (one per canister) with integrated connectivity to the Flex System Chassis Management Module
 - Four 6Gb SAS ports (two per canister) for attachment to upstream and downstream enclosures
 - Twenty four slots for 2.5-inch SAS drives

The following items are optionally are available. Refer to the [Product number](#) section for feature numbers:

- 10Gb Converged Network Adapter (CNA) 2 Port Daughter Card
- 8Gb Fibre Channel (FC) 4 Port Daughter Card
- 2.5-inch 6Gb SAS disk drives:
 - 500 GB and 1 TB 7,200 rpm disk drives
 - 300 GB, 600 GB, and 900 GB 10,000 rpm disk drives
 - 146 GB and 300 GB 15,000 rpm disk drives
- 2.5-inch 6Gb SAS solid state drives (SSD):

- 200 GB and 400 GB solid state drives
- Expansion enclosure attachment cables
- RFID tag

Publications

The following Flex System V7000 publications are available:

- *IBM Flex System V7000 Storage Node Installation Guide*
- *IBM Flex System V7000 Storage Node Troubleshooting, Recovery, and Maintenance Guide*
- *Safety Notice*

The most up-to-date product documentation, including the Flex System V7000 information center, is available and downloadable at

<http://www.ibm.com/support>

IBM Publications Center Portal

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

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided, as well as payment options via credit card. A large number of publications are available online in various file formats, which can currently be downloaded free of charge.

Services

Global Technology Services

IBM services include business consulting, outsourcing, hosting services, applications, and other technology management.

These services help you learn about, plan, install, manage, or optimize your IT infrastructure to be an On Demand Business. They can help you integrate your high-speed networks, storage systems, application servers, wireless protocols, and an array of platforms, middleware, and communications software for IBM and many non-IBM offerings. IBM is your one-stop shop for IT support needs.

IBM Implementation Services for Flex System - enablement and configuration
IBM services can assist you with the planning, implementation, configuration and testing of Flex System compute nodes, storage node, software and management. Additionally, we provide basic skills instruction on the IBM Flex System to your key in-house personnel. Some of the tasks that we perform as part of the implementation service are:

- System hardware review
- Hardware connectivity check
- Network switch configuration
- Flexible Systems Manager (FSM) set up (if applicable)
- Compute node management and update management
- Flex System V7000 storage implementation and configuration

For details on available services, contact your IBM representative or visit

<http://www.ibm.com/services/>

For details on available IBM Business Continuity and Recovery Services, contact your IBM representative or visit

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

For details on education offerings related to specific products, visit

<http://www.ibm.com/services/learning/index.html>

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

System x and BladeCenter support services

Recommended core technical support

When you buy IBM System x® technology, include the support services you need -- to help keep both your hardware and software working for you, day after day, at peak performance. It's your first step toward helping to protect your investment and sustain high levels of system availability. We offer service-level and response-time options to fit your business needs. And we'll help you get started with a core support package that includes:

- **Continuous system monitoring**

Electronic monitoring that helps speed up problem-solving with automated, early detection of potential problems and system errors.

- **Hardware maintenance**

World-class remote and on-site hardware problem determination and repair services.

- **Software technical support**

Access to help line calls for fast, accurate answers to your questions during installation and throughout ongoing operations.

For more information, visit

<http://www.ibm.com/servers/eserver/xseries/services.html>

Technical information

Specified operating environment

Physical specifications

- Height: 110 mm (4.4 in)
- Width: 432 mm (17.0 in)
- Depth: 505 mm (19.9 in)
- Approximate weight:
 - Control enclosure:
 - Empty: 21.0 kg (46.3 lb)
 - Fully configured: 27.7 kg (61.0 lb)
 - Expansion enclosure:
 - Empty: 18.4 kg (40.5 lb)
 - Fully configured: 25.1 kg (55.4 lb)

Operating environment

Air temperature:

- Operating: 5° to 40° C (41° to 104° F) up to 3,048 m above sea level (10,000 ft above)
- Non-operating: 1° to 60° C (33.8° to 140° F)

Relative humidity:

- Operating: 8% to 85%
- Non-operating: 5% to 80%

Electrical power:

- Voltage: 12 V dc
- Power :
 - Control enclosure: 376 watts
 - Expansion enclosure: 188 watts

Heat dissipation (BTU per hour):

- Control enclosure: 1,283
- Expansion enclosure: 641

Hardware requirements

The Flex System V7000 requires a Flex System Enterprise Chassis (machine types 7893 and 8721). The chassis must contain the necessary components to support the Flex System V7000 as a node and the appropriate switch module supporting the connectivity option configured with the Flex System V7000.

Refer to Flex System V7000 product documentation and the IBM Systems Support site for information on additional requirements

<http://www.ibm.com/support>

Software requirements

The Flex System V7000 Storage Node requires the Flex System V7000 software, version 6.4 or later, for operation.

