



IBM Flex System is the next generation of smarter computing

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At a glance

IBM® Flex System p260 Compute Node is a half-wide Information Technology Element (ITE) server with two 4-core 64-bit 3.3 GHz processors, or two 8-core 64-bit 3.2 or 3.5 GHz processors and 16 DIMM slots which can contain up to a maximum of 256 GB of memory. Two optional SAS Small Form Factor (SFF) 2.5-inch hard disk drives (HDDs) or 1.8-inch SATA solid-state drives (SSDs) can be installed in the p260 Compute Node. The p260 is part of IBM Flex System, a new category of computing that integrates multiple server architectures, networking, storage, and system management capability into a single system.

IBM Flex System offerings include:

- IBM Flex System Enterprise Chassis
- IBM PureFlex System 42U Rack
- IBM Flex System Manager
- IBM Flex System Compute Nodes
- IBM Flex System Scalable Network and Storage Switches

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

Overview

IBM PureFlex System is the next generation of smarter computing. It integrates multiple server architectures, networking, storage, and system management capability into a single system that is easy to deploy and manage. IBM Flex System has full "built-in" virtualization support of servers, storage, and networking to speed provisioning and increase resiliency. In addition, it supports open and industry standards such as operating systems, networking and storage fabrics, virtualization, and system management protocols to easily fit within existing and future data center environments. IBM Flex System is scalable and extendable with multigeneration upgrades to protect and maximize IT investments.

The most forward-thinking companies will completely rethink the way they deploy and manage their IT environments by evolving to a more open, agile, and integrated computing system that is dynamically managed from a single vantage point to simultaneously maximize efficiency and innovation.

By doing this, companies can:

- Improve efficiency and utilization through integration
- Optimize heterogeneous environments by providing the right architecture for the right workload
- Increase speed and dexterity at the enterprise level
- Improve control through simplicity, automation, compliance, and security
- Improve economics through faster time-to-value driven by real-time scalability
- Deliver insights faster to gain a competitive advantage

IBM PureFlex System will enable enterprises to realize these benefits while minimizing the complexity inherent in a highly virtualized environment.

Key prerequisites

- An IBM Flex System Enterprise Chassis (7893-92X)
- An IBM PureFlex System 42U Rack (7953-94X)
- An operating system (IBM AIX®, IBM i operating system, Red Hat Linux™, or SUSE Linux)

Planned availability date

- May 21, 2012, for all features except for features EFD3 and EFD5
- June 15, 2012 for features EFD3 and EFD5

Description

IBM Flex System p260 Compute Node

The IBM Flex System p260 Compute Node is the latest high-density Information Technology Element (ITE) server with POWER7® and EnergyScale™ technology.

The IBM Flex System p260 Compute Node is a half-wide ITE server with two 4-core 64-bit 3.3 GHz processors, or two 8-core 64-bit 3.2 or 3.5 GHz processors and 16 DIMM slots which can contain up to a maximum of 256 GB of memory. Two optional SAS Small Form Factor (SFF) 2.5-inch hard disk drives (HDDs) or 1.8-inch SATA solid-state drives (SSDs) can be installed in the p260 Compute Node.

Integrated features on the p260 Compute Node include:

- USB 2.0 controller with front panel port
- SAS controller
- Service processor
- One USB port
- Two PCIe expansion card slots

The IBM Flex System p260 Compute Node can be installed only in the IBM Flex System Enterprise Chassis (7893-92X). The chassis has 14 ITE bays for ITE servers and supports up to 14 half-wide ITEs or 7 full-wide ITEs.

In short-term extended thermal conditions, the p260 Compute Node automatically reduces the frequency of the processor to maintain acceptable thermal or power levels. The processor frequency will automatically cycle back up as thermal or power conditions improve.

Clients should be aware that there may be applications that are sensitive to processor frequency changes. For instance, frequency reductions could potentially impact benchmarking or applications and tools that depend on execution times for

accounting, CPU utilization, or profiling. It is recommended that clients check with their individual application vendors to see if there are possible impacts.

IBM Flex System p260 Compute Node features and benefits include:

- Highly efficient and flexible design of the IBM ITE
 - Densely pack more servers into a smaller space
 - Tailor the system to meet varied business requirements
 - Integrate networking switch infrastructure for improved cabling and data center maintenance
 - Deploy in virtually any office environment for quieter, highly secure, and contaminant-protected operation
- Pioneering IBM EnergyScale technology and software (an optional feature available for an additional charge)
 - Generate less heat by managing application utilization and server energy consumption
 - Use less energy to cool the system
- Industry-leading PowerVM™ virtualization technology
 - Potentially reduce infrastructure costs by doing more with fewer servers
 - Simplify IT operations to leverage storage, network, and computing resources to control costs and be more responsive
- Innovative reliability features and systems management
 - Help expedite hardware repairs and reduce service time
 - Enable scheduled maintenance with proactive monitoring of critical system components to help reduce unplanned failures
- Choice of IBM AIX, IBM i, or Linux operating environment
 - Standardize on a single platform that runs the large and varied portfolio of applications that support your business

IBM PureFlex System

The IBM PureFlex System consists of predefined, preconfigured Flex System components to simplify purchasing and provide the total Flex System integrated value proposition.

The IBM Flex System p260 Compute Node can be ordered as part of a PureFlex System. There are three IBM PureFlex System offerings available:

- IBM PureFlex System Express® for smaller installations (#EFD1)
- IBM PureFlex System Standard for application systems (#EFD2)
- IBM PureFlex System Enterprise scalable cloud deployments; includes redundancy for resilient operation (#EFD3)

A PureFlex System consists of:

- A Flex System Compute Node, chosen from:
 - Flex System p260 (7895-22X)
 - Flex System p460 (7895-42X)
 - Flex System x240 (7863-10X)

Note: The Flex System p260 does not offer an IBM PureFlex System Enterprise. The Flex System p460 does not offer an IBM PureFlex System Express. IBM PureFlex System Enterprise requires two compute nodes.

- A Flex System Enterprise Chassis (7893-92X)
- A Flex System Manager (7955-01M)
- A Storwize® V7000 Disk System (2076-124)
- Two IBM 1455 BNT® Rack Switches G8264 Model 64C (with IBM PureFlex Enterprise only, with the Flex System p460)

- Two IBM 1455 BNT Rack Switches G8052 Model 48E (with IBM PureFlex Enterprise only, with the Flex System p460)
- Two IBM 2498 SAN24B-4 Express Model B24 (with IBM PureFlex Enterprise only, with the Flex System p460)
- An IBM PureFlex System 42U Rack (7953-94X)

Additional Flex System Compute Nodes, Flex System Chassis, and IBM 42U Slim Racks can be ordered once the basic requirements for the Flex System are met. These additional orders will be indicated by feature number EFD4 (Expansion Option) or EFD5 (Custom Expansion). The Flex System Manager is not available with EFD4. Storwize V7000 Disk Systems can be ordered separately without meeting the requirements for the Flex System.

The following IBM PureFlex System configurations will not be supported until April 24, 2012:

- Expansion Option (#EFD4) on the Flex System Enterprise Chassis (7893-92X)
- Expansion Option (#EFD4) on the Storwize V7000 Disk System (2076-124)
- IBM PureFlex Enterprise (#EFD3) on the Flex System p460 Compute Node (7895-42X)
- IBM PureFlex Enterprise (#EFD3) and Expansion Option (#EFD4) on the IBM 1455 BNT Rack Switches (1455-64C/48E) and the IBM 2498 SASN24B-4 Express Model B24 (2498-B24)

Contact your local Sales Representative for custom configuration requests.

Information on minimum configurations and options when ordering those products can be found in their online *Sales Manuals* at:

<http://www.ibm.com/common/ssi>

| Product | Sales Manual |
|-------------------------------------|--------------|
| IBM Flex System p260 Compute Node | 7895-22X |
| IBM Flex System p460 Compute Node | 7895-42X |
| IBM Flex System x240 Compute Node | 7863-10X |
| IBM Flex System Enterprise Chassis | 7893-92X |
| IBM PureFlex System 42U Rack | 7953-94X |
| IBM Storwize V7000 Disk System | 2076-124 |
| IBM 1455 BNT Rack Switch G8264 | 1455-64C |
| IBM 1455 BNT Rack Switch G8052 | 1455-48E |
| IBM 2498 SAN24B-4 Express Model B24 | 2498-B24 |

For more information on IBM PureFlex Systems, visit

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

IBM PureFlex System Express

The IBM PureFlex System Express requirements when ordering the IBM Flex System p260 Compute Node are:

