

IBM System x iDataPlex dx360 M4 server offers increased performance with the latest Intel Xeon processors

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At a glance



The IBM® System x® iDataPlex® dx360 M4 is a half-depth, dual-socket server designed for data centers that require high performance, yet are constrained on floor space, power, and cooling infrastructure. The dx360 M4 is equipped with the latest Intel Xeon™ E5-2600 Series processors and is ideal for clients that need a dense, flexible solution with low total cost of ownership.

New features of the iDataPlex dx360 M4 server include:

- Support for the new Intel™ coprocessor and latest GPUs from NVIDIA:
 - Intel Xeon Phi 5110P
 - NVIDIA Tesla K20
 - NVIDIA Tesla K20X
 - NVIDIA GRID K1 (formerly NVIDIA VGX K1)
 - NVIDIA GRID K2 (formerly NVIDIA VGX K2)
- Intel Xeon E5-2690 2.9 GHz 135 W processor
- Qlogic 10 GbE SFP+ slot-less mezzanine card
- Qlogic and Emulex 4 Gb PCIe Fibre Channel HBAs

Easy-to-order dual compute dx360 M4 standard models and CTO (build your own) models are now available in Standalone Solutions Configurator Tool (SSCT), IBM Hardware Configurator (Blue Horizons), and IBM System x and Cluster Solutions configurator (x-config).

IBM service options: Three-year customer replaceable unit (CRU) and on-site¹ limited warranty².

Overview

IBM System x iDataPlex is an innovative data center solution for users of High Performance Computing (HPC) clusters, grid deployment, and large-scale cloud and virtualization infrastructures who want to reduce power, cooling, or physical space. It represents a new approach for maximum usable density in the data center through innovation at the server level, at the rack level, and at the data center level.

An iDataPlex solution is built with industry-standard components to create flexible configurations of servers, chassis, and networking switches that integrate easily. Customized solutions for your applications can be configured to meet your specific business needs for maximum compute power, GPU acceleration, and the right I/O and networking.

In addition to flexibility at the server level, iDataPlex offers flexibility at the rack level. The iDataPlex can be cabled either through the bottom (if it is set on a raised floor) or from the ceiling. Front-access cabling and Direct Dock Power enable you to quickly and easily make changes in networking, power connections, and storage. The rack also supports multiple networking topologies including Ethernet, InfiniBand, and Fibre Channel.

For iDataPlex Integrated Solutions, IBM manufacturing sites fully integrate the components on site and test them as a complete solution before shipping the rack to your location. When you receive the rack, it is removed from the packaging, placed in its proper location, powered up, and connected to the network in minimal time. IBM personnel confirm that the servers and network are functioning properly before acceptance.

With the optional IBM Rear Door Heat eXchanger as part of an iDataPlex solution, you can have a high-density data center environment that can alleviate the cooling challenges. With further adjustments, the Rear Door Heat eXchanger can help cool the room - helping reduce the need for air conditioning in the data center.

¹ You may be asked certain diagnostic questions before a technician is sent.

² For information on IBM's Statement of Limited Warranty, contact your IBM representative. Copies are available upon request.

Key prerequisites

- Supported operating system
- USB CD-RW/DVD drive
- Device drivers, as required

Planned availability date

January 15, 2013

Description

The iDataPlex dx360 M4 system-board tray uses the following features and technologies:

- Two PCI Express® x16 adapter capabilities
The system-board tray has two connectors for PCI Express adapters. These connectors accept standard x16 or x8 adapters.
- Dynamic System Analysis (DSA) programs

The DSA programs collect and analyze system information to aid in diagnosing problems. The diagnostic programs collect a large amount of information, some of which is listed below:

- System configuration
- Network interfaces and settings
- Installed hardware
- Service processor status and configuration
- Vital product data, firmware, and uEFI configuration
- RAID controller configuration and status
- Event logs for ServeRAID controllers and service processors
- Operating system configuration³
- Installed device drivers³
- System services³

³ Online DSA only.

