



IBM Flex System p460 Compute Node

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At a glance

IBM® Flex System p460 Compute Node is a full-wide Information Technology Element (ITE) server with four 4-core 64-bit 3.3 GHz processor modules, or four 8-core 64-bit 3.2 or 3.5 GHz processor modules and 32 DIMM slots which can contain up to a maximum of 512 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 p460 Compute Node.

The p460 is part of IBM PureFlex System, a new category of computing that integrates multiple server architectures, networking, storage, and system management capability into a single system.

IBM PureFlex 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 PureFlex 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 PureFlex 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 Novell 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 p460 Compute Node

The IBM Flex System p460 Compute Node is the latest high-density Information Technology Element (ITE) server with POWER7® and EnergyScale™ technology.

The IBM Flex System p460 Compute Node is a full-wide ITE server with four 4-core 64-bit 3.3 GHz processor modules, or four 8-core 64-bit 3.2 or 3.5 GHz processor modules and 32 DIMM slots which can contain up to a maximum of 512 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 p460 Compute Node.

Integrated features on the p460 Compute Node include:

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

The IBM Flex System p460 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 p460 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 p460 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 for the Flex System p460 Compute Node

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 p460 Compute Node can be ordered as part of a PureFlex System. There are three IBM PureFlex System offerings available:

- IBM Flex System Express® for smaller installations (#EFD1)
- IBM Flex System Standard for application systems (#EFD2)
- IBM Flex 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. The 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 G8264R Model 64C (with IBM Flex 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, IBM PureFlex System 42U Rack, and Flex System Managers can be ordered once the basic requirements for the IBM PureFlex 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 IBM PureFlex 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 2498 SAN24B-4 Express Model B24	2498-B24

For more information on IBM PureFlex Systems, visit

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

IBM PureFlex System Standard

The IBM PureFlex System Standard requirements when ordering the IBM Flex System p460 Compute Node are:

1 x Flex System p460 Compute Node (7895-42X), with the following features:	
1 x #EPR2 or #EPR4 or #EPR6	Processor Module
16 x #8491 with #EPR2 or 32 x #8491 with #EPR4 or #EPR6	Processor Activations
16 x #8199	256 GB Minimum Memory
2 x #1762	IBM Flex System EN4054
	4-port 10 Gb Ethernet Adapter
2 x #1764	IBM Flex System FC3172
	2-port 8 Gb Fibre Channel Adapter
1 x #2145 or #2146 or #2147	Operating System Indicator
1 x #0265 or #0266 or #0267	Partition Specify
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 #7005	Top Cover, No HDDs or SSDs
16 or 32 x #5227	PowerVM Standard (per core)
1 x #ED21-#ED2E	Installation/User Guide
1 x #ESCO	Shipping and Handling (no charge)
1 x #EFD2 or #EFD4	PureFlex System Order Indicator

Note: #1762 and #1764 are always required in the configuration. #8199, #5277, and #7005 are minimums and can be replaced. #0566 or #0577 is required with #2145.

1 x Flex System Enterprise Chassis (7893-92X), with the following features:

1 x #3593	IBM Flex System EN4093 10 Gb Virtual Fabric Scalable Switch
2 x #3595	IBM Flex System FC3171 8 Gb SAN Switch
4 x #3282	10 GbE SFP+ Transceiver
4 x #3286	8 GB SFP+ Transceiver
5 x #EB29	1000Base-T SFP RJ45 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 #0438	Content Specify - 7895-42X
1 x #0466	Content Specify - 7955-01M
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-inch SATA SSD
1 x #3767	1 TB 7,200 RPM 2.5-inch 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 or #EFD4	PureFlex System Order Indicator

1 x Storwize V7000 Disk System (2076-124), with the following features:

1 x #0010	Storage Engine 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 #3512	200 GB 2.5-inch SSD
2 x #6008	Cache 8 GB
2 x #9730	Power Cord - PDU Connection
2 x #9801	AC Power Supply
1 x #EFD0	V7000 Routing Indicator
1 x #4651	Rack Indicator, Rack #1
1 x #9170	Controller #1 Group
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
4 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 (Blue)
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.