- 1 x Flex System p260 Compute Node (7895-22X), with the following features:
- | | |
|----------------------------|-----------------------|
| 1 x #EPR1, #EPR3, or #EPR5 | Processor Module |
| 8 x #8491 with #EPR1 | Processor Activations |

or

- | | |
|-----------------------------|----------------------------------|
| 16 x #8491 with #EPR3/#EPR5 | Processor Activations |
| 8 x #8199 | 128 GB Minimum Memory |
| 1 x #1762 | IBM Flex System EN4054 |
| | 4-port 10Gb Ethernet Adapter |
| 1 x #1764 | IBM Flex System FC3172 |
| | 2-port 8Gb Fibre Channel Adapter |
| 1 x #4646 | Integrate ITE in Chassis |
| 1 x #4651 | Rack indicator, Rack #1 |

| | |
|-----------------------------|-----------------------------------|
| 1 x #4681 | Chassis specify, Chassis #1 |
| 1 x #5005 | Software Preinstall |
| 1 x #2145 or #2146 or #2147 | Operating System Indicator |
| 1 x #0265 or #0266 or #0267 | Partition Specify |
| 1 x #7067 | Top Cover, No HDDs or SSDs |
| 8/16 x #5227 | PowerVM Standard (per core) |
| 1 x #ED21-#ED2E | Installation/User Guide |
| 1 x #ESCO | Shipping and Handling (no charge) |
| 1 x #EFD1 or #EFD4 | PureFlex System Order Indicator |

Note: #1762 and #1764 are always required in the configuration. #8199, #5277, and #7067 are minimums and can be replaced. #0566 or #0567 is required with #2145.

| | |
|---|--|
| 1 x Flex System Enterprise Chassis (7893-92X), with the following features: | |
| 1 x #3593 | IBM Flex System EN4093 10Gb Virtual Fabric Scalable Switch |
| 1 x #3595 | IBM Flex System FC3171 8Gb SAN Switch |
| 5 x #EB29 | 1000Base-T SFP RJ45 Transceiver |
| 2 x #3282 | 10 GbE SFP+ Transceiver |
| 4 x #3286 | 8 GB SFP+ Transceiver |
| 1 x #9039 | Base CME |
| 1 x #3592 | Redundant CME |
| 2 x #9059 | Base Power Module (2X) |
| 2 x #4558 | Power Cord (2.5M) to PDU/UPS |
| 1 x #9038 | Base Fans (4X) |
| 1 x #4649 | Rack Integration Services |
| 1 x #4651 | Rack Indicator, Rack #1 |
| 2 x #4681 | Chassis Specify, Chassis #1 |
| 2 x #1111 | CAT5E Ethernet Cable, 3M Blue |
| 1 x #0437 | Integrate p260 in Chassis |
| 1 x #0466 | Integrate FSM in Chassis |
| 1 x #EFM1 | Open Fabric Manager |
| 1 x #EPU1-#EPUE | System Documentation and Software |
| 1 x #ESCO | Shipping and Handling (no charge) |
| 1 x #EFD1 or #EFD4 | PureFlex System Order Indicator |

Note: #EFD4 does not require the following features: #0466, #3282, or #EB29. #EFD4 requires #0492.

| | |
|--|-----------------------------------|
| 1 x Flex System Manager (7955-01M), with the following features: | |
| 1 x #EB31 | Platform Manager S/W Bundle |
| 4 x #EM09 | 32 GB Memory |
| 2 x #1771 | IBM 200 GB 1.8" SATA SSD |
| 1 x #3767 | 1TB 7.2K RPM 2.5" SATA Disk Drive |
| 1 x #4646 | Integrate ITE in Chassis |
| 1 x #4651 | Rack Indicator, Rack #1 |
| 1 x #4681 | Chassis Specify, Chassis #1 |
| 1 x #ED11-ED1E | System Publications and Media |
| 1 x #ESCO | Shipping and Handling (no charge) |
| 1 x #EFD1 | PureFlex System Order Indicator |

| | |
|---|---------------------------------|
| 1 x Storwize V7000 Disk System (2076-124), with the following features: | |
| 1 x #0010 | Storage Engine Preload |
| 2 x #5305 | 5 m Fiber Optic Cable |
| 8 x #3206 | 600 GB 2.5-inch 10k HDD |
| 2 x #3512 or #3514 | 200 or 400 GB 2.5-inch SSD |
| 2 x #6008 | Cache 8 GB |
| 1 x #9730 | Power Cord - PDU Connection |
| 2 x #9801 | AC Power Supply |
| 1 x #4651 | Rack Indicator, Rack #1 |
| 1 x #EFD0 | V7000 Routing Code |
| 1 x #9170 | Controller # 1 Group |
| 1 x #EFD1 or #EFD4 | PureFlex System Order Indicator |

Note: #EFD4 does not require the following features: #3206, #3512, #3514, or #9170. #EFD4 requires #9171.

| | |
|---|---------------------------------|
| 1 x IBM PureFlex System 42U Rack (7953-94X), with the following features: | |
| 4 x #4651 | Rack Indicator, Rack #1 |
| 2 x #7189 or #7196 | Optional PDUs |
| 1 x #ER01 | Integrate Chassis in Rack |
| 1 x #ER04 | Rack Content Specify - 2076-124 |

| | |
|--------------------|-----------------------------------|
| 1 x #ER1B | Reserve 1U empty space - bottom |
| 1 x #ER1T | Reserve 1U empty space - top |
| 1 x #EC02 or #EC05 | Rack Rear Door or RDHX |
| 1 x #EC03 | Side Doors |
| 1 x #EC06 | Rack Front Door |
| 1 x #ESCO | Shipping and Handling (no charge) |
| 1 x #EFD1 or #EFD4 | PureFlex System Order Indicator |

Note: #EFD4 does not require the following features: #ER01, #ER03, #ER04, #4651, #7189, or #7196. #EFD4 requires #4652 and either #EC03 or #EC04.

IBM PureFlex System Standard

The IBM PureFlex System Standard requirements when ordering the IBM Flex System p260 Compute Node are:

1 x Flex System p260 Compute Node (7895-22X), with the following features:
 1 x #EPR1, #EPR3, or #EPR5 Processor Module
 8 x #8491 with #EPR1 Processor Activations

or

| | |
|-----------------------------|--|
| 16 x #8491 with #EPR3/#EPR5 | Processor Activations |
| 8 x #8199 | 128 GB Minimum Memory |
| 1 x #1762 | IBM Flex System EN4054 4-port 10Gb Ethernet Adapter |
| 1 x #1764 | IBM Flex System FC3172 2-port 8Gb Fibre Channel Adapter |
| 1 x #4646 | Integrate ITE in Chassis |
| 1 x #4651 | Rack Indicator, Rack #1 |
| 1 x #4681 | Chassis specify, Chassis #1 |
| 1 x #5005 | Software Preinstall |
| 1 x #2145 or #2146 or #2147 | Operating System Indicator |
| 1 x #0265 or #0266 or #0277 | Partition Specify |
| 1 x #7067 | Top Cover, No HDDs or SSDs |
| 8/16 x #5227 | PowerVM Standard (per core) |
| 1 x #ED21-#ED2E | Installation/User Guide |
| 1 x #EFD2 or #EFD4 | PureFlex System Order Indicator |

Note: #1762 and #1764 are always required in the configuration. #8199, #5227, and #7067 are minimums and can be replaced. #0566 or #0567 is required with #2145.

1 x Flex System Enterprise Chassis (7893-92X), with the following features:
 1 x #3593 IBM Flex System EN4093 10Gb
Virtual Fabric Scalable Switch
 2 x #3595 IBM Flex System FC3171 8Gb
SAN Switch
 5 x #EB29 1000Base-T SFP RJ45 Transceiver
 4 x #3282 10 GbE SFP+ Transceiver
 4 x #3286 8 Gb SFP+ Transceiver
 1 x #9039 Base CME
 1 x #3592 Redundant CME
 2 x #9059 Base Power Module (2X)
 2 x #3590 Redundant Power Module
 4 x #4558 Power Cord (2.5M) to PDU/UPS
 1 x #9038 Base Fans (4X)
 1 x #7805 Additional Fans (2X)
 1 x #4649 Rack Integration Services
 1 x #4651 Rack Indicator, Rack #1
 2 x #4681 Chassis Specify, Chassis #1
 2 x #1111 CAT5E Ethernet Cable, 3M Blue
 1 x #0437 Integrate p260 in Chassis
 1 x #0466 Integrate FSM in Chassis
 1 x #EFM1 Open Fabric Manager
 1 x #EPU1-#EPUE System Documentation and Software
 1 x #ESCO Shipping and Handling (no charge)
 1 x #EFD2 or #EFD4 PureFlex System Order Indicator

Note: #EFD4 does not require the following features: #0466, #3282, or #EB29. #EFD4 requires #0492.