DSA comes in both online (run under the operating system) and preboot (runs its own media) versions. Online DSA, which is a web download, collects additional software information and operating system vital product data. DSA Preboot runs additional diagnostics, such as the memory test which can help to detect faulty hardware. Both versions can transmit data back to IBM for analysis by service and support or can have the results analyzed locally.

- Integrated Management Module

The Integrated Management Module (IMM) combines the baseboard management controller (BMC) and video controller functions in a single chip that provides basic service-processor environmental monitoring functions. If an environmental condition exceeds a threshold or if a system component fails, LEDs are illuminated on the BMC to help you diagnose the problem and the error is recorded in the error log. The BMC also provides remote server management capabilities, using the Intelligent Platform Management Interface (IPMI) version 2.0 protocol.

Note: In messages and documentation, the term "service processor" refers to the baseboard management controller.

- Integrated network support

The system-board tray comes with an integrated Intel dual-port Gigabit Ethernet controller, which supports connection to a 10 Mbps, 100 Mbps, or 1000 Mbps network.

- Storage capacity

The system-board tray supports one 3.5-inch simple-swap SATA, or two 2.5-inch simple-swap SATA/SAS/SSD, or four 1.8-inch simple-swap solid-state HDDs. An optional SAS controller must be installed for specific configurations.

- Supported memory options

The dx360 M4 server system-board tray can address up to 512 GB of system memory. The memory controller supports up to 16 industry-standard, registered ECC double-data-rate 3 (DDR3) -1066 DIMMs, -1333 DIMMs, and -1600 DIMMs or unbuffered ECC double-data-rate 3 (DDR3) -800 DIMMs, -1066 DIMMs, -1333 DIMMs, and -1600 DIMMs.

- Memory mirroring

Memory mirroring stores data in two pairs of DIMMs simultaneously.

- Redundant connection

The addition of an optional network interface card (NIC) provides a failover capability to a redundant Ethernet connection. If a problem occurs with the primary Ethernet connection, all Ethernet traffic that is associated with the primary connection is automatically switched to the redundant NIC. If the

applicable device drivers are installed, this switching can occur without data loss and without user intervention.

- ServeRAID support

The dx360 M4 server system-board tray supports ServeRAID adapters to create redundant array of independent disks (RAID) configurations.

IBM System x iDataPlex Rack (7825)

This specially designed rack is used in iDataPlex configurations.

The iDataPlex Rack is designated as IBM-installed for easy on-site installation. This designation, coupled with the factory integration services and optional on-site installation and verification of software, results in a ready-to-run cluster system.

The iDataPlex solution offers increased density in a holistic rack design for up to 100U: 84U of compute and 16U for network and PDU infrastructure. The mechanical design is optimized for cooling efficiency with half the airflow distance to reduce the amount of heat produced and cooling required.

For ease of serviceability, all hard drive, planar, and I/O access is from the front of the rack.

IBM System x iDataPlex 2U chassis (7913)

- SAS, SATA, and SSD hard drive support
- Shared high-efficiency power supply (optional redundant supply)
- Shared low-power consuming fans
- Choice of SAS, Ethernet, or iSCSI host interface

Power and cooling advantages

iDataPlex servers help pack more processors into the same power and cooling envelope, better utilizing floor space, and "right size" data center design. With the iDataPlex solution, less power per processor means more processing capacity per kilowatt. The iDataPlex can run cooler to deliver greater reliability.

IBM System x iDataPlex Rear Door Heat eXchanger (43V6048)

For dense data center environments, IBM offers smart rack-level heat management solutions such as the super-efficient IBM Rear Door Heat eXchanger. The water-cooled door is designed to dissipate heat generated from the back of the rack to reduce the overall room temperature. With this combination of benefits at the server and data center level, IBM systems deliver strong power and cooling benefits to iDataPlex clients.

The iDataPlex Rear Door Heat eXchanger for iDataPlex racks helps reduce the air temperature in your growing data center to approximately the same air temperature as that entering the rack, alleviating the need to add air conditioning units. This unobtrusive solution brings more cooling capacity to areas where the heat is greatest, around racks of servers with multiple, more powerful processors.

This cooling efficiency can help alleviate or possibly eliminate the need for additional air conditioning power and the associated construction cost.