IBM PureFlex Enterprise

The IBM PureFlex System Enterprise requires that two compute nodes (2 x 7895-42X or 2 x 7863-10X) be selected.

The IBM PureFlex System Enterprise requirements when ordering the IBM Flex System p460 Compute Node are:

2 x Flex System p460 Compute Node (7895-42X), with the following features:	
1 or 2 x #EPR2 or #EPR4 or #EPR6	Processor Module
16 x #8491 with #EPR2 or 32 x #8491 with #EPR4 or #EPR6	Processor Activations
16 x #8199	256 GB Minimum Memory
2 x #1762	IBM Flex System EN4054
	4-port 10Gb Ethernet Adapter
2 x #1764	IBM Flex System FC3172
	2-port 8Gb Fibre Channel Adapter
1 x #2145 or #2146 or #2147	Operating System Indicator
1 x #0265 or #0266 or #0267	Partition Specify
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 # 7005	Top Cover, No HDDs or SSDs
16 or 32 x #5227	PowerVM Standard (per core)
1 x #ED21-#ED2E	Installation/User Guide
1 x #ESCO	Shipping and Handling (no charge)
1 x #EFD3 or #EFD4	PureFlex System Order Indicator

Note: #1762 and #1764 are always required in the configuration. #8199 and #7067 are minimums and can be replaced.

1 x Flex System Enterprise Chassis (7893-92X), with the following features:	
2 x #3593	IBM Flex System EN4093 10 Gb Virtual Fabric Scalable Switch
2 x #3595	IBM Flex System FC3171 8 Gb SAN Switch
2 x #3596	Port Upgrade 1 for #3593
2 x #3597	Port Upgrade 2 for #3593
8 x #3286	8 Gb SFP+ Transceiver
4 x #3282	10 GbE SFP+ Transceiver
6 x #EB29	1000Base-T SFP RJ45 Transceiver
1 x #9039	Base CME
1 x #3592	Redundant CME
2 x #9059	Base Power Module (2X)
4 x #3590	Redundant Power Module
6 x #4558	Power Cord (2.5M) to PDU/UPS
1 x #9038	Base Fans (4X)
2 x #7805	Additional Fans (2X)
1 x #4649	Rack Integration Services
1 x #4651	Rack Indicator, Rack #1
3 x #4681	Chassis Specify, Chassis #1
2 x #1111	CAT5E Ethernet Cable, 3M Blue
4 x #ECB4	10 GbE SFP+ Copper DAC Cable, 1M
1 x #EFD3 or #EFD4	PureFlex System Order Indicator

2 x #0438	Content Specify - 7895-42X
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Note: A PureFlex Enterprise requires two compute nodes.

1 x #0466	Content Specify - 7955-01M
1 x #EFM1	Open Fabric Manager
1 x #EPU1-#EPU2	System Documentation and Software

1 x #ESCO Shipping and Handling (no charge)
1 x #EFD3 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-inch SATA SSD
1 x #3767 1 TB 7,200 RPM 2.5-inch 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 #EFD3 PureFlex System Order Indicator

1 x Storwize v7000 Disk System (2076-124), with the following features:
1 x #0010 Storage Engine Preload
4 x #5305 5M Fiber Optic Cable
8 x #3206 600 GB 2.5-inch 10k HDD
4 x #3512 or #3514 200 or 400 GB 2.5-inch SSD
2 x #6008 Cache 8 GB
2 x #9730 Power Cord - PDU Connection
2 x #9801 AC Power Supply
1 x #EFD0 V7000 Routing Indicator
1 x #4651 Rack Indicator, Rack #1
1 x #9170 Controller #1 Group
1 x #EFD3 or #EFD4 PureFlex System Order Indicator
Note: #EFD4 does not require the following features: #3206, #3512, #3514, or
#9170. #EFD4 requires #9171.

2 x IBM 1455 BNT Rack Switch (1455-64C), with the following features:
1 x #EFD0 Routing Indicator
1 x #4651 Rack Indicator, Rack #1
2 x #6458 Line cord
6 x #EB28 SFP+ Transceiver
2 x #EB25 3m (9.8-ft) QSFP+ DAC Break-out cable
2 x #3287 1m (3.3-ft) QSFP+-to-QSFP+ cable
1 x #EU06 19" Flexible 4 Post Rail Kit
1 x #ESCO Shipping and handling (no charge)
1 x #EFD3 or #EFD4 PureFlex System Order Indicator
Note: #EFD4 does not require the following feature: #EB25. #EFD4 requires 4 x
#EB28 instead of 6 x #EB28.