1 x Flex System Manager (7955-01M), with the following features:

| | |
|----------------|--|
| 1 x #EB32 | Virtualization Manager S/w Bundle Indicator |
| 4 x #EM09 | 32 GB Memory |
| 2 x #1771 | IBM 200 GB 1.8" SATA SSD |
| 1 x #3767 | 1TB 7.2K RPM 2.5" SATA Disk Drive |
| 1 x #4646 | Integrate ITE in Chassis |
| 1 x #4651 | Rack Indicator, Rack #1 |
| 1 x #4681 | Chassis Specify, Chassis #1 |
| 1 x #ED11-ED1E | System Publications and Media |
| 1 x #ESCO | Shipping and Handling (no charge) |
| 1 x #EFD2 | PureFlex System Order Indicator |

1 x Storwize v7000 Disk System (2076-124), with the following features:

| | |
|--------------------|---------------------------------|
| 1 x #0010 | Storwize v7000 S/w Preload |
| 4 x #5305 | 5m Fiber Optic Cable |
| 8 x #3206 | 600 GB 2.5-inch 10k HDD |
| 2 x #3512 or #3514 | 200 or 400 GB 2.5-inch SSD |
| 2 x #6008 | Cache 8 GB |
| 1 x #9730 | Power Cord - PDU Connection |
| 2 x #9801 | AC Power Supply |
| 1 x #9170 | Controller #1 Group |
| 1 x #4651 | Rack Indicator, Rack #1 |
| 1 x #EFD0 | V7000 Routing Indicator |
| 1 x #EFD2 or #EFD4 | PureFlex System Order Indicator |

Note: #EFD4 does not require the following features: #3206, #3512, #3514, or #9170. #EFD4 requires #9171.

1 x IBM PureFlex System 42U Rack (7953-94X), with the following features:

| | |
|--------------------|-----------------------------------|
| 4 x #4651 | Rack Indicator, Rack #1 |
| 2 x #7189 or #7196 | Optional PDUs |
| 1 x #ER01 | Integrate Chassis in Rack |
| 1 x #ER04 | Rack Content Specify - 2076-124 |
| 1 x #ER1B | Reserve 1U empty space - bottom |
| 1 x #ER1T | Reserve 1U empty space - top |
| 1 x #EC02 or #EC05 | Rack Rear Door or RDHX |
| 1 x #EC03 | Side Doors |
| 1 x #EC06 | Rack Front Door |
| 1 x #ESCO | Shipping and Handling (no charge) |
| 1 x #EFD2 or #EFD4 | PureFlex System Order Indicator |

Note: #EFD4 does not require the following features: #ER01, #ER03, #ER04, #4651, #7189, or #7196. #EFD4 requires #4652 and either #EC03 or #EC04.

PowerVM Editions (Advanced Power® Virtualization) (Optional)

The IBM Flex System p260 Compute Node supports PowerVM technology. The p260 is designed to make it more affordable to consolidate multiple independent applications on a single ITE server using the same proven virtualization technologies offered on IBM Power servers.

The p260 supports three leading-edge virtualization technologies: PowerVM Express Edition (#5225), PowerVM Standard Edition (#5227), and PowerVM Enterprise Edition (#5228).

- PowerVM Express Edition supports up to three partitions per system (VIOS, AIX, Linux, and/or IBM i) which share processors and I/O. No hardware management console (HMC) is required or supported. It allows users to try out the Integrated Virtualization Manager (IVM) and the Virtual I/O Server (VIOS), which they would not get with an HMC.
- PowerVM Standard Edition makes the p260 an ideal platform for consolidation of AIX, Linux, and IBM i operating system applications, helping clients reduce infrastructure complexity and cost. Offering an intuitive, web-based interface for managing virtualization within a single compute node, the IVM component of VIOS allows the small business IT manager to quickly and easily set up and manage logical partitions (LPARs). It also enables Virtual I/O and Virtual Ethernet so that storage and communications adapters can be shared among all the LPARs running on the p260. Ultimately, IBM Micro-Partitioning® technology allows each

processor core to be subdivided into as many as 10 virtual servers. And since the p260 is built with POWER7 technology, other advanced virtualization functions such as Shared Dedicated Capacity may be exploited.

- PowerVM Enterprise Edition includes all the features of PowerVM Standard Edition plus a new capability called Live Partition Mobility. Live Partition Mobility allows for the movement of a running AIX or Linux partition from one POWER7 processor-based server to another. Designed to have no application downtime, Live Partition Mobility could result in better system utilization, improved application availability, and potential energy savings. With Live Partition Mobility, planned application downtime due to regular server maintenance can be a thing of the past. Software Maintenance for Virtual I/O Server (577x-PVE) must be purchased with VIOS (5765-PVE). PowerVM Enterprise Edition must be purchased separately.

Note: PowerVM Express Edition, PowerVM Standard Edition, and PowerVM Enterprise Edition are optional when running AIX or Linux. PowerVM Express Edition, PowerVM Standard Edition, or PowerVM Enterprise Edition is required when running the IBM i operating system on the p260.

Capacity Backup (CBU) Support for IBM i on the IBM Flex System p260 Compute Node

The CBU designation can help meet your requirements for use of a second system as backup, high availability, and disaster recovery. It enables you to temporarily transfer IBM i processor entitlements and IBM i user entitlements purchased for a primary machine to a secondary CBU system. Temporarily transferring these resources, instead of purchasing them for a secondary system, may result in significant savings.

The CBU specify feature number 4898 for the IBM Flex System p260 Compute Node (7895-22X) is available as part of a new compute node purchase. This CBU feature cannot be added to an existing compute node.

Certain system prerequisites must be met, and system registration and approval is required before the CBU specify feature can be applied on a new server.

Standard IBM i terms and conditions do not allow either IBM i processor entitlements or IBM i user entitlements to be transferred permanently or temporarily. These entitlements remain with the machine for which they were ordered. When you register the association between a primary and on-order CBU system, you must agree to certain terms and conditions regarding the temporary transfer. After a CBU system designation is approved and the system is installed, you can temporarily move your optional IBM i processor entitlement and user entitlements from the primary system to the CBU system for any purpose, provided the corresponding primary system processors are not being used concurrently for production purposes. The CBU system can therefore better support failover and role swapping for a full range of test, disaster recovery, and high availability scenarios. Temporary entitlement transfer means that the entitlement is a property transferred from the primary system to the CBU system, and may remain in use on the CBU as long as the registered primary and CBU systems are in deployment for the high availability or disaster recovery operation.

| Primary System (Processor Group) | Capacity Backup System (Processor Group) |
|-------------------------------------|---|
| JS23/JS43 (P10) | JS23/JS43 (P10), PS701/PS702 (P10), PS700 (P05) |
| JS23/JS43 (P10) | JS22 (P10), PS701/PS702 (P10), PS700 (P05) |
| JS22 (P10) | JS23/JS43 (P10), PS701/PS702 (P10), PS700 (P05) |
| JS23/JS43 (P10) | JS12 (P05), PS700 (P05) |
| PS701/PS702 (P10) | PS701/PS702 (P10), PS700 (P05) |
| PS701/PS702 (P10) | JS23/JS43 (P10), PS700 (P05) |
| PS701/PS702 (P10) | JS12 (P05), PS700 (P05) |
| PS700 (P05) | PS700 (P05) |
| PS703 (P10) | PS703 (P10) |
| PS704 (P10) | PS703 (P10), PS704 (P10) |
| PS704 (P10) | JS23/JS43 (P10), PS700 (P05) |
| PS704 (P10) | JS12 (P05), PS700 (P05) |

P260 (P10) P703 (P10), P704(P10), P260(P10), P460 (P10)
P460 (P10) P703 (P10), P704(P10), P260(P10), P460 (P10)

These systems have IBM i software licenses with an IBM i P05 or P10 processor group. The primary machine must be in the same enterprise and country as the CBU system.

Before you can temporarily transfer IBM i processor entitlements from the registered primary system, you must have more than one IBM i processor entitlement on the primary machine and at least one IBM i processor entitlement on the CBU server. You can then transfer any IBM i processor entitlements above the minimum one, assuming the total IBM i workload on the primary system does not require the IBM i entitlement that you want to transfer during the time of the transfer. During this temporary transfer, the CBU system's internal records of its total number of IBM i processor entitlements are not updated, and you may see IBM i license noncompliance warning messages from the CBU system. These warning messages in this situation do not mean you are not in compliance.

The p260 high availability options include PowerHA® with Geographic Mirroring. You may also use Metro Mirror or Global Mirror replication solutions provided by the storage subsystem, and other third-party software replication packages.

Before you can temporarily transfer IBM i user entitlements you must have more than five IBM i user entitlements on the p260 primary server and at least five IBM i user entitlements on the CBU server. You can transfer optional entitlements (any IBM i user entitlements above the minimum five) from the primary to the CBU. The user entitlements transferred to the CBU may not be used concurrently on the primary server from which they were transferred. If the primary server is of a P10 processor group, then the primary server must have a minimum of 10 user entitlements and the optional user entitlements (those over the 10 required) may be transferred temporarily to the CBU. As a general principle of the CBU on i offering, temporary entitlement transfer cannot originate on the CBU.

For example, if you have a p260 as your primary system with two IBM i processor entitlements (one above the minimum) and 50 IBM i user entitlements (40 above the minimum), you can temporarily transfer up to one IBM i processor entitlement and up to 40 user entitlements. During this temporary transfer, the CBU system's internal records of its total number of IBM i processor and user entitlements are not updated, and you may see IBM i license noncompliance warning messages from the CBU system.

If your primary or CBU machine is sold or discontinued from use, any temporary entitlement transfers must be returned to the machine on which they were originally acquired.

