

Power Systems Concurrent maintenance



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Note

Before using this information and the product it supports, read the information in "Notices," on page 35, "Safety notices" on page v, the *IBM Systems Safety Notices* manual, G229-9054, and the *IBM Environmental Notices and User Guide*, Z125–5823.

This edition applies to IBM Power Systems[™] servers that contain the POWER6[®] processor and to all associated models.

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Safety notices

Safety notices may be printed throughout this guide:

- **DANGER** notices call attention to a situation that is potentially lethal or extremely hazardous to people.
- **CAUTION** notices call attention to a situation that is potentially hazardous to people because of some existing condition.
- Attention notices call attention to the possibility of damage to a program, device, system, or data.

World Trade safety information

Several countries require the safety information contained in product publications to be presented in their national languages. If this requirement applies to your country, a safety information booklet is included in the publications package shipped with the product. The booklet contains the safety information in your national language with references to the U.S. English source. Before using a U.S. English publication to install, operate, or service this product, you must first become familiar with the related safety information in the booklet. You should also refer to the booklet any time you do not clearly understand any safety information in the U.S. English publications.

German safety information

Das Produkt ist nicht für den Einsatz an Bildschirmarbeitsplätzen im Sinne § 2 der Bildschirmarbeitsverordnung geeignet.

Laser safety information

IBM[®] servers can use I/O cards or features that are fiber-optic based and that utilize lasers or LEDs.

Laser compliance

All lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with IEC 60825 as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

CAUTION:

This product might contain one or more of the following devices: CD-ROM drive, DVD-ROM drive, DVD-RAM drive, or laser module, which are Class 1 laser products. Note the following information:

- Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.
- Use of the controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.

(C026)

CAUTION:

Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than Class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. (C027)

CAUTION:

This product contains a Class 1M laser. Do not view directly with optical instruments. (C028)

CAUTION:

Some laser products contain an embedded Class 3A or Class 3B laser diode. Note the following information: laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam. (C030)

Power and cabling information for NEBS (Network Equipment-Building System) GR-1089-CORE

The following comments apply to the IBM servers that have been designated as conforming to NEBS (Network Equipment-Building System) GR-1089-CORE:

The equipment is suitable for installation in the following:

- Network telecommunications facilities
- Locations where the NEC (National Electrical Code) applies

The intrabuilding ports of this equipment are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intrabuilding ports of this equipment *must not* be metallically connected to the interfaces that connect to the OSP (outside plant) or its wiring. These interfaces are designed for use as intrabuilding interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE) and require isolation from the exposed OSP cabling. The addition of primary protectors is not sufficient protection to connect these interfaces metallically to OSP wiring.

Note: All Ethernet cables must be shielded and grounded at both ends.

The ac-powered system does not require the use of an external surge protection device (SPD).

The dc-powered system employs an isolated DC return (DC-I) design. The DC battery return terminal *shall not* be connected to the chassis or frame ground.

Concurrent maintenance

Concurrent maintenance improves the system availability by avoiding scheduled system outage. Hardware can be added and repaired while the system is powered on but all applications are quiesced (stopped).

The central electronics complex (CEC) concurrent maintenance tasks can be performed on 9117-MMA, 9119-FHA, and 9406-MMA systems that are managed by a Hardware Management Console (HMC).

The CEC concurrent maintenance tasks provide the ability to perform maintenance (repair, add, or upgrade) on field replaceable units (FRUs) within a CEC while the system is powered on. Even though the system remains powered on, there may be impacts to the partitions and the performance of the system. For example, when a CEC node is physically removed from the system to repair a FRU, the processors, memory, and I/O resources hosted by that node will no longer be available to the partitions. The impacts on a specific system configuration will vary depending upon a number of factors including spare memory resources, spare processor resources, and I/O redundancy configuration (mirroring or multi-path).

For additional information about the CEC concurrent maintenance functions, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

Guidelines for CEC concurrent maintenance operations

The following guidelines apply to CEC concurrent maintenance operations.

- 1. All serviceable hardware events must be repaired and closed before starting a concurrent repair or add operation. This eliminates the possibility that an existing hardware failure will cause the concurrent repair or add operation to fail.
- 2. Only one concurrent maintenance operation can be performed at a time from one HMC.
- **3**. A second concurrent maintenance operation cannot be started until the first one has been completed without failure. If a concurrent operation fails, the same operation must be restarted and completed before attempting another operation.
- 4. Multiple concurrent maintenance operations must be completed by doing a series of single concurrent maintenance operations.
- 5. System firmware enforces the node and GX adapter plugging order. Only the next GX adapter slot or node position based on the plugging order is available.
- 6. When you perform multiple concurrent maintenance adds that include a node and GX adapter, the GX adapter must be installed in the node before the node is installed in the system. If this order is observed, the memory in the new node will be used for the 128 MB of memory that is required for the GX adapter. (The node must have approximately 128 MB of memory per GX adapter to support the adapter's translation control entry (TCE) table.) The GX adapter in the new node will be activated during the node add (if the 128 MB memory requirement is met). If the GX adapter is installed after the new node is installed and activated, the plugging rules for GX adapters will be enforced. In this case, the GX adapter must be installed in another node with another concurrent add operation.
- 7. For multiple adds that include node or GX adapter adds, as well as I/O expansion adds, the concurrent node or GX adapter add must be completed first. The I/O expansion unit can then be added later as a separate concurrent I/O expansion unit add.
- **8**. All of the concurrent maintenance activities, with the exception of the 9117-MMA and 9406-MMA GX adapter add, must be performed by a service representative.