2 x IBM 1455 BNT Rack Switch (1455-48E), with the following features:
1 x #EFD0 Routing Indicator
1 x #4651 Rack Indicator Rack #1
2 x #6458 Line cord
3 x #ECB2 1.5m CAT5E Ethernet cable
1 x #EU06 19" Flexible 4 Post Rail Kit
1 x #ESCO Shipping and handling (no charge)
1 x #EFD3 or #EFD4 PureFlex System Order Indicator

2 x IBM 2498 SAN24B-4 Express Model B24 (2498-B24), with the following
features:
1 x #EFD0 Routing Indicator
1 x #4651 Rack Indicator, Rack #1
4 x #5605 Fiber Cable LC/LC 5 m Multimode
50 Micron
1 x #2808 8 Gbps SW SFP
Transceiver - 8 Pack
1 x #EFD3 or #EFD4 PureFlex System Order Indicator

1 x IBM PureFlex System 42U Rack (7953-94X), with the following features:
9 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
4 x #0450	Rack Content Specify - 1455-64C/48E
2 x #ER06	Rack Content Specify - 2498-B24
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 (Blue)
1 x #ESC0	Shipping and Handling (no charge)
1 x #EFD3 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.

#0450 and #ER06 are only required with the Flex System p460 Compute Node (7895-42X).

PowerVM Editions (Advanced Power® Virtualization) (Optional)

The IBM Flex System p460 Compute Node supports PowerVM technology. The p460 is designed to make it more affordable to consolidate multiple independent applications on a single ITE using the same proven virtualization technologies offered on IBM Power servers.

The p460 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 p460 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 p460. Ultimately, IBM Micro-Partitioning® technology allows each processor core to be subdivided into as many as 10 virtual servers. And since the p460 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 p460.

Capacity Backup (CBU) Support for IBM i on the IBM Flex System p460 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 p460 Compute Node (7895-42X) 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)	PS701/PS702 (P10), PS700 (P05)
JS23/JS43 (P10)	PS701/PS702 (P10), PS700 (P05)
JS22 (P10)	PS701/PS702 (P10), PS700 (P05)
JS23/JS43 (P10)	PS700 (P05)
PS701/PS702 (P10)	PS701/PS702 (P10), PS700 (P05)
PS701/PS702 (P10)	PS700 (P05)
PS701/PS702 (P10)	PS700 (P05)
PS700 (P05)	PS700 (P05)
PS703 (P10)	PS703 (P10), P260, P460
PS704 (P10)	PS703 (P10), PS704 (P10), P260, P460
PS704 (P10)	PS700 (P05), P260, P460
PS704 (P10)	PS700 (P05), P260, P460
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 p460 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 p460 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 p460 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 Predictive 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 p460 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 p460 Compute Node at A Glance

- Form factor
The IBM Flex System p460 Compute Node is a full-wide ITE server for the IBM Flex System Enterprise Chassis.
- Processor cores
The p460 contains either four 4-core 64-bit 3.3 GHz or four 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 512 GB maximum in 32 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
 - Four 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)
- IBM i 6.1 with i 6.1.1 machine code, or later
- IBM i 7.1, or later
- 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
- VIOS 2.2.1.4, or later
- eFW 7.4, or later

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 p460 Compute Node:

IBM i 6.1 and IBM i 7.1 support the IBM Flex System p460 Compute Node. For IBM i, the p460 ITE server is supported in the IBM Flex System Enterprise Chassis. The p460 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 p460:

- 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 blade.