For CBU registration and further details, visit

<http://www.ibm.com/systems/power/hardware/cbu>

N_Port ID Virtualization - NPIV

NPIV provides direct access to Fibre Channel adapters from multiple client partitions, simplifying the management of Fibre Channel SAN environments. NPIV support is included with PowerVM Express, Standard, and Enterprise Editions.

Systems management and administrative tools

Integrated diagnostic and administrative tools like IBM Predicative Failure Analysis and light path diagnostics are designed to simplify administration to help lower costs and improve control of the IT environment. Remote management capabilities allow automating IT networking tasks.

Proven technology like VIOS allows the sharing of disk drives, communications, and Fibre Channel adapters.

Systems management support for IBM Flex System p260 Compute Node

The compute node supports the IBM Flex System Manager management software and IBM Flex System Chassis Management Module (CMM).

- IBM Flex System Manager management software is a platform-management foundation that streamlines the way you manage physical and virtual systems in a heterogeneous environment. By using industry standards, IBM Flex System Manager management software supports multiple operating systems and virtualization technologies.
- CMM is a hot-swap module that provides system management functions for all components in an IBM Flex System chassis. It controls a serial port for remote connection and a 10/100 Mbps Ethernet remote-management connection.

IBM Flex System p260 Compute Node At A Glance

- Form factor
The IBM Flex System p260 Compute Node is a half-wide ITE server for the IBM Flex System Enterprise Chassis.
- Processor cores
The p260 contains either two 4-core 64-bit 3.3 GHz or two 8-core 3.2 or 3.5 GHz POWER7 processors.
- Level 2 (L2) cache
256 KB per processor core.
- Level 3 (L3) cache
4 MB per processor core.
- Memory (standard and maximum)
Base offering: 4 GB with SSD installed or no drive installed; 8 GB with HDD installed. Up to 256 GB maximum in 16 DIMM slots. ECC and Chipkill DDR3 SDRAM memory running at 1066 MHz.
- Internal drive storage maximums (optional)
 - Two 300, 600, or 900 GB 2.5-inch Serial Attached SCSI (SAS) 10,000 RPM non-hot-swappable hard disk drives (HDDs)
 - Two 177 GB 1.8-inch SATA solid-state drives (SSDs)
 - Integrated RAID-0 or RAID-1 standard on ITE with support for disk mirroring
- I/O
Two PCIe slots available.
- Optional connectivity
 - IBM Flex System IB6132 2-port QDR InfiniBand Adapter (#1761)
 - IBM Flex System EN4054 4-port 10Gb Ethernet Adapter (#1762)
 - IBM Flex System FC3172 2-port 8Gb Fibre Channel Adapter (#1764)
 - IBM Flex System EN2024 4-port 1Gb Ethernet Adapter (#1763)
- PowerVM Express Edition (optional, when running AIX or Linux)
Support for up to three partitions per system which share processors and I/O.
- PowerVM Standard Edition (optional, when running AIX or Linux)
Virtual LAN, POWER Hypervisor™, Micro-Partitioning, Virtual I/O Server with Integrated Virtualization Manager, Shared Dedicated Capacity, PowerVM Lx86.
- PowerVM Enterprise Edition (optional, when running AIX or Linux)
All the features of PowerVM Standard Edition plus Live Partition Mobility and Active Memory™ Sharing.
- Systems management

Integrated systems management processor, light path diagnostics, Predictive Failure Analysis, Cluster Systems Management for AIX (CSM), Serial Over LAN, IPMI-compliant.

- RAS features
 - IBM Chipkill ECC detection and correction
 - Processor Instruction Retry
 - Service processor with fault monitoring
 - Hot-plug power supplies and cooling fans (on chassis)
 - Dynamic processor deallocation
 - Dynamic deallocation of logical partitions and PCIe bus slots
 - Extended error handling on PCIe slots
 - Redundant power supplies and cooling fans (on chassis)
- Operating environments
 - AIX V7.1 with the 7100-01 Technology Level with Service Pack 3 with APAR IV14284
 - AIX V7.1 with the 7100-01 Technology Level with Service Pack 4, or later (planned availability: June 29, 2012)
 - AIX V7.1 with the 7100-00 Technology Level with Service Pack 6, or later (planned availability: June 29, 2012)
 - AIX V6.1 with the 6100-07 Technology Level, with Service Pack 3 with APAR IV14283
 - AIX V6.1 with the 6100-07 Technology Level, with Service Pack 4, or later (planned availability: June 29, 2012)
 - AIX V6.1 with the 6100-06 Technology Level with Service Pack 8, or later (planned availability: June 29, 2012)
 - AIX V5.3 with the 5300-12 Technology Level with Service Pack 6, or later (planned availability: June 29, 2012) (Note: AIX 5.3 Service Extension is required)

Note: Users should also update their systems with the latest Linux for POWER® service and productivity tools from the IBM website

<http://www14.software.ibm.com/webapp/set2/sas/f/lopdiags/home.html>

Note: For more detailed information about IBM i support for this announcement, refer to the IBM i Technology Updates at

<http://www.ibm.com/developerworks/ibmi/techupdates/hw>

- High availability
 - IBM PowerHA family

Support for IBM i 6.1 and IBM i 7.1

Support for IBM Flex System p260 Compute Node:

IBM i 6.1 and IBM i 7.1 support the IBM Flex System p260 Compute Node. For IBM i, the p260 ITE server is supported in the IBM Flex System Enterprise Chassis. The p260 also supports AIX and Linux operating systems.

IBM i uses the PowerVM VIOS partition for access to Flex System resources and storage devices. The VIOS partition owns adapters on the compute node and virtualizes the resources to the IBM i partition.

IBM i operating system supports the following I/O adapters and storage options on the p260:

- IBM Flex System EN4054 4-port 10Gb Ethernet Adapter (#1762)

- IBM Flex System EN2024 4-port 1Gb Ethernet Adapter (#1763)
- IBM Flex System FC3172 2-port 8Gb Fibre Channel Adapter (#1764)
- IBM 300 GB SAS 10K SFF HDD (#8274)
- IBM 600 GB SAS 10K SFF HDD (#8276)
- IBM 900 GB SAS 10K SFF HDD (#8311)
- IBM 177 GB SATA SSD (#8207)

For use with IBM i, the compute node can be deployed with one VIOS partition and one IBM i partition, with one VIOS partition and multiple IBM i partitions, or with one VIOS partition and a combination of IBM i, AIX, and Linux partitions.

IBM i 6.1 (5761-SS1) and IBM i 7.1 (5770-SS1) include per processor core and per user entitlements for compute nodes.

Product positioning

IBM PureFlex System suits multiple delivery models from highly customizable hardware platforms to a fully integrated and optimized system:

- IBM PureFlex System hardware "building blocks" made up of individual components that can be mixed and matched, and are fully customizable with optional management
- IBM PureFlex System solutions made up of chassis with integrated management appliance, IBM networking, and storage standard
- IBM PureFlex System optimized offerings made up of preconfigured, highly customized systems - focused on selected workloads or single-purpose applications such as IBM PureFlex System

Statement of general direction

IBM plans to provide future upgrade offerings to enhance customer value in their new IBM PureFlex System investments as technology advancements are introduced. The availability details regarding these upgrade offerings will be made available in future announcements and communications.

To enable access to these future upgrade offerings, customers should enable delivery of their IBM PureFlex System inventory to IBM through Electronic Service Agent™.

IBM plans to expand its next generation portfolio of IBM Flex System compute nodes. These additional compute nodes will be optimized for virtualization with the highest level of integration - advanced management, new security enhancements, and flexible IO options. In addition, IBM will continue to expand the Flex System interconnect ecosystem offerings to support higher levels of capabilities and new fabric protocols such as converged networks.

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Reference information

Refer to IBM Flex System p460 Compute Node (7895-42X) Hardware Announcement [112-017](#), dated April 11, 2012.

Refer to IBM Flex System Manager (7955-01M) Hardware Announcement [112-018](#), dated April 11, 2012.

Refer to IBM Flex System Enterprise Chassis (7893-92X) Hardware Announcement [112-080](#), dated April 11, 2012.