Lab services

iDataPlex installation planning

Features:

- Assess the client's air conditioning and air distribution in support of iDataPlex systems

- Evaluate the need for any Rear Door Heat eXchanger installations and offer necessary guidance
- Review the iDataPlex power specifications based on the client's hardware configurations and offer necessary guidance

Typical benefits:

- Offers accurate environmental information as required for supporting iDataPlex systems most reliably
- Identifies the most efficient approach to the iDataPlex system cooling and ventilation needs
- Reduces potential installation shortfalls with open and ongoing communication with the client surrounding their specific iDataPlex system requirements

iDataPlex Systems Management

The System x iDataPlex product family offers systems management support through standards-based, scriptable interfaces. This support starts with the embedded Intelligent Platform Management Interface (IPMI) baseboard management controller (BMC).

For rapid diagnosis of problems, iDataPlex supports IBM Dynamic System Analysis (DSA) preboot diagnostics and online data collection for problem determination in supported Microsoft™ Windows™ and Linux™ environments. Refer to the Dynamic System Analysis product documentation for additional detail on DSA features.

iDataPlex compute nodes support IBM Systems Director with limited function. Refer to IBM Systems Director product documentation for specific details on supported functions on iDataPlex hardware.

The compute nodes have been tested with the Extreme Cluster Administration Toolkit (xCAT), an open source community-based cluster administration tool set tailored to scale-out compute environments. You can download xCAT from SourceForge at

<http://sourceforge.net/projects/xcat/>

For additional information on xCAT, contact your IBM Sales and Support Team, or visit

<http://www.xcat.org/>

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

Product positioning

IBM delivers innovations that meet your specific needs. The right choice depends on your business requirements, target applications, and operating environment. iDataPlex focuses on:

- Compute performance in gigaflops per dollar and performance per watt
- Rapidly scaling and large scale-out deployments
- Maximum usable compute density in the data center
- Software-resilient workloads such as HPC, grid, and cloud computing
- Optional redundant power supply for nongrid workloads

The iDataPlex hardware platform is positioned for large-scale enterprise deployments that rely on recovery-oriented architecture that primarily enables redundancy through the software layer instead of redundant hardware.

Product number

The following are newly announced features on the specified models of the IBM xSeries® 7160, 7912 machine type:

Description	MT	Model	Feature
IBM USB Memory Key for VMware ESXi 5.0 Update1	7912	AC1 MC1	A383
Intel Xeon Processor E5-2690 8C 2.9GHz 20MB Cache 1600MHz 135W	7912	AC1 MC1	A3MY
IBM System x iDataPlex dx360 M4 server (Base 2)	7912	AC1 MC1	A3NX
Intel Xeon Processor E5-2418L 4C 2.0GHz 10Mb Cache 1333MHz 50W	7160	AC1 MC1	A3P4
Add Intel Xeon Processor E5-2418L 4C 2.0GHz 10Mb Cache 1333MHz 50W	7160	AC1 MC1	A3P6

The following are features already announced for the 7912 machine type:

Description	MT	Model	Feature
Emulex 4Gb FC Single-Port PCI-E HBA for IBM System x	7912	AC1 MC1	1698
Emulex 4Gb FC Dual-Port PCI-E HBA for IBM System x	7912	AC1 MC1	1699
QLogic 4Gb FC Single-Port PCIe HBA for IBM System x	7912	AC1 MC1	3567
QLogic 4Gb FC Dual-Port PCIe HBA for IBM System x	7912	AC1 MC1	3568
VMware Specify	7912	AC1 MC1	9207
Preload by Hardware Feature Specify	7912	AC1 MC1	9220
IBM Blank USB Memory Key for VMware ESXi Downloads	7912	AC1 MC1	A2G0
Qlogic Embedded VFA FCoE/iSCSI License for IBM System x (FoD)	7912	AC1 MC1	A2TF
IBM USB Memory Key for VMware ESXi 5.0	7912	AC1 MC1	A2VC
Power Cable, High Power Graphics, 8P-8P+6P	7912	AC1 MC1	A3GL
NVIDIA VGX K1	7912	AC1 MC1	A3GM
NVIDIA VGX K2	7912	AC1 MC1	A3GN
Intel Xeon Phi 5110P	7912	AC1 MC1	A3GQ
NVIDIA Tesla K20	7912	AC1 MC1	A3J7
NVIDIA Tesla K20X	7912	AC1 MC1	A3J8