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 p260 Compute Node (7895-22X) Hardware Announcement [112-016](#), 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 p460 Compute Node	7895	42X	
One CSC Billing Unit	7895	42X	0010
Ten CSC Billing Units	7895	42X	0011
AIX Partition Specify	7895	42X	0265
Linux Partition Specify	7895	42X	0266
IBM i Operating System Partition Specify	7895	42X	0267
IBM i 6.1 with 6.1.1 Machine Code Specify Code	7895	42X	0566
IBM i 7.1 Specify Code	7895	42X	0567
Purescale Application Indicator	7895	42X	0714
US TAA Compliance Indicator	7895	42X	0983
USB External Docking Station for Removable Disk Drive	7895	42X	1104
USB 160 GB Removable Disk Drive	7895	42X	1106
USB 500 GB Removable Disk Drive	7895	42X	1107
Custom Service Specify, Rochester Minn, USA	7895	42X	1140
IBM Flex System IB6132 2-port QDR InfiniBand Adapter	7895	42X	1761
IBM Flex System EN4054 4-port 10Gb Ethernet Adapter	7895	42X	1762
IBM Flex System EN2024 4-port 1Gb Ethernet Adapter	7895	42X	1763
IBM Flex System FC3172 2-port 8Gb Fibre Channel Adapter	7895	42X	1764
Primary OS - IBM i	7895	42X	2145
Primary OS - AIX	7895	42X	2146
Primary OS - Linux	7895	42X	2147
Factory Deconfiguration of 1-core	7895	42X	2319
Integrate Flex Server in Chassis (BP)	7895	42X	4645
Integrate ITE in Chassis	7895	42X	4646
Rack Indicator- Not Factory Integrated	7895	42X	4650
Rack Indicator, Rack #1	7895	42X	4651
Rack Indicator, Rack #2	7895	42X	4652
Rack Indicator, Rack #3	7895	42X	4653
Rack Indicator, Rack #4	7895	42X	4654
Rack Indicator, Rack #5	7895	42X	4655
Rack Indicator, Rack #6	7895	42X	4656
Rack Indicator, Rack #7	7895	42X	4657
Rack Indicator, Rack #8	7895	42X	4658
Rack Indicator, Rack #9	7895	42X	4659
Rack Indicator, Rack #10	7895	42X	4660
Rack Indicator, Rack #11	7895	42X	4661
Rack Indicator, Rack #12	7895	42X	4662
Rack Indicator, Rack #13	7895	42X	4663
Rack Indicator, Rack #14	7895	42X	4664
Rack Indicator, Rack #15	7895	42X	4665
Rack Indicator, Rack #16	7895	42X	4666
Chassis indicator-Not Factory Integrated	7895	42X	4680
BladeCenter chassis specify, Chassis #1	7895	42X	4681
BladeCenter chassis specify, Chassis #2	7895	42X	4682
BladeCenter chassis specify, Chassis #3	7895	42X	4683
BladeCenter chassis specify, Chassis #4	7895	42X	4684
BladeCenter chassis specify, Chassis #5	7895	42X	4685
BladeCenter chassis specify, Chassis #6	7895	42X	4686
BladeCenter chassis specify, Chassis #7	7895	42X	4687
BladeCenter chassis specify, Chassis #8	7895	42X	4688
BladeCenter chassis specify, Chassis #9	7895	42X	4689
Active Memory Expansion Enablement	7895	42X	4796
IBM i CBU Specify Code	7895	42X	4898
Software Preinstall	7895	42X	5005
PowerVM Express Edition	7895	42X	5225
PowerVM Standard Edition	7895	42X	5227
PowerVM Enterprise Edition	7895	42X	5228
Top Cover, No SSDs/HDDs Installed	7895	42X	7005
Top Cover, SSDs Installed	7895	42X	7065
Top Cover, HDDs Installed	7895	42X	7066