Product number

The following are newly announced features on the specific models of the IBM Power Systems™ 7895 machine type:

| Description | MT | Model | Feature |
|---|------|-------|---------|
| IBM Flex System p260 Compute Node | 7895 | 22X | |
| One CSC Billing Unit | 7895 | 22X | 0010 |
| Ten CSC Billing Units | 7895 | 22X | 0011 |
| AIX Partition Specify | 7895 | 22X | 0265 |
| Linux Partition Specify | 7895 | 22X | 0266 |
| IBM i Operating System Partition Specify | 7895 | 22X | 0267 |
| IBM i 6.1 with 6.1.1 Machine Code Specify Code | 7895 | 22X | 0566 |
| IBM i 7.1 Specify Code | 7895 | 22X | 0567 |
| US TAA Compliance Indicator | 7895 | 22X | 0983 |
| USB External Docking Station for Removable Disk Drive | 7895 | 22X | 1104 |
| USB 160 GB Removable Disk Drive | 7895 | 22X | 1106 |
| USB 500 GB Removable Disk Drive | 7895 | 22X | 1107 |
| Custom Service Specify, Rochester Minn, USA | 7895 | 22X | 1140 |
| IBM Flex System IB6132 2-port QDR InfiniBand Adapter | 7895 | 22X | 1761 |
| IBM Flex System EN4054 4-port 10Gb Ethernet Adapter | 7895 | 22X | 1762 |
| IBM Flex System EN2024 4-port 1Gb Ethernet Adapter | 7895 | 22X | 1763 |
| IBM Flex System FC3172 2-port 8Gb Fibre Channel Adapter | 7895 | 22X | 1764 |
| Primary OS - IBM i | 7895 | 22X | 2145 |
| Primary OS - AIX | 7895 | 22X | 2146 |
| Primary OS - Linux | 7895 | 22X | 2147 |
| Factory Deconfiguration of 1-core | 7895 | 22X | 2319 |
| Integrate Flex Server in Chassis (BP) | 7895 | 22X | 4645 |
| Integrate ITE in Chassis | 7895 | 22X | 4646 |
| Rack Indicator- Not Factory Integrated | 7895 | 22X | 4650 |
| Rack Indicator, Rack #1 | 7895 | 22X | 4651 |
| Rack Indicator, Rack #2 | 7895 | 22X | 4652 |
| Rack Indicator, Rack #3 | 7895 | 22X | 4653 |
| Rack Indicator, Rack #4 | 7895 | 22X | 4654 |
| Rack Indicator, Rack #5 | 7895 | 22X | 4655 |
| Rack Indicator, Rack #6 | 7895 | 22X | 4656 |
| Rack Indicator, Rack #7 | 7895 | 22X | 4657 |
| Rack Indicator, Rack #8 | 7895 | 22X | 4658 |
| Rack Indicator, Rack #9 | 7895 | 22X | 4659 |
| Rack Indicator, Rack #10 | 7895 | 22X | 4660 |
| Rack Indicator, Rack #11 | 7895 | 22X | 4661 |
| Rack Indicator, Rack #12 | 7895 | 22X | 4662 |
| Rack Indicator, Rack #13 | 7895 | 22X | 4663 |

| | | | |
|--|------|-----|------|
| Rack Indicator, Rack #14 | 7895 | 22X | 4664 |
| Rack Indicator, Rack #15 | 7895 | 22X | 4665 |
| Rack Indicator, Rack #16 | 7895 | 22X | 4666 |
| Chassis indicator-Not Factory Integrated | 7895 | 22X | 4680 |
| BladeCenter chassis specify, Chassis #1 | 7895 | 22X | 4681 |
| BladeCenter chassis specify, Chassis #2 | 7895 | 22X | 4682 |
| BladeCenter chassis specify, Chassis #3 | 7895 | 22X | 4683 |
| BladeCenter chassis specify, Chassis #4 | 7895 | 22X | 4684 |
| BladeCenter chassis specify, Chassis #5 | 7895 | 22X | 4685 |
| BladeCenter chassis specify, Chassis #6 | 7895 | 22X | 4686 |
| BladeCenter chassis specify, Chassis #7 | 7895 | 22X | 4687 |
| BladeCenter chassis specify, Chassis #8 | 7895 | 22X | 4688 |
| BladeCenter chassis specify, Chassis #9 | 7895 | 22X | 4689 |
| Active Memory Expansion Enablement | 7895 | 22X | 4796 |
| IBM i CBU Specify Code | 7895 | 22X | 4898 |
| Software Preinstall | 7895 | 22X | 5005 |
| PowerVM Express Edition | 7895 | 22X | 5225 |
| PowerVM Standard Edition | 7895 | 22X | 5227 |
| PowerVM Enterprise Edition | 7895 | 22X | 5228 |
| Top Cover, Diskless Model | 7895 | 22X | 7067 |
| Top Cover, SSDs Installed | 7895 | 22X | 7068 |
| Top Cover, HDDs Installed | 7895 | 22X | 7069 |
| SDI Software Pre-Install Indicator | 7895 | 22X | 7305 |
| 32GB (2 x 16GB RDIMMs) DDR3 1066 MHZ System Memory | 7895 | 22X | 8145 |
| 8GB (2x4GB RDIMMs) DDR3 1066 MHZ System Memory | 7895 | 22X | 8196 |
| 16GB (2x8GB RDIMMs) DDR3 1066 MHZ System Memory | 7895 | 22X | 8199 |
| 177 GB 1.8" SATA Solid State Drive | 7895 | 22X | 8207 |
| 300 GB SAS 10K RPM SFF HDD | 7895 | 22X | 8274 |
| 600 GB SAS 10K RPM SFF HDD | 7895 | 22X | 8276 |
| 900 GB SAS 10K RPM SFF HDD | 7895 | 22X | 8311 |
| One Processor Entitlement | 7895 | 22X | 8491 |
| Order Routing Indicator- System Plant | 7895 | 22X | 9169 |
| New AIX License Core Counter | 7895 | 22X | 9440 |
| New IBM i License Core Counter | 7895 | 22X | 9441 |
| New Red Hat License Core Counter | 7895 | 22X | 9442 |
| New SUSE License Core Counter | 7895 | 22X | 9443 |
| Other AIX License Core Counter | 7895 | 22X | 9444 |
| Other Linux License Core Counter | 7895 | 22X | 9445 |
| 3rd Party Linux License Core Counter | 7895 | 22X | 9446 |
| VIOS Core Counter | 7895 | 22X | 9447 |
| Month Indicator | 7895 | 22X | 9461 |
| Day Indicator | 7895 | 22X | 9462 |
| Hour Indicator | 7895 | 22X | 9463 |
| Minute Indicator | 7895 | 22X | 9464 |
| Qty Indicator | 7895 | 22X | 9465 |
| Countable Member Indicator | 7895 | 22X | 9466 |
| System Guides - English | 7895 | 22X | ED21 |
| System Guides - UK-English | 7895 | 22X | ED22 |
| System Guides - Brazilian Portuguese | 7895 | 22X | ED23 |
| System Guides - Japanese | 7895 | 22X | ED24 |
| System Guides - Japanese English | 7895 | 22X | ED25 |
| System Guides - Korean | 7895 | 22X | ED26 |
| System Guides - Korean English | 7895 | 22X | ED27 |
| System Guides - Chinese English | 7895 | 22X | ED28 |
| System Guides - Chinese Hong Kong | 7895 | 22X | ED29 |
| System Guides - Chinese Taiwan | 7895 | 22X | ED2A |
| System Guides - French | 7895 | 22X | ED2B |
| System Guides - Spanish | 7895 | 22X | ED2C |
| System Guides - German | 7895 | 22X | ED2D |
| System Guides - Italian | 7895 | 22X | ED2E |
| IBM PureFlex System Express Indicator | 7895 | 22X | EFD1 |
| IBM PureFlex System Standard Indicator | 7895 | 22X | EFD2 |
| IBM PureFlex System Expansion Indicator | 7895 | 22X | EFD4 |
| IBM PureFlex System Custom Configuration Indicator | 7895 | 22X | EFD5 |
| Trial PowerVM Live Partition Mobility | 7895 | 22X | ELPM |
| 4GB (2x2GB) Memory DIMMS, 1066 MHZ, 2Gb DDR3 DRAM | 7895 | 22X | EM04 |
| 8-core 3.3 GHZ POWER7 Processor Module | 7895 | 22X | EPR1 |
| 16-core 3.2 GHZ POWER7 Processor Module | 7895 | 22X | EPR3 |
| 16-core 3.5 GHZ POWER7 Processor Module | 7895 | 22X | EPR5 |
| RFID Tags for Servers, Compute Nodes, Chassis, | | | |

| | | | |
|------------------------------------|------|-----|------|
| Racks, and HMCs | 7895 | 22X | ERF1 |
| S&H - No Charge | 7895 | 22X | ESCO |
| S&H | 7895 | 22X | ESC4 |
| 1TB Removable Disk Drive Cartridge | 7895 | 22X | EU01 |

Feature conversions

The existing components being replaced during a model or feature conversion become the property of IBM and must be returned.

Feature conversions are always implemented on a "quantity of one for quantity of one" basis. Multiple existing features may not be converted to a single new feature. Single existing features may not be converted to multiple new features.

The following conversions are available to customers:

Feature conversions for 7895-22X virtualization engine features

| From FC: | To FC: | Return parts |
|---------------------------------|-----------------------------------|--------------|
| 5225 - PowerVM Express Edition | 5227 - PowerVM Standard Edition | No |
| 5225 - PowerVM Express Edition | 5228 - PowerVM Enterprise Edition | No |
| 5227 - PowerVM Standard Edition | 5228 - PowerVM Enterprise Edition | No |

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=112-016>

Reliability, Availability, and Serviceability (RAS)

The reliability of the IBM Flex System p260 Compute Node (7895-22X) starts with components, devices, and subsystems that are designed to be fault-tolerant. POWER7 uses lower voltage technology in the processor SCMs that improves reliability and stacked latches to reduce soft error (SER) susceptibility. During the design and development process, subsystems go through rigorous verification and integration testing processes. During system manufacturing, systems go through a thorough testing process to help ensure high product quality levels.