The Flex System V7000 software is preloaded by IBM on the Flex System V7000 control enclosure. Use of the software is entitled through the acquisition of a Flex System V7000 Base Software license. This license is required for the Flex System V7000 control enclosure and for each Flex System V7000 expansion enclosure.

A Storwize V7000 Base Software license is required for each Storwize V7000 expansion enclosure directly connected to a Flex System V7000 control enclosure.

Use of optional licensed products offered with the Flex System V7000 software is entitled through the acquisition of their respective licenses.

For additional information on the Flex System V7000 software, refer to Software Announcement [212-385](#), dated November 13, 2012 , IBM Flex System V7000 Software V6.4 delivers integrated, innovative storage for IBM PureSystems .

Compatibility

Refer to the IBM System Storage Interoperation Center (SSIC) for a comprehensive list of supported environments, devices, and configurations

<http://www.ibm.com/systems/support/storage/ssic>

Limitations

The Flex System V7000 Storage Node is only supported in the Flex System Enterprise Chassis (machine types 7893 and 8721).

Planning information

Customer responsibilities

Physical configuration and installation planning, along with machine installation and configuration, are customer responsibilities.

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

Cables are required to attach an expansion enclosure into a Flex System V7000 system. The following expansion enclosure cables are offered with the Flex System V7000:

- Internal Expansion Cable (feature number ADA1): A 0.328 meter SAS cable used for the attachment of Flex System V7000 expansion enclosures.
- External Expansion Cable (feature number ADA6): A 6 meter SAS cable used for the attachment of Storwize V7000 expansion enclosures.

Security, auditability, and control

This product uses the security and auditability features of host hardware, host software, and application software.

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

IBM Electronic Services

IBM has transformed its delivery of hardware and software support services to help you achieve higher system availability. Electronic Services is a Web-enabled solution that offers an exclusive, no-additional-charge enhancement to the service and support available for IBM servers. These services are designed to provide the opportunity for greater system availability with faster problem resolution and preemptive monitoring. Electronic Services comprises two separate, but complementary, elements: Electronic Services news page and Electronic Services Agent.

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

IBM Global Financing

Yes

Warranty period

- System (including the battery): Three years
- Optional features: Three years, unless specified otherwise

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 that 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 are the same as those for the machine in which it is installed.

Warranty service

If required, IBM provides repair or exchange service depending on the types of warranty service specified for the machine. IBM will attempt to resolve your problem over the telephone, or electronically via an IBM website. Certain machines contain remote support capabilities for direct problem reporting, remote problem determination, and resolution with IBM. You must follow the problem determination and resolution procedures that IBM specifies. Following problem determination, if IBM determines on-site service is required, scheduling of service will depend upon the time of your call, machine technology and redundancy, and availability of parts. If applicable to your product, parts considered Customer Replaceable Units (CRUs) will be provided as part of the machine's standard warranty service.

Service levels are response-time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations. Additional charges may apply outside IBM's normal service area. Contact your local IBM representative or your reseller for country and location-specific information.

The type of service is Customer Replaceable Unit (for example, keyboard, mouse, speaker, memory, or hard disk drive) Service and On-site Service.

Customer Replaceable Unit (CRU) Service: IBM provides a replacement CRU to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM at any time on your request. A CRU is designated as being either a Tier 1 (mandatory) or a Tier 2 (optional) CRU. Installation of Tier 1 CRUs, as specified in this announcement, is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation. You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge, under the type of warranty service designated for your Machine.

Based upon availability, a CRU will be shipped for next business day (NBD) delivery. IBM specifies in the materials shipped with a replacement CRU whether a defective CRU must be returned to IBM. When return is required, return instructions and a container are shipped with the replacement CRU, and you may be charged for the replacement CRU if IBM does not receive the defective CRU within 15 days of your receipt of the replacement.

The following parts or features have been designated as Tier 1 CRUs:

- Battery

- Bezel
- Canister
- Drive
- Filler panel
- I/O adapter
- I/O cable
- Tag

On-Site Service: At IBM's discretion you will receive CRU service or IBM will repair the failing machine at your location and verify its operation. You must provide a suitable working area to allow disassembly and reassembly of the IBM machine. The area must be clean, well lit, and suitable for the purpose.

Service level is 9 hours per day, Monday through Friday, excluding holidays, next business day response. Calls must be received by 5:00 p.m. local time in order to qualify for next business day response.

On-site Service is not available in all countries, and some countries have kilometer or mileage limitations from an IBM service center. In those locations where On-site Service is not available, the normal in-country service delivery is used.