The following are newly announced features on the specified models of the IBM xSeries 3331 machine type:

Description	MT	Model	Feature
Intel Xeon Processor E5-2418L 4C 2.0GHz 10MB Cache 1333MHz 50W	3331	HC1	A3P6

Option SEOs

SEO
number Description

46W9170 Intel Xeon Processor E5-2418L 4C 2.0GHz 10MB Cache 1333MHz 50W

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=113-005>

Publications

The *User's Guide* , *Maintenance Guide* , and *Problem Determination and Service Guide* , for iDataPlex solutions, in US English versions, are available from

<https://www-304.ibm.com/systems/support/>

Under Product Support, select System x , and under Popular links, select Publications lookup. Select the Product family and click on continue.

IBM Systems Information Center provides you with a single information center where you can access product documentation for IBM systems hardware, operating systems, and server software. Through a consistent framework, you can efficiently find information and personalize your access. The IBM Systems information Center is at

<http://publib14.boulder.ibm.com/infocenter/systems>

Services

Product customization services

IBM System x iDataPlex

The following product customization services are included with iDataPlex .

For information, refer to the following and contact your IBM representative.

Description	Feature
iDataPlex Rack Assembly (100U)	2312
Rack Installation of 1U Component in iDataPlex	2313
Rack Installation of >1U Component in iDataPlex	2314
iDataPlex Hardware / Configuration Verification	2315

Applicable quantities are configuration-dependent and will be determined in the configuration process.

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.

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 is 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 will 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

Supported Xeon processors:

- Intel Xeon Processor E5-2603 4C 1.8 GHz 10 MB Cache 1066 MHz 80W
- Intel Xeon Processor E5-2637 2C 3.0 GHz 5 MB Cache 1600 MHz 80W

- Intel Xeon Processor E5-2609 4C 2.40 GHz 10 MB Cache 1066 MHz 80W
- Intel Xeon Processor E5-2620 6C 2.0 GHz 15 MB Cache 1333 MHz 95W
- Intel Xeon Processor E5-2630 6C 2.3 GHz 15 MB Cache 1333 MHz 95W
- Intel Xeon Processor E5-2640 6C 2.5 GHz 15 MB Cache 1333 MHz 95W
- Intel Xeon Processor E5-2650 8C 2.0 GHz 20 MB Cache 1600 MHz 95W
- Intel Xeon Processor E5-2660 8C 2.2 GHz 20 MB Cache 1600 MHz 95W
- Intel Xeon Processor E5-2680 8C 2.7 GHz 20 MB Cache 1600 MHz 130W
- Intel Xeon Processor E5-2667 6C 2.9 GHz 15 MB Cache 1600 MHz 130W
- Intel Xeon Processor E5-2630L 6C 2.0 GHz 15 MB Cache 1333 MHz 60W
- Intel Xeon Processor E5-2650L 8C 1.8 GHz 20 MB Cache 1600 MHz 70W
- Intel Xeon Processor E5-2670 8C 2.6 GHz 20 MB Cache 1600 MHz 115W
- Intel Xeon Processor E5-2665 8C 2.4 GHz 20 MB Cache 1600 MHz 115W

Note: Processors greater than 95W are supported only in special bid configurations generated in the x-config configurator due to limitations in tracking chassis power requirements.

iDataPlex dx360 M4 server specifications

Electrical

- 100 - 127 (nominal) V ac; 50 Hz or 60 Hz; 11.72 A
- 200 - 240 (nominal) V ac; 50 Hz or 60 Hz; 5.36 A
- Input kilovolt-amperes (kVA) (approximately):
 - Minimum configuration: 0.150 kVA
 - Maximum configuration: 1.148 kVA
- Btu output:
 - Ship configuration: 512.28 Btu/hr (150 watts)
 - Full configuration: 3,920.63 Btu/hr (1,148 watts)