The processor and memory subsystem contains a number of features designed to avoid or correct environmentally induced, single-bit, intermittent failures as well as handle solid faults in components, including selective redundancy to tolerate certain faults without requiring an outage or parts replacement.

Publications

No publications are shipped with the announced product.

The 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

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.

Technical information

Specified operating environment

Physical specifications

- IBM Flex System p260 Compute Node (7895-22X)
 - Height: 215.4 mm (8.5 in)
 - Width: 51.1 mm (2.0 in)
 - Depth: 492.7 mm (19.4 in)
 - Weight: 7.1 kg (15.7 lb)
- IBM Flex System Enterprise Chassis (7893-92X)
 - Height: 440 mm (17.5 in)
 - Width: 447 mm (17.6 in)
 - Depth: 800 mm (31.5 in)
 - Weight: 159 kg (350 lb)

To assure installability and serviceability in non-IBM industry-standard racks, review the installation planning information for any product-specific installation requirements.

Operating environment

- Temperature:
 - 10° to 35°C (50° to 95°F) at 0 to 914 m (0 to 3,000 ft)
 - 10° to 32°C (50° to 90°F) at 914 to 2,133 m (3,000 to 7,000 ft)
- Relative humidity: 8% to 80%
- Maximum altitude: 2,133 m (7,000 ft)
- Power consumption (@ +12 V supplied by Flex System Enterprise Chassis): 634 watts maximum

Note: The maximum measured value is the worst case power consumption expected from a fully populated server under an intensive workload. The maximum measured value also accounts for component tolerance and non-ideal operating conditions. Power consumption and heat load vary greatly by server configuration and utilization. The IBM Systems Energy Estimator should be used to obtain a heat output estimate based on a specific configuration.

<http://www-912.ibm.com/see/EnergyEstimator>

EMC conformance

- US: FCC - Verified to comply with Part 15 of the FCC Rules Class A
- Canada: ICES-004, issue 3 Class A
- EMEA: EN55022: 2006 + A1:2007 Class A
- EMEA: EN55024: 1998 + A1:2001 + A2:2003
- Australia and New Zealand: CISPR 22, Class A

Safety certifications

- US: (UL Mark) UL 60950-1 1st Edition
- CAN: (cUL Mark) CAN/CSA22.2 No.60950-1 1st Edition
- Europe: EN 60950-1:2006+A11:2009
- CB: IEC60950-1, 2nd Edition
- Russia: (GOST Mark) IEC60950-1

Hardware requirements

IBM Flex System p260 Compute Node:

| 7895-22X | Processor | L3 cache | Memory | Local storage |
|----------|--|--------------|----------------|--|
| | 8-core 3.3/ 16-core 3.2/ 16-core 3.5 GHz POWER7 | 4MB/ core | 4GB - 256GB | Two optional 2.5" HDDs or 1.8" SSDs |

Minimum system configuration

Each 7895-22X configuration must contain a minimum of:

- One processor chosen from:
 - 8-core (2 x 4-core) 3.3 GHz 2-socket planar (#EPR1)
 - 16-core (2 x 8-core) 3.2 GHz 2-socket planar (#EPR3)
 - 16-core (2 x 8-core) 3.5 GHz 2-socket planar (#EPR5)
- Eight or sixteen Processor Entitlements (one of these):
 - 8 x #8491 with #EPR1
 - 16 x #8491 with #EPR3 and #EPR5
- 4 GB memory with SSD (#8207 or follow-on) or no drive; 8 GB memory with HDD (#8274, #8276, #8311, or follow-on). Chosen from:
 - 4 GB (2 x 2 GB DIMMs) DDR3 1066 MHz (#EM04)
 - 8 GB (2 x 4 GB DIMMs) DDR3 1066 MHz (#8196)
 - 16 GB (2 x 8 GB DIMMs) DDR3 1066 MHz (#8199)
 - 32 GB (2 x 16 GB DIMMs) DDR3 1066 MHz (#8145)

Note: If HDDs are installed, features EM04 and 8145 are not allowed.

- One Ethernet adapter, chosen from:

- IBM Flex System EN4054 4-port 10Gb Ethernet Adapter (#1762)
- IBM Flex System EN2024 4-port 1Gb Ethernet Adapter (#1763)
- One top cover, chosen from:
 - No HDDs or SSDs installed (#7067)
 - SSDs (#8207, or follow-on) installed (#7068)
 - HDDs (#8274/#8276/#8311, or follow-on) installed (#7069)
- One Primary Operating System Indicator, chosen from:
 - IBM i (#2145 -- requires #0565 or #0566)
 - AIX (#2146)
 - Linux (2147)
- 1 x #ESC0 Shipping and Handling (no charge)
- 1 x #EFD5 PureFlex System Order Indicator

Note: PowerVM Express Edition (8/16 x #5225) will be included in the base configuration. Either PowerVM Standard Edition (8/16 x #5227) or PowerVM Enterprise Edition (8/16 x #5228) may be substituted for PowerVM Express Edition. PowerVM is not required and may be removed from the order. If the IBM i operating system is installed on the IBM Flex System p260 Compute Node, a PowerVM edition is required.

Note: A minimum of one copy of the *IBM Flex System p260/p460 Compute Node Installation/User Guide* (ED21-ED2E) is required at each customer installation.

Optional and additional features

- Up to 256 GB of system memory
 - A maximum of eight memory features (16 DIMMs) may be installed in the 7895-22X.
 - If a hard disk drive (HDD) is installed in the 7895-22X, then only 8 GB (#8196) or 16 GB (#8199) memory features are allowed.
 - Minimum memory with an SSD or no SSD/HDD installed is 4 GB with a maximum of 256 GB. Minimum memory with an HDD installed is 8 GB with a maximum of 128 GB.
 - Memory DIMMs must be installed in matched pairs (same size and speed) but memory features may be mixed.
 - p260 supports Memory Scrubbing, ECC, and Chipkill.
 - Memory features operate at 1066 MHz.
- Storage devices
 - The p260 does not support removable media within the compute node.
 - p260 has two locations for installation of one or two optional 2.5-inch SAS SFF hard disk drives (HDDs).
 - p260 has two locations for installation of one or two optional 1.8-inch SATA solid-state drives (SSDs).
 - SSDs and HDDs may not be mixed in the p260.

Expansion cards

The IBM Flex System p260 Compute Node has two slots supporting the following PCIe expansion cards:

- IBM Flex System IB6132 2-port QDR InfiniBand Adapter (#1761)
- IBM Flex System EN4054 4-port 10Gb Ethernet Adapter (#1762)
- IBM Flex System EN2024 4-port 1Gb Ethernet Adapter (#1763)
- IBM Flex System FC3172 2-port 8Gb FC Adapter (#1764)

A maximum of 1 x #1761 or #1764 is allowed.

A maximum of 2 x #1762 or #1763 is allowed.

Software requirements

The IBM Flex System p260 Compute Node server supports the AIX, Linux, and IBM i operating systems, providing the flexibility of using applications written for any one of the three. IBM has qualified two popular Linux distributions for use with the p260:

- Red Hat Enterprise Linux for POWER
- Novell SUSE Linux Enterprise Server for POWER Systems

One or more of the following operating systems is required for an operational IBM Flex System p260 Compute Node:

If installing the AIX operating system (one of these):

- AIX V7.1 with the 7100-01 Technology Level with Service Pack 3 with APAR IV14284
- AIX V7.1 with the 7100-01 Technology Level with Service Pack 4, or later (planned availability: June 29, 2012)
- AIX V7.1 with the 7100-00 Technology Level with Service Pack 6, or later (planned availability: June 29, 2012)
- AIX V6.1 with the 6100-07 Technology Level, with Service Pack 3 with APAR IV14283
- AIX V6.1 with the 6100-07 Technology Level, with Service Pack 4, or later (planned availability: June 29, 2012)
- AIX V6.1 with the 6100-06 Technology Level with Service Pack 8, or later (planned availability: June 29, 2012)
- AIX V5.3 with the 5300-12 Technology Level with Service Pack 6, or later (planned availability: June 29, 2012) (Note: AIX 5.3 Service Extension is required)

If installing the IBM i operating system:

- IBM i 6.1 with i 6.1.1 machine code, or later
- IBM i 7.1, or later

Note: VIOS is required with the IBM i operating system.