SDI Software Pre-Install Indicator	7895	42X	7305
32GB (2 x 16GB RDIMMs) DDR3 1066 MHz System Memory			
Memory	7895	42X	8145
8GB (2x4GB RDIMMs) DDR3 1066 MHz System Memory	7895	42X	8196
16GB (2x8GB RDIMMs) DDR3 1066 MHz System Memory	7895	42X	8199
177 GB 1.8" SATA Solid State Drive	7895	42X	8207
300 GB SAS 10K RPM SFF HDD	7895	42X	8274
600 GB SAS 10K RPM SFF HDD	7895	42X	8276
900 GB SAS 10K RPM SFF HDD	7895	42X	8311
One Processor Entitlement	7895	42X	8491
Order Routing Indicator- System Plant	7895	42X	9169
New AIX License Core Counter	7895	42X	9440
New IBM i License Core Counter	7895	42X	9441
New Red Hat License Core Counter	7895	42X	9442
New SUSE License Core Counter	7895	42X	9443
Other AIX License Core Counter	7895	42X	9444
Other Linux License Core Counter	7895	42X	9445
3rd Party Linux License Core Counter	7895	42X	9446
VIOS Core Counter	7895	42X	9447
Month Indicator	7895	42X	9461
Day Indicator	7895	42X	9462
Hour Indicator	7895	42X	9463
Minute Indicator	7895	42X	9464
Qty Indicator	7895	42X	9465
Countable Member Indicator	7895	42X	9466
System Guides - English	7895	42X	ED21
System Guides - UK-English	7895	42X	ED22
System Guides - Brazilian Portuguese	7895	42X	ED23
System Guides - Japanese	7895	42X	ED24
System Guides - Japanese English	7895	42X	ED25
System Guides - Korean	7895	42X	ED26
System Guides - Korean English	7895	42X	ED27
System Guides - Chinese English	7895	42X	ED28
System Guides - Chinese Hong Kong	7895	42X	ED29
System Guides - Chinese Taiwan	7895	42X	ED2A
System Guides - French	7895	42X	ED2B
System Guides - Spanish	7895	42X	ED2C
System Guides - German	7895	42X	ED2D
System Guides - Italian	7895	42X	ED2E
IBM PureFlex System Standard Indicator	7895	42X	EFD2
IBM PureFlex System Enterprise Indicator	7895	42X	EFD3
IBM PureFlex System Expansion Indicator	7895	42X	EFD4
IBM PureFlex System Custom Configuration Indicator	7895	42X	EFD5
Trial PowerVM Live Partition Mobility	7895	42X	ELPM
4GB (2x2GB) Memory DIMMs, 1066 MHz, 2Gb DDR3 DRAM	7895	42X	EM04
16-core 3.3 GHZ POWER7 Processor Module	7895	42X	EPR2
32-core 3.2 GHZ POWER7 Processor Module	7895	42X	EPR4
32-core 3.5 GHZ POWER7 Processor Module	7895	42X	EPR6
RFID Tags for Servers, Compute Nodes, Chassis, Racks, and HMCs	7895	42X	ERF1
S&H - No Charge	7895	42X	ESC0
S&H	7895	42X	ESC4
1TB Removable Disk Drive Cartridge	7895	42X	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 7895-42X virtualization engine features

From FC:	To FC:	Return parts
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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

Reliability, Availability, and Serviceability (RAS)

The reliability of the IBM Flex System p460 Compute Node (7895-42X) 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

IBM Power Systems hardware documentation provides you with the following topical information:

- System overview
- Planning for the system
- Installing and configuring the system
- Working with consoles, terminals, and interfaces
- Managing system resources
- Working with operating systems and software applications
- Troubleshooting, service, and support

You can access the product documentation on a DVD (SK5T-7087) or at

<http://publib.boulder.ibm.com/infocenter/pseries/index.jsp>

The following information is shipped with the 7895-42X:

- Power Hardware Information DVD (SK5T-7087)
- Installing the 7895-42X
- Safety Information
- Statement of Warranty

Hardware documentation such as installation instructions, user's information, and service information is available to download or view at

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

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>

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.

Flex System Support Service

Recommended core technical support: Make the most of IBM Flex System technology, include the essential support services - to help keep both the hardware and software working day after day, at peak performance. It's the first step toward helping to protect the investment and sustain high levels of system availability. We offer service-level and response-time options to fit business needs. And to help with the introduction of these IBM systems we have created a tiered structure of offerings that will help get you started with a core support package of options. The tiered support structure of offerings for IBM systems builds upon the base hardware warranty service through enhanced service levels to the minimum recommended level of Essential Support elements covering 24x7 Hardware and Software Support which should include the following:

- **Continuous System Monitoring**
Electronic monitoring through IBM Electronic Service Agent that helps speed up problem-solving with automated, early detection of potential problems and system errors. IBM Electronic Service Agent provides proactive reporting of hardware events and enhances the ability to avoid problems with its call home abilities.
- **Hardware maintenance**
We recommend as part of an Essential Support element to every IBM system, IBM's world-class remote and on-site hardware problem determination and repair services enhanced with the call home abilities of IBM Electronic Service Agent. IBM Technical Support Services provided a tiered range of Warranty Service Upgrade and Maintenance offerings over and above base warranty to ensure high levels of availability and consistency of service. Our Essential Support tier including Warranty Service Upgrade is the recommended entry level for all our clients.
- **Software technical support**
We recommend as part of an Essential Support element with every IBM system, Software Support Services from IBM Technical Support Services providing access to help line calls for fast, accurate answers to your questions during installation and throughout ongoing operations. Base/Basic and Essential support options

are available across all geographies with High Availability and Premium services having availability tailored to geographic market needs.

For more information, visit

<http://www-935.ibm.com/services/us/en/it-services/tech-support-and-maintenance-services.html>

Technical information

Specified operating environment

Physical specifications

- IBM Flex System p460 Compute Node (7895-42X)
 - Height: 435.3 mm (17.1 in)
 - Width: 55.5 mm (2.18 in)
 - Depth: 492.7 mm (19.4 in)
 - Weight: 14.2 kg (31.3 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): 1268 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

Standard IBM Flex System p460 Compute Node configuration:

7895-42X	Processor	L3 cache	Memory	Local storage
	16-core 3.3/ 32-core 3.2/ 32-core 3.5 GHz POWER7	4MB/ core	4GB - 512GB	Two optional 2.5" HDDs or 1.8" SSDs

Minimum system configuration

Each 7895-42X configuration must contain a minimum of:

- One processor chosen from:
 - 16-core (4 x 4-core) 3.3 GHz 2-socket planar (#EPR2)
 - 32-core (4 x 8-core) 3.2 GHz 2-socket planar (#EPR4)
 - 32-core (4 x 8-core) 3.5 GHz 2-socket planar (#EPR6)
- Sixteen or thirty-two Processor Entitlements (one of these):
 - 16 x #8491 with #EPR2
 - 32 x #8491 with #EPR4 and #EPR6
- 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 (#7005)
 - SSDs (#8207, or follow-on) installed (#7065)
 - HDDs (#8274/#8276/#8311, or follow-on) installed (#7066)

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 (16 or 32 x #5225) will be included in the base configuration. Either PowerVM Standard Edition (16 or 32 x #5227) or PowerVM Enterprise Edition (16 or 32 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 p460 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 512 GB of system memory
 - A maximum of sixteen memory features (32 DIMMs) may be installed in the 7895-42X.
 - If a hard disk drive (HDD) is installed in the 7895-42X, 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 512 GB. Minimum memory with an HDD installed is 8 GB with a maximum of 256 GB.
 - Memory DIMMs must be installed in matched pairs (same size and speed) but memory features may be mixed.
 - p460 supports Memory Scrubbing, ECC, and Chipkill.
 - Memory features operate at 1066 MHz.
- Storage devices
 - The p460 does not support removable media within the compute node.
 - p460 has two locations for installation of one or two optional 2.5-inch SAS SFF hard disk drives (HDDs).
 - p460 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 p460.

Expansion cards

The IBM Flex System p460 Compute Node has four 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 2 x #1761 or #1764 is allowed.

A maximum of 4 x #1762 or #1763 is allowed.

Software requirements

The IBM Flex System p460 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 p460:

- 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 p460 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 become 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 p460 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 parts:

- 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, warranty service upgrades provide 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 information 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 42X

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 7895-42X	42X			Yes
One CSC Billing Unit	42X	0010	Both	Yes No
Ten CSC Billing Units	42X	0011	Both	Yes No
AIX Partition Specify	42X	0265	Initial	N/A No
Linux Partition Specify	42X	0266	Initial	N/A No
IBM i Partition Specify	42X	0267	Initial	N/A No
IBM i 6.1 w/6.1.1 Machine Code	42X	0566	Initial	N/A No
IBM i 7.1 Specify Code	42X	0567	Initial	N/A No
Purescale App Indicator	42X	0714	Initial	N/A No
US TAA Compliance Indicator	42X	0983	Both	Yes No
USB External Docking Station R	42X	1104	Both	Yes No