Checklists are available that list the prerequisite planning tasks that are required prior to performing concurrent maintenance.

What's new in Concurrent maintenance

Read about new or significantly changed information for concurrent maintenance since the previous update of this topic collection.

October 2009

The following updates have been made to the content:

- Added planning checklist for system controller concurrent repair.
- Added planning checklist for expansion unit concurrent removal.

Adding nodes or GX adapters

Use this information to concurrently add nodes or GX adapters to your 9117-MMA, 9119-FHA, and 9406-MMA.

Use the checklists for the planning tasks that are required before you concurrently add a node or GX adapter.

Planning checklist for concurrent node addition (9117-MMA and 9406-MMA)

Use this checklist as a guide to complete the planning requirements for a concurrent node addition for the 9117-MMA and 9406-MMA. The planning checklist contains a list of tasks that must be completed before you concurrently add a node, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term service representative refers to your IBM service representative.

If the responsibility states *customer*, the task must be completed by the customer before the IBM service representative arrives.

Table 1. Concurrent node addition checklist for the 9117-MMA and 9406-MMA

Con	current node add tasks	Responsibility
	Verify that the system firmware that is activated on the system meets the requirements shown in Power 570 system firmware and HMC levels. For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	Customer Service representative must verify
	Verify that the code level installed on the HMC meets the requirements shown in Power 570 system firmware and HMC levels. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify

Table 1. Concurrent node addition checklist for the 9117-MMA and 9406-MMA (continued)

Con	current node add tasks	Responsibility
	Verify that the enclosure serial number in the vital product data (VPD) matches	Customer
	serial numbers does not match, contact IBM to correct it during a maintenance window. Concurrent repair requires a valid enclosure serial number for each drawer in the system.	Service representative must verify
	To verify the enclosure serial number in the system VPD, complete the following steps.	
	1. Logon to the HMC, then	
	2. Select System Management → Servers → target server	
	3. Under Tasks: system name in the lower part of the HMC panel, click Properties .	
	4. Click I/O.	
	5. Look at the left side in the Slot column. Verify that none of the location codes in the slot column have the format <i>Uxxx.yyy.DQ1234#</i> and that the serial numbers shown match the enclosure serial numbers on the labels. Scroll to the bottom to ensure that there are no invalid enclosure serial numbers and that all serial numbers match.	
_	6. If any of the location codes have the format <i>Uxxx.yyy.DQ1234#</i> , or do not match, contact IBM to schedule a repair.	
	Verify the network connections between the system's service processors and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information on testing the network connections, see Testing the connection between the HMC and the managed system.	Customer Service representative must verify
	Ensure that sufficient space is available in the rack that contains the system for another node to be installed under the existing nodes.	Customer
	Ensure that the flexible service processor (FSP) cable with connections for an additional node is installed on the back of the system. This must be done with the system powered off during a scheduled upgrade or maintenance window before the service representative arrives to install the new node.	Customer Service representative must verify
	Ensure that the system is not in power-saver mode. Use the HMC to disable	Customer
	power-saver mode, if necessary. For more information, see Power management.	Service representative must verify
	Obtain and apply Capacity Upgrade on demand (CUoD) activation codes prior to the operation so that the processor and memory resources are available immediately after the concurrent maintenance operation. For information about CUoD activation codes, see Capacity Upgrade on Demand activation codes.	Customer
_	Adding a node increases the power requirements of the system. If necessary, the power circuits that supply the system must be upgraded to handle these additional power requirements. This upgrade must be complete before the concurrent node add begins.	Customer responsibility to perform the required site planning activities
	If the customer wants to dynamically add the new processor and memory resources to activated partitions after concurrent maintenance, the profiles that were used to activate the partitions must have the maximums for processors and memory set to the appropriate values. When concurrent maintenance is complete, the processor and memory resources can be added to the partitions using dynamic logical partitions (DLPAR). For information on DLPAR, see Dynamic logical partitioning.	Customer

Table 1. Concurrent node addition checklist for the 9117-MMA and 9406-MMA (continued)

Cor	current node add tasks	Responsibility		
	Enable service processor redundancy, except on a 9117-MMA or 9406-MMA with a single node.	Customer		
		Service representative must verify		
	The system must be quiesced before the concurrent node add begins. This means that all critical applications must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer		
Not	Notes:			

- The concurrent node add function adds and enables the I/O adapters only in the new node.
- When a node is being added to a single-node system, the redundant service processor function is not activated automatically. It will be activated the next time the system is power cycled during a scheduled maintenance window.