If installing VIOS:

- VIOS 2.2.1.4, or later

If installing the Linux operating system (one of these):

- Novell SUSE Linux Enterprise Server 11 Service Pack 2 for POWER, with current maintenance updates available from Novell to enable all planned functionality
- Red Hat Enterprise Linux 5.7, for POWER, or later
- Red Hat Enterprise Linux 6.2, for POWER, or later

Users should also update their systems with the latest Linux for POWER service and productivity tools from the IBM website

<http://www14.software.ibm.com/webapp/set2/sas/f/lopdiags/home.html>

Note: For systems ordered with the Linux operating system, IBM ships the most current versions available from the distributor. If your hardware requires a different version of a Linux OS than that shipped by IBM, you must obtain it via download from the Linux distributor's website. Information concerning access to a distributor's website is located on the product registration card delivered to you as part of your Linux OS order.

Processor is the unit of measure by which this program is licensed. A processor (commonly called a processor core or CPU) is a functional unit within a computing device that interprets and executes instructions. A processor consists of at least an instruction control unit and one or more arithmetic or logic units. With multicore technology, each core is considered a processor. For programs eligible for sub-capacity licensing, a Proof of Entitlement (PoE) must be acquired for all activated processors available for use in each partition (utilizing eligible partitioning technologies) where the program runs. A PoE must be acquired for all activated processor cores available for use on the server.

Limitations:

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 it can be subjected to, 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 communicate to system generated commands or becoming incapable of being written to.

Planning information

Cable orders

No cables are required.

Security, auditability, and control

Security and auditability features include:

- A power-on password function provides control of who has access to the data and server setup program on the server.
- A selectable boot sequence can be used to prevent unauthorized installation of software or removal of data from the diskette drive.

Limitations: The IBM Flex System Enterprise Chassis and the IBM Flex System p260 Compute Node have no security-intrusion detection.

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

Volume orders: Contact your IBM representative.

IBM Global Financing

Yes

Warranty period

Three years

Note: For configurations that support the RAID battery, the RAID battery will be warranted for 1 year effective on its "Date of Installation." All other product warranty terms for the machine remain unchanged.

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. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability. 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.

CRU Service

IBM provides replacement CRUs to you for you to install. CRU information and replacement instructions are shipped with your machine and are available from IBM upon your request. CRUs are designated as being either a Tier 1 or a Tier 2 CRU.

Tier 1 CRU

Installation of Tier 1 CRUs is your responsibility. If IBM installs a Tier 1 CRU at your request, you will be charged for the installation.

Tier 2 CRU

You may install a Tier 2 CRU yourself or request IBM to install it, at no additional charge.

Based upon availability, CRUs 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, 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 have been designated as Tier 1 CRUs:

- Hard disk drive
- Hard disk drive flex cable
- Hard disk drive interposer
- Mezzanine cards
- Battery
- Bezel
- Memory DIMMs
- Top cover
- Management card

On-site Service

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.

The service level is:

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

Non-IBM parts 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 their customers, and normal warranty service procedures for the IBM machine apply.

International Warranty Service

International Warranty Service (IWS) is available in selected countries or regions.

The warranty service type and the service level provided in the servicing country may be different from that provided in the country in which the machine was purchased.

Under IWS, warranty service will be provided with the prevailing warranty service type and service level available for the IWS-eligible machine type in the servicing country and the warranty period observed will be that of the country in which the machine was purchased.

To determine the eligibility of your machine and to view a list of countries where service is available, visit

<http://www-947.ibm.com/support/entry/portal/docdisplay?Indocid=MIGR-5070246>

For more information on IWS, refer to Services Announcement 601-034, dated September 25, 2001.

Warranty service upgrades

During the warranty period, a warranty service upgrade provides an enhanced level of On-site Service for an additional charge. A warranty service upgrade must be purchased during the warranty period and is for a fixed term (duration). It is not refundable or transferable and may not be prorated. If required, IBM will provide the warranty service upgrade enhanced level of On-site Service acquired by the customer. Service levels are response-time objectives and are not guaranteed. See the Warranty services section for additional details.

IBM will attempt to resolve your problem over the telephone or electronically by access to an IBM website. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability.

CRUs will be provided as part of the machine's standard warranty CRU Service except that you may install a Tier 1 CRU yourself or request IBM installation, at no additional charge, under one of the On-site Service levels specified below. For additional information on the CRU Service, see the warranty information.

On-site Service

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.

The service level is:

- 9 hours per day, Monday through Friday, excluding holidays, 4-hour average response, same-business-day response
- 24 hours per day, 7 days a week, 4-hour average response
- 24 hours per day, 7 days a week, 2-hour average response

Note: Canada does not offer 2-hour response option.

Customer Replaceable Units (CRUs) may be provided as part of the machine's standard warranty CRU Service except that you may install a CRU yourself or request IBM installation, at no additional charge, under one of the On-site service levels specified above. For additional information on the CRU service, see warranty information.

Maintenance services

If required, IBM provides repair or exchange service depending on the types of maintenance service specified for the machine. IBM will attempt to resolve your problem over the telephone or electronically, via an IBM website. You must follow the problem determination and resolution procedures that IBM specifies. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response-time objectives and are not guaranteed. The specified level of maintenance 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-specific and location-specific information. The following service selections are available as maintenance options for your machine type.

On-site Service

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.

The service level is:

- 9 hours per day, Monday through Friday, excluding holidays, next-business-day response
- 9 hours per day, Monday through Friday, excluding holidays, 4-hour average response
- 24 hours per day, 7 days a week, 4-hour average response
- 24 hours per day, 7 days a week, 2-hour average response

Note: Canada does not offer 2-hour response option.

Customer Replaceable Unit (CRU) Service

If your problem can be resolved with a CRU (for example, memory, or hard disk drive), and depending upon the maintenance service offerings in your geography, IBM will ship the 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 upon your request.

Based upon availability, CRUs will be shipped for next business day 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.

CRUs may be provided as part of the machine's standard maintenance service except that you may install a CRU yourself or request IBM installation, at no additional charge, under any of the On-site Service levels specified above.

Non-IBM parts service

Under certain conditions, IBM provides services for selected non-IBM parts at no additional charge for machines that are covered under warranty service upgrades or maintenance services.

This service includes hardware problem determination (PD) on the non-IBM parts (for example, adapter cards, PCMCIA cards, disk drives, memory) installed within IBM machines and provides the labor to replace the failing parts at no additional charge.

If IBM has a Technical Service Agreement with the manufacturer of the failing part, or if the failing part is an accommodations part (a part with an IBM FRU label), IBM may also source and replace the failing part at no additional charge. For all other non-IBM parts, customers are responsible for sourcing the parts. Installation labor is provided at no additional charge, if the machine is covered under a warranty service upgrade or a maintenance service.

Warranty service upgrades

Usage plan machine

No

IBM hourly service rate classification

One

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

Yes

The applicable processor tier is Small.

Licensed Machine Code

IBM Machine Code is licensed for use by a customer on the IBM machine for which it was provided by IBM under the terms and conditions of the IBM License Agreement for Machine Code, to enable the machine to function in accordance with its specifications, and only for the capacity authorized by IBM and acquired by the customer. You can obtain the agreement by contacting your IBM representative or visiting

http://www-1.ibm.com/servers/support/machine_warranties/machine_code.html

Machine using LMC: Type Model 7895 22X

IBM may release changes to the Machine Code. IBM plans to make the Machine Code changes available for download from the IBM technical support website

<http://www-947.ibm.com/support/entry/portal/>

If the machine does not function as warranted and your problem can be resolved through your application of downloadable Machine Code, you are responsible for downloading and installing these designated Machine Code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable Machine Code changes; however, you may be charged for that service.

Access to "IBM PureFlex System" fix downloads will be granted upon entitlement validation. The terms and conditions for fixes will be covered under the License Agreement for Machine Code, International Program License Agreement, International License Agreement for Non-Warranted Programs and/or other terms provided with the fix, as applicable.

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 5% for the products in this announcement.

Pricing

Product charges

The following are newly announced features on the specific models of the IBM Power Systems 7895 machine type:

| Description | Model number | Feature number | Initial/MES/Both support | RP CSU MES |
|--------------|--------------|----------------|--------------------------|------------|
| IBM 7895-22X | | | | |