USB 160 GB Removable Disk Dr 42X	1106	Both	Yes	No
USB 500 GB Removable Disk Dr 42X	1107	Both	Yes	No
Custom Serv. Specify, Roch 42X	1140	Both	Yes	No
IB6132 2-port QDR InfiniBand 42X	1761	Both	Yes	No
EN4054 4-port 10Gb E'net Adapt 42X	1762	Both	Yes	No
EN2024 4-port 1Gb E'net Adaptr 42X	1763	Both	Yes	No
FC3172 2-port 8Gb FC Adapter 42X	1764	Both	Yes	No
Primary OS - IBM i 42X	2145	Initial	N/A	No
Primary OS AIX 42X	2146	Initial	N/A	No
Primary OS Linux 42X	2147	Initial	N/A	No
Factory Deconfiguration of 1 c 42X	2319	Initial	N/A	No
Integrate Flex Server Chassis 42X	4645	Initial	N/A	No
Integrate ITE in Chassis 42X	4646	Initial	N/A	No
One and only one rack indicator feature is required on all orders (#4650 to #4666). No Factory Integration Ind. 42X				
Rack Indicator, Rack 1 42X	4650	Initial	N/A	No
Rack Indicator, Rack 2 42X	4651	Initial	N/A	No
Rack Indicator, Rack 3 42X	4652	Initial	N/A	No
Rack Indicator, Rack 4 42X	4653	Initial	N/A	No
Rack Indicator, Rack 5 42X	4654	Initial	N/A	No
Rack Indicator, Rack 6 42X	4655	Initial	N/A	No
Rack Indicator, Rack 7 42X	4656	Initial	N/A	No
Rack Indicator, Rack 8 42X	4657	Initial	N/A	No
Rack Indicator, Rack 9 42X	4658	Initial	N/A	No
Rack Indicator, Rack 10 42X	4659	Initial	N/A	No
Rack Indicator, Rack 11 42X	4660	Initial	N/A	No
Rack Indicator, Rack 12 42X	4661	Initial	N/A	No
Rack Indicator, Rack 13 42X	4662	Initial	N/A	No
Rack Indicator, Rack 14 42X	4663	Initial	N/A	No
Rack Indicator, Rack 15 42X	4664	Initial	N/A	No
Rack Indicator, Rack 16 42X	4665	Initial	N/A	No
ChasIndicator-Not fact integr 42X	4666	Initial	N/A	No
BC Chassis, Chassis #1 42X	4680	Initial	N/A	No
BC Chassis, Chassis #2 42X	4681	Initial	N/A	No
BC Chassis, Chassis #3 42X	4682	Initial	N/A	No
BC Chassis, Chassis #4 42X	4683	Initial	N/A	No