Non-IBM parts support

Warranty service: IBM is now shipping machines with selected non-IBM parts that contain an IBM field replaceable unit (FRU) part number label. These parts are to be serviced during the IBM machine warranty period. IBM is covering the service on these selected non-IBM parts as an accommodation to its customers, and normal warranty service procedures for the IBM machine apply.

Warranty service upgrades

Usage plan machine

No

IBM hourly service rate classification

Two

When a type of service involves the exchange of a machine part, the replacement may not be new, but will be in good working order.

Field-installable features

Yes

Model conversions

No

Machine installation

Customer setup. Customers are responsible for installation according to the instructions IBM provides with the machine.

Graduated program license charges apply

No

Licensed internal code and licensed machine code

These products do not contain Licensed Internal Code or Licensed Machine Code.

Educational allowance

A reduced charge is available to qualified education customers. The educational allowance may not be added to any other discount or allowance.

The educational allowance is 15% for the products in this announcement.

Pricing

Product charges

Description	Feature number	Machine type	Model number	Feature number	Install type*
IBM Flex System V7000 Control		4939	A49		
IBM Flex System V7000 Expansion		4939	A29		
Drives:					
500 GB 7.2K 2.5 inch HDD	AD11	4939	A49,A29	AD11	Both
1 TB 7.2K 2.5 inch HDD	AD12	4939	A49,A29	AD12	Both
300 GB 10K 2.5 inch HDD	AD21	4939	A49,A29	AD21	Both
600 GB 10K 2.5 inch HDD	AD23	4939	A49,A29	AD23	Both
900 GB 10K 2.5 inch HDD	AD24	4939	A49,A29	AD24	Both
146 GB 15K 2.5 inch HDD	AD31	4939	A49,A29	AD31	Both
300 GB 15K 2.5 inch HDD	AD32	4939	A49,A29	AD32	Both
200 GB 2.5 inch SSD	AD41	4939	A49,A29	AD41	Both
400 GB 2.5 inch SSD	AD43	4939	A49,A29	AD43	Both
Cables:					
Internal Expansion Cable	ADA1	4939	A29	ADA1	Plant
External Expansion Cable	ADA6	4939	A49,A29	ADA6	Both
Interconnects:					
10Gb CNA 2 Port Card	ADB1	4939	A49	ADB1	Both
8Gb FC 4 Port Card	ADB2	4939	A49	ADB2	Both
Miscellaneous:					
Flex System V7000 Drive Filler	AD0Z	4939	A49,A29	AD0Z	Both
RFID Tag For Servers/ Compute Nodes/Chassis/ Rack For Flex	ERF1	4939	A49,A29	ERF1	Plant

- * Install type:
- "Plant" denotes plant installation only.
 - "Field" denotes field installation only.
 - "Both" denotes both plant and field installation.

Pricing terms

Prices in the following PDF prices link are suggested list prices on day of announcement for the U.S. only. They are provided for your information only. Dealer prices may vary, and prices may also vary by country. IBM list price does not include tax or shipping and is subject to change without notice.

[ENUS-112-093-LIST_PRICES_2012_11_13.PDF](#)

ServicePac prices

For ServiceElect (ESA) maintenance service charges, contact IBM Global Services at 888-IBM-4343 (426-4343).

IBM Global Financing

IBM Global Financing offers competitive financing to credit-qualified customers to assist them in acquiring IT solutions. Offerings include financing for IT acquisition, including hardware, software, and services, from both IBM and other manufacturers or vendors. Offerings (for all customer segments: small, medium, and large enterprise), rates, terms, and availability can vary by country. Contact your local IBM Global Financing organization or visit

<http://www.ibm.com/financing>

IBM Global Financing offerings are provided through IBM Credit LLC in the United States, and other IBM subsidiaries and divisions worldwide to qualified commercial and government customers. Rates are based on a customer's credit rating, financing terms, offering type, equipment type, and options, and may vary by country. Other restrictions may apply. Rates and offerings are subject to change, extension, or withdrawal without notice.

Financing solutions from IBM Global Financing can help you stretch your budget and affordably acquire the new product. But beyond the initial acquisition, our end-to-end approach to IT management can also help keep your technologies current, reduce costs, minimize risk, and preserve your ability to make flexible equipment decisions throughout the entire technology life cycle.

Order now

To order, contact the Americas Call Centers or your local IBM representative, or your IBM Business Partner.

To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968).

Phone: 800-IBM-CALL (426-2255)
Fax: 800-2IBM-FAX (242-6329)
Internet: callserv@ca.ibm.com
Mail: IBM Teleweb Customer Support
ibm.com® Sales Execution Center, Americas North
3500 Steeles Ave. East, Tower 3/4
Markham, Ontario
Canada
L3R 2Z1

Reference: YE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

Note: Shipments will begin after the planned availability date.

Trademarks

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