Power requirements (per rack) max configuration

- Operating voltage: 100 - 240 V ac at 50 Hz or 60 Hz
 - Note:** For nonredundant power supply.
- Electrical output: 41.5 kW (maximum)
- Power source loading: 51.9 kVA (maximum) - Three 60 A 3ph PDUs at 17.3 kVA each
- Thermal output: 41.5 kW (141,460 Btu/hr) (maximum configuration)

900-watt PSU electrical power specifications

- 100 - 240 V ac auto-ranging operation
- Built-in overload and surge protection
- 100 - 127 (nominal) V ac; 50 or 60 Hz; 10.0 A (maximum)
- 200 - 240 (nominal) V ac; 50 or 60 Hz; 5.0 A (maximum)

750-watt PSU electrical power specifications

- 100 - 240 V ac auto-ranging operation
- Built-in overload and surge protection
- 100 - 127 (nominal) V ac; 50 or 60 Hz; 8.9 A (maximum)
- 200 - 240 (nominal) V ac; 50 or 60 Hz; 4.5 A (maximum)

550-watt PSU electrical power specifications

- 100 - 240 V ac auto-ranging operation
- Built-in overload and surge protection
- 100 - 127 (nominal) V ac; 50 or 60 Hz; 6.5 A (maximum)
- 200 - 240 (nominal) V ac; 50 or 60 Hz; 3.3 A (maximum)

Standards

Equipment approvals and safety

- FCC - Verified to comply with Part 15 of the FCC Rules, Class A
- Canada ICES-003, issue 5, Class A
- UL/IEC 60950-1
- CSA C22.2 No. 60950-1
- NOM-019
- Argentina IEC60950-1

Operating environment

The iDataPlex dx360 M4 products are designed to operate in a general business environment, such as a Class A or A1, temperature and humidity-controlled room.

Air temperature:

- Server on: 5°C to 40°C (41.0°F to 104°F); altitude: 0 to 915 m (3,000 ft)
- Server off: 5°C to 45°C (41.0°F to 113°F)
- Shipment: -40°C to +60°C (-40°F to 140°F)

Humidity:

- Server on: 8% to 85% , Max. Dew Point 24°C, Max. rate of change 5°C/hr
- Server off: 8% to 80%, Max. Dew Point 27°C
- Design to ASHRAE Class A3, ambient of 40°C, with relaxed support
- Support cloud-similar workload with no performance degradation acceptable (Turbo-Off)
- Under no circumstance, can any combination of worst case workload and configuration result in system shutdown or design exposure at 40°C
- Declared noise level: 5.7 bels (idling)

Hardware requirements

For service, the iDataPlex requires a compatible:

- Monitor
- Combination USB keyboard and pointing device, such as IBM part number 40K5372
- USB CD-RW/DVD drive, such as the IBM and Lenovo part number 73P4515 or 73P4516

Note: Rack must have 784.86 mm (30.9 in) minimum clearance on the front and back sides of the rack to allow service.

Software requirements

The following network operating systems are supported in the iDataPlex :

- Microsoft
 - Microsoft Windows Server 2008 R2

- Microsoft Windows Server 2008, Datacenter x64 Edition
- Microsoft Windows HPC Server 2008
- Linux
 - Red Hat Enterprise Linux 5 Server with Xen x64 Edition
 - Red Hat Enterprise Linux 6 Server x64 Edition
 - SUSE Linux Enterprise Server 10 x64 Edition
 - SUSE Linux Enterprise Server 11 with Xen x64 Edition
 - SUSE Linux Enterprise Server 11 x64 Edition
- VMware
 - ESX 4.1, ESXi 4.1, and 5.0

Note: For additional support, certification, and version information on network operating systems, visit

<http://www-03.ibm.com/servers/eserver/serverproven/compat/us/>

Compatibility

All components of the System x iDataPlex are compatible when purchased as a supported iDataPlex solution.

Limitations

System x iDataPlex options are supported only when ordered and deployed in a iDataPlex solution. They will not be supported when ordered without a corresponding order for an iDataPlex configuration.