BC Chassis, Chassis #5	42X	4684	Initial	N/A	No
BC Chassis, Chassis #6	42X	4685	Initial	N/A	No
BC Chassis, Chassis #7	42X	4686	Initial	N/A	No
BC Chassis, Chassis #8	42X	4687	Initial	N/A	No
BC Chassis, Chassis #9	42X	4688	Initial	N/A	No
Active Memory Expansion Enabl	42X	4689	Initial	N/A	No
IBM i CBU Specify Code	42X	4796	Both	Yes	
Software Preinstall	42X	4898	Both	Yes	No
PowerVM Express Edition	42X	5005	Initial	N/A	No
PowerVM Standard Edition	42X	5225	Both	Yes	No
PowerVM Enterprise Edition	42X	5227	Both	Yes	No
Top Cover, No SSDs/HDDs	42X	5228	Both	Yes	No
Top Cover, SSDs Installed	42X	7005	Both	Yes	No
Top Cover, HDDs Installed	42X	7065	Both	Yes	No
Top Cover, HDDs Installed	42X	7066	Both	Yes	No
AAP Software Pre-Inst.Indic.	42X	7305	Initial	N/A	No
32GB (2 x 16GB RDIMMs) Memory	42X	8145	Both	Yes	No
8GB (2x4GB RDIMMs) Memory	42X	8196	Both	Yes	No
16GB (2x8GB RDIMMs) Memory	42X	8199	Both	Yes	No
177 GB Solid State Drive	42X	8207	Both	Yes	No
300 GB SAS 10K RPM SAS HDD	42X	8274	Both	Yes	No
600 GB SAS 10K RPM SFF	42X	8276	Both	Yes	No
900 GB SAS 10K RPM SFF	42X	8311	Both	Yes	No
One Processor Entitlement	42X	8491	Both	Yes	No
Order Routing Indicator System	42X	9169	Initial	N/A	No
New AIX License Core Counter	42X	9440	Initial	N/A	No
New IBM i Lic Core Counter	42X	9441	Initial	N/A	No
New Red Hat Lic Core Counter	42X	9442	Initial	N/A	No
New SUSE Lic Core Counter	42X	9443	Initial	N/A	No
Other AIX Lic Core Counter	42X	9444	Initial	N/A	No
Other Linux Lic Core Counter	42X	9445	Initial	N/A	No
3rd Party Linux Lic Core Cnt	42X	9446	Initial	N/A	No
VIOS Core Counter	42X	9447	Initial	N/A	No
Month Indicator	42X	9461	Initial	N/A	No
Day Indicator	42X	9462	Initial	N/A	No
Hour Indicator	42X	9463	Initial	N/A	No

Minute Indicator					
	42X	9464	Initial	N/A	No
Qty Indicator					
	42X	9465	Initial	N/A	No
Countable Member Indicator					
	42X	9466	Initial	N/A	No
System Guides - English					
	42X	ED21	Both	Yes	No
System Guides - UK-English					
	42X	ED22	Both	Yes	No
System Guides - Brazilian Port					
	42X	ED23	Both	Yes	No
System Guides - Japanese					
	42X	ED24	Both	Yes	No
System Guides-Japanese English					
	42X	ED25	Both	Yes	No
System Guides - Korean					
	42X	ED26	Both	Yes	No
System Guides - Korean English					
	42X	ED27	Both	Yes	No
System Guides- Chinese English					
	42X	ED28	Both	Yes	No
System Guides - Chinese HK					
	42X	ED29	Both	Yes	No
System Guides - Chinese Taiwan					
	42X	ED2A	Both	Yes	No
System Guides - French					
	42X	ED2B	Both	Yes	No
System Guides - Spanish					
	42X	ED2C	Both	Yes	No
System Guides - German					
	42X	ED2D	Both	Yes	No
System Guides - Italian					
	42X	ED2E	Both	Yes	No
PureFlex System Standard Ind.					
	42X	EFD2	Initial	N/A	No
PureFlex System Enterprise Ind					
	42X	EFD3	Initial	N/A	No
PureFlex System Expansion Ind					
	42X	EFD4	Initial	N/A	No
PureFlex System Custom Ind.					
	42X	EFD5	Initial	N/A	No
Trial Live Partition Mobility					
	42X	ELPM	Both	Yes	No
4GB (2x2GB) Memory DIMMS 1066					
	42X	EM04	Both	Yes	No
16-core 3.3 GHZ POWER7 Proc					
	42X	EPR2	Both	Yes	No
32-core 3.2 GHZ POWER7 Proc					
	42X	EPR4	Both	Yes	No
32-core 3.5 GHZ POWER7 Proc					
	42X	EPR6	Both	Yes	No
RFID Tags for Compute Nodes					
	42X	ERF1	Initial	N/A	
S&H - No Charge					
	42X	ESC0	Initial	N/A	No
S&H					
	42X	ESC4	Initial	N/A	No
1TB Removable Disk Cartridge					
	42X	EU01	Both	Yes	No

Pricing terms

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

[ENUS-112-017-LIST_PRICES_2012_04_11.PDF](#)

Feature conversions

Feature conversions for 7895-42X 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

Maintenance charges

For additional information on maintenance and pricing, contact your IBM representative or your IBM Business Partner, or call 1-800-IBM-CALL (1-800-426-2255).

ServicePac prices

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

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