Planning checklist for concurrent GX adapter addition (9117-MMA and 9406-MMA)

Use this checklist as a guide to complete the planning requirements for a concurrent GX adapter addition for the 9117-MMA and 9406-MMA. The checklist contains a list of planning tasks that must be completed before you concurrently add a GX adapter, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term service representative refers to your IBM service representative.

Table 2.	Concurrent G	GX adapter	addition	checklist for t	the 9117	^r -MMA a	nd 9406-N	лМА
10010 21	e en le an en e	and adaptor	adamon			111111 · Ca	10 0 100 11	

Con	current GX adapter add tasks	Responsibility
	Verify that the system firmware that is activated on the system meets the requirements shown in Power 570 system firmware and HMC levels. All deferred	Customer
	fixes must be activated before the concurrent GX adapter add begins. To verify that the IPL on the managed system has installed and activated the correct level of system firmware, use the View System Information function on the HMC (see View system information). On the View System Information screen:	Service representative must verify, if present
	• If the engineering change (EC) number on the left in the Managed System Primary row is 01EH340, then the Platform IPL level must be 61 (Service Pack 3.4.1) or later.	
	If there is a level present in the Unactivated Deferred Level column, this is an indication that deferred firmware fixes are available that have not been installed. This level must be activated before the concurrent GX adapter add operation begins. This requires restarting the system to install the deferred fixes. Use the Change Licensed Internal Code for the current release function on the HMC to activate the correct level of system firmware. For more information, see Change Licensed Internal Code for the current release.	
	For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	
	Verify that the code level installed on the HMC meets the requirements shown in Power 570 system firmware and HMC levels. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify, if present
	Verify that the enclosure serial number in the vital product data (VPD) matches the serial number on the enclosure label on the front of each node. If one or more serial numbers does not match, contact IBM to correct it during a maintenance window. Concurrent repair requires a valid enclosure serial number for each drawer in the system.	Customer Service representative must verify
	To verify the enclosure serial number in the system VPD, complete the following steps.	
	1. Logon to the HMC, then	
	2. Select System Management → Servers → target server	
	3. Under Tasks: system name in the lower part of the HMC panel, click Properties .	
	4. Click I/O.	
	5. Look at the left side in the Slot column. Verify that none of the location codes in the Slot column have the format <i>Uxxx.yyy.DQ1234#</i> and that the serial numbers shown match the enclosure serial numbers on the labels. Scroll to the bottom to ensure that there are no invalid enclosure serial numbers and that all serial numbers match.	
	6. If any of the location codes have the format <i>Uxxx.yyy.DQ1234</i> #, or do not match, contact IBM to schedule a repair.	
	Verify the network connections between the system's service processors and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information on testing the network connections, see Testing the connection between the HMC and the managed system.	Customer

Table 2. Concurrent GX adapter addition checklist for the 9117-MMA and 9406-MMA (continued)

Con	current GX adapter add tasks	Responsibility		
	Ensure that enough memory is reserved for each GX adapter that is being added. The system reserves approximately 128 MB of memory per adapter by default for one adapter. Additional memory can be reserved for GX adapters using the Advanced System Management Interface (ASMI). You must ensure that sufficient memory is installed to support the additional memory that the system will reserve for the new adapter before it is installed. The new memory reservation setting takes effect the next time you restart the system.	Customer		
	The GX adapter cannot be added to a node that has been deconfigured. The node must be repaired and reconfigured before another GX adapter can be added. To verify that all nodes in the system are configured, see Using the ASMI to view deconfigured resources.	Customer Service representative must verify on-site ¹		
	Enable service processor redundancy, except on a 9117-MMA or 9406-MMA with a single node.	Customer Service representative must verify		
	The system must be quiesced before the concurrent GX adapter add begins. This means that all critical application must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer		
¹ Ha	¹ Hardware in a node can fail at any time, then a node can become deconfigured during system IPL to isolate the			

^a Hardware in a node can fail at any time, then a node can become deconfigured during system IPL to isolate the failure. The failure and deconfiguration event can occur after the hardware upgrade package has arrived at the customer site and the service representative has been dispatched. The service representative must ask the customer if the system has any outstanding deferred repairs.

Planning checklist for concurrent node addition (9119-FHA)

Use this checklist as a guide to complete the planning requirements for a concurrent node addition for the 9119-FHA. The checklist contains a list of planning tasks that must be completed before you concurrently add a node, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term *service representative* refers to your IBM service representative.

Table 3. Concurrent node addition checklist for the 9119-FHA

Concurrent node add tasks		Responsibility
	Verify that the system firmware that is activated on the system meets the	Customer
	requirements shown in Power 595 system firmware and HMC levels. For	
	information about determining firmware levels using the Hardware Management	Service representative must
	Console (HMC), see Using the HMC to view the existing firmware levels.	verify

Table 3. Concurrent node addition checklist for the 9119-FHA (continued)

Con	current node add tasks	Responsibility
	Verify that the code level installed on the HMC meets the requirements shown in Power 595 system firmware and HMC levels. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify
	Verify the network connections between the system's service processors and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information about testing the network connections, see Testing the connection between the HMC and the managed system.	Customer
	Ensure that the system is not in power-saver mode. Use the HMC to disable	Customer
	power-saver mode, if necessary