Regarding the use of solid-state disk drives, solid-state memory cells have an intrinsic, finite number of write cycles that each cell can incur. As a result, each solid-state device has a maximum amount of write cycles to which it can be subjected, documented as TBW (Total Bytes Written). IBM is not responsible for replacement of hardware that has reached the maximum guaranteed number of write cycles. This limit may be revealed as the device failing to respond to system-generated commands or becoming incapable of being written to. Additional information is available at

<http://www-03.ibm.com/systems/x/options/storage/solidstate/index.html>

Planning information

Customer responsibilities

Installation of hardware components is provided by IBM on the iDataPlex .

Clients are responsible for preparing their site for installation.

You are expected to review the *Installation Planning Guide* before the delivery of your iDataPlex . Clients' responsibilities must be verified as complete before scheduling an IBM installer to come on site. Visit

<https://www-304.ibm.com/systems/support/>

To service your iDataPlex or obtain IBM service, the iDataPlex requires a compatible:

- Monitor
- Combination USB keyboard and pointing device, such as IBM part number 40K5372
- USB CD-RW/DVD drive, such as the IBM and Lenovo part number 73P4515 or 73P4516

Note: Rack must have 784.86 mm (30.9 in) minimum clearance on the front and back sides of the rack to allow service.

Cable orders

All cables are supplied with the iDataPlex . Depending on the applications, the cables may be fully installed, partially installed (plugged at one end and packaged for shipping), or included as part of a shipment group.

Installability

Installation of hardware components is provided by IBM with the exception of plumbing connections to the optional Rear Door Heat eXchanger. (Refer to the [Limitations](#) section for additional information.)

Packaging - System x iDataPlex shipping contents

iDataPlex CD, which contains the following documentation as portable document format (PDF) files:

- IBM Safety Information (multilingual)
- IBM Rack Safety Information (multilingual)
- IBM Environmental Notices and User Guide (multilingual)
- IBM iDataPlex Rack Type 7825 Installation and User's Guide
- IBM iDataPlex Rack Type 7197 Installation and User's Guide
- IBM Rear Door Heat eXchanger for the iDataPlex Rack Installation and Maintenance Guide
- IBM System x iDataPlex dx360 M4 User's Guide for Type 7912, 7913
- IBM System x iDataPlex dx360 M4 User's Guide for Type 7918, 7919
- IBM System x iDataPlex dx360 M4 Problem Determination and Service Guide for Type 7912, 7913
- IBM System x iDataPlex dx360 M4 Problem Determination and Service Guide for Type 7918, 7919
- Licenses and Attributions Documents
- IBM DPI C13 PDU+, DPI C13 3-phase PDU+ DPI C19 PDU+, and DPI C19 3-phase PDU+ Installation and Maintenance Guide
- IBM License Agreement for Machine Code
- UEFI Disclaimer Notices File
- IBM Types 7912, 7918, and Rear Door Heat eXchanger. Warranty and Support Information is in printed format.

Important Notices multilingual document that contains all of the legal, safety, emissions, and environmental statements in printed format.

Supplies

None

Security, auditability, and control

This offering uses the security and auditability features from standard IBM offerings and supported Linux distributions.

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

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support all at no additional cost to you.

For System x users running Windows or Linux , Electronic Service Agent is available as a download from

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

Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM , which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type "smitty esa_main", and select "Configure Electronic Service Agent ." In addition, ESA now includes a powerful web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent , refer to

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

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

Benefits

Increased uptime: The Electronic Service Agent tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the "symptoms," diagnosing the error, and manually calling IBM Support to open a problem record. Its 24 x 7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM . The Electronic Service Agent tool securely transmits either via the Internet (HTTPS or VPN) or modem, and can be configured to communicate securely through gateways to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system. System inventory information is stored in a secure database, which is protected behind IBM firewalls. It is viewable only by the customer and IBM . The customer's business applications or business data is never transmitted to IBM .

More accurate reporting: Since system information and error logs are automatically uploaded to the IBM Support center in conjunction with the service request, customers are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM , problem error data

is run through a data knowledge management system and knowledge articles are appended to the problem record.