| | | | |
|---|-----|------|----------------|
| | 22X | | Yes |
| One CSC Billing Unit | 22X | 0010 | Both Yes No |
| Ten CSC Billing Units | 22X | 0011 | Both Yes No |
| AIX Partition Specify | 22X | 0265 | Initial N/A No |
| Linux Partition Specify | 22X | 0266 | Initial N/A No |
| IBM i Partition Specify | 22X | 0267 | Initial N/A No |
| IBM i 6.1 w/6.1.1 Machine Code | 22X | 0566 | Initial N/A No |
| IBM i 7.1 Specify Code | 22X | 0567 | Initial N/A No |
| US TAA Compliance Indicator | 22X | 0983 | Both Yes No |
| USB External Docking Station R | 22X | 1104 | Both Yes No |
| USB 160 GB Removable Disk Dr | 22X | 1106 | Both Yes No |
| USB 500 GB Removable Disk Dr | 22X | 1107 | Both Yes No |
| Custom Serv. Specify, Roch | 22X | 1140 | Both Yes No |
| IB6132 2-port QDR InfiniBand | 22X | 1761 | Both Yes No |
| EN4054 4-port 10Gb E'net Adapt | 22X | 1762 | Both Yes No |
| EN2024 4-port 1Gb E'net Adaptr | 22X | 1763 | Both Yes No |
| FC3172 2-port 8Gb FC Adapter | 22X | 1764 | Both Yes No |
| Primary OS - IBM i | 22X | 2145 | Initial N/A No |
| Primary OS AIX | 22X | 2146 | Initial N/A No |
| Primary OS Linux | 22X | 2147 | Initial N/A No |
| Factory Deconfiguration of 1 c | 22X | 2319 | Initial N/A No |
| Integrate Flex Server Chassis | 22X | 4645 | Initial N/A No |
| Integrate ITE in Chassis | 22X | 4646 | Initial N/A No |
| One and only one rack indicator feature is required on all orders (#4650 to #4666). No Factory Integration Ind. | 22X | 4650 | Initial N/A No |
| Rack Indicator, Rack 1 | 22X | 4651 | Initial N/A No |
| Rack Indicator, Rack 2 | 22X | 4652 | Initial N/A No |
| Rack Indicator, Rack 3 | 22X | 4653 | Initial N/A No |
| Rack Indicator, Rack 4 | 22X | 4654 | Initial N/A No |
| Rack Indicator, Rack 5 | 22X | 4655 | Initial N/A No |
| Rack Indicator, Rack 6 | 22X | 4656 | Initial N/A No |
| Rack Indicator, Rack 7 | 22X | 4657 | Initial N/A No |
| Rack Indicator, Rack 8 | 22X | 4658 | Initial N/A No |
| Rack Indicator, Rack 9 | 22X | 4659 | Initial N/A No |

| | | | | | |
|--------------------------------|-----|------|---------|-----|----|
| Rack Indicator, Rack 10 | 22X | 4660 | Initial | N/A | No |
| Rack Indicator, Rack 11 | 22X | 4661 | Initial | N/A | No |
| Rack Indicator, Rack 12 | 22X | 4662 | Initial | N/A | No |
| Rack Indicator, Rack 13 | 22X | 4663 | Initial | N/A | No |
| Rack Indicator, Rack 14 | 22X | 4664 | Initial | N/A | No |
| Rack Indicator, Rack 15 | 22X | 4665 | Initial | N/A | No |
| Rack Indicator, Rack 16 | 22X | 4666 | Initial | N/A | No |
| ChasIndicator-Not fact integr | 22X | 4680 | Initial | N/A | No |
| BC Chassis, Chassis #1 | 22X | 4681 | Initial | N/A | No |
| BC Chassis, Chassis #2 | 22X | 4682 | Initial | N/A | No |
| BC Chassis, Chassis #3 | 22X | 4683 | Initial | N/A | No |
| BC Chassis, Chassis #4 | 22X | 4684 | Initial | N/A | No |
| BC Chassis, Chassis #5 | 22X | 4685 | Initial | N/A | No |
| BC Chassis, Chassis #6 | 22X | 4686 | Initial | N/A | No |
| BC Chassis, Chassis #7 | 22X | 4687 | Initial | N/A | No |
| BC Chassis, Chassis #8 | 22X | 4688 | Initial | N/A | No |
| BC Chassis, Chassis #9 | 22X | 4689 | Initial | N/A | No |
| Active Memory Expansion Enabl | 22X | 4796 | Both | Yes | |
| IBM i CBU Specify Code | 22X | 4898 | Both | Yes | No |
| Software Preinstall | 22X | 5005 | Initial | N/A | No |
| PowerVM Express Edition | 22X | 5225 | Both | Yes | No |
| PowerVM Standard Edition | 22X | 5227 | Both | Yes | No |
| PowerVM Enterprise Edition | 22X | 5228 | Both | Yes | No |
| Top Cover, Diskless Model | 22X | 7067 | Both | Yes | No |
| Top Cover, SSDs Installed | 22X | 7068 | Both | Yes | No |
| Top Cover, HDDs Installed | 22X | 7069 | Both | Yes | No |
| AAP Software Pre-Inst.Indic. | 22X | 7305 | Initial | N/A | No |
| 32GB (2 x 16GB RDIMMs) Memory | 22X | 8145 | Both | Yes | No |
| 8GB (2x4GB RDIMMs) Memory | 22X | 8196 | Both | Yes | No |
| 16GB (2x8GB RDIMMs) Memory | 22X | 8199 | Both | Yes | No |
| 177 GB Solid State Drive | 22X | 8207 | Both | Yes | No |
| 300 GB SAS 10K RPM SAS HDD | 22X | 8274 | Both | Yes | No |
| 600 GB SAS 10K RPM SFF | 22X | 8276 | Both | Yes | No |
| 900 GB SAS 10K RPM SFF | 22X | 8311 | Both | Yes | No |
| One Processor Entitlement | 22X | 8491 | Both | Yes | No |
| Order Routing Indicator System | 22X | 9169 | Initial | N/A | No |
| New AIX License Core Counter | | | | | |

| | | | | | |
|--------------------------------|-----|------|---------|-----|----|
| | 22X | 9440 | Initial | N/A | No |
| New IBM i Lic Core Counter | 22X | 9441 | Initial | N/A | No |
| New Red Hat Lic Core Counter | 22X | 9442 | Initial | N/A | No |
| New SUSE Lic Core Counter | 22X | 9443 | Initial | N/A | No |
| Other AIX Lic Core Counter | 22X | 9444 | Initial | N/A | No |
| Other Linux Lic Core Counter | 22X | 9445 | Initial | N/A | No |
| 3rd Party Linux Lic Core Cnt | 22X | 9446 | Initial | N/A | No |
| VIOS Core Counter | 22X | 9447 | Initial | N/A | No |
| Month Indicator | 22X | 9461 | Initial | N/A | No |
| Day Indicator | 22X | 9462 | Initial | N/A | No |
| Hour Indicator | 22X | 9463 | Initial | N/A | No |
| Minute Indicator | 22X | 9464 | Initial | N/A | No |
| Qty Indicator | 22X | 9465 | Initial | N/A | No |
| Countable Member Indicator | 22X | 9466 | Initial | N/A | No |
| System Guides - English | 22X | ED21 | Both | Yes | No |
| System Guides - UK-English | 22X | ED22 | Both | Yes | No |
| System Guides - Brazilian Port | 22X | ED23 | Both | Yes | No |
| System Guides - Japanese | 22X | ED24 | Both | Yes | No |
| System Guides-Japanese English | 22X | ED25 | Both | Yes | No |
| System Guides - Korean | 22X | ED26 | Both | Yes | No |
| System Guides - Korean English | 22X | ED27 | Both | Yes | No |
| System Guides- Chinese English | 22X | ED28 | Both | Yes | No |
| System Guides - Chinese HK | 22X | ED29 | Both | Yes | No |
| System Guides - Chinese Taiwan | 22X | ED2A | Both | Yes | No |
| System Guides - French | 22X | ED2B | Both | Yes | No |
| System Guides - Spanish | 22X | ED2C | Both | Yes | No |
| System Guides - German | 22X | ED2D | Both | Yes | No |
| System Guides - Italian | 22X | ED2E | Both | Yes | No |
| PureFlex System Express Ind. | 22X | EFD1 | Initial | N/A | No |
| PureFlex System Standard Ind. | 22X | EFD2 | Initial | N/A | No |
| PureFlex System Expansion Ind | 22X | EFD4 | Initial | N/A | No |
| PureFlex System Custom Ind. | 22X | EFD5 | Initial | N/A | No |
| Trial Live Partition Mobility | 22X | ELPM | Both | Yes | No |
| 4GB (2x2GB) Memory DIMMs 1066 | 22X | EM04 | Both | Yes | No |
| 8-core 3.3 GHZ POWER 7 proc | 22X | EPR1 | Both | Yes | No |
| 16-core 3.2 GHZ POWER7 Proc | 22X | EPR3 | Both | Yes | No |
| 16-core 3.5 GHZ POWER7 proc | 22X | EPR5 | Both | Yes | No |
| RFID Tags for Compute Nodes | | | | | |

| | | | | | |
|------------------------------|-----|------|---------|-----|----|
| S&H - No Charge | 22X | ERF1 | Initial | N/A | No |
| S&H | 22X | ESC0 | Initial | N/A | No |
| 1TB Removable Disk Cartridge | 22X | ESC4 | Initial | N/A | No |
| | 22X | EU01 | Both | Yes | No |

Pricing terms

Prices in the following PDF prices link are suggested list prices on day of announcement for the US 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-112-016-LIST_PRICES_2012_04_11.PDF](#)

Feature conversions

Feature conversions for 7895-22X virtualization engine features

| From FC: | To FC: | Parts returned |
|---------------------------------|-----------------------------------|----------------|
| 5225 - PowerVM Express Edition | 5227 - PowerVM Standard Edition | No |
| 5225 - PowerVM Express Edition | 5228 - PowerVM Enterprise Edition | No |
| 5227 - PowerVM Standard Edition | 5228 - PowerVM Enterprise Edition | No |

ServicePac prices

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

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