Customized support: Using the IBM ID entered during activation, customers can view system and support information in the "My Systems" and "Premium Search" sections of the Electronic Support website at

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

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent . Reports are available for any system associated with the customer's IBM ID. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium Search and the Electronic Service Agent information that has been collected from your system, customers are able to see search results that apply specifically to their systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or visit

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

Terms and conditions

MES discount applicable

No

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 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.

Customer setup

Yes

Machine code

Same license terms and conditions as base machine.

Optional features warranty period

- Optional features - One year

Prices

For current prices, contact IBM at 888-Shop-IBM (746-7426) or visit

<http://www-03.ibm.com/systems/x/>

To locate the web price, search on the feature number in the Search field.

The following are newly announced features on the specified models of the IBM xSeries 7160 machine type:

Description	Model Number	Feature Number	Initial/MES/Both/Support
Intel Xeon Processor E5-2418L 4C 2.0GHz 10Mb Cache 1333MHz 50w	AC1 MC1	A3P4	Initial Initial
Addl Intel Xeon Processor E5-2418L 4C 2.0GHz 10Mb Cache 1333MHz 50W	AC1 MC1	A3P6	Initial Initial

The following are newly announced features on the specified models of the IBM xSeries 7912 machine type:

Description	Model Number	Feature Number	Initial/MES/Both/Support
IBM USB Memory Key for VMware ESXi 5.0 Update1	AC1 MC1	A383	Initial Initial
Intel Xeon Processor E5-2690 8C 2.9GHz 20MB Cache 1600MHz 135W	AC1 MC1	A3MY	Initial Initial
IBM System x iDataPlex dx360 M4 server (Base 2)	AC1 MC1	A3NX	Initial Initial

The following are features already announced for the 7912 machine type:

Description	Model Number	Feature Number	Initial/MES/Both/Support	CSU
Emulex 4Gb FC Single-Port PCI-E HBA for IBM System x	AC1 MC1	1698	Initial Initial	
Emulex 4Gb FC Dual-Port PCI-E HBA for IBM System x	AC1 MC1	1699	Initial Initial	
QLogic 4Gb FC Single-Port PCIe HBA for IBM System x	AC1 MC1	3567	Initial Initial	
QLogic 4Gb FC Dual-Port PCIe HBA for IBM System x	AC1 MC1	3568	Initial Initial	
VMware Specify	AC1 MC1	9207	Initial Initial	
Preload by Hardware Feature Specify	AC1 MC1	9220	Initial Initial	
IBM Blank USB Memory Key for VMware ESXi Downloads	AC1 MC1	A2G0	Initial Initial	
Qlogic Embedded VFA FCoE/iSCSI License for IBM System x (FoD)	AC1	A2TF	Initial	Yes

	MC1		Initial
IBM USB Memory Key for VMware ESXi 5.0	AC1	A2VC	Initial
	MC1		Initial
Power Cable, High Power Graphics, 8P-8P+6P	AC1	A3GL	Initial
	MC1		Initial
NVIDIA VGX K1	AC1	A3GM	Initial
	MC1		Initial
NVIDIA VGX K2	AC1	A3GN	Initial
	MC1		Initial
Intel Xeon Phi 5110P	AC1	A3GQ	Initial
	MC1		Initial
NVIDIA Tesla K20	AC1	A3J7	Initial
	MC1		Initial
NVIDIA Tesla K20X	AC1	A3J8	Initial
	MC1		Initial

The following are features already announced for the 3331 machine type:

Description	Model Number	Feature Number	Initial/MES/Both/Support
Intel Xeon Processor E5-2418L	4C 2.0GHZ 10MB Cache 1333MHZ 50W	4C 10MB A3P6	Initial/MES

Option SEOs

Description	SEO Number	Initial/MES/Both/Support	CSU
Intel Xeon Processor E5-2418L 4C 2.0GHZ 10MB Cache 1333MHZ 50W	46W9170	Both	Yes

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Corrections

(Corrected on April 12, 2013)

Revisions to At a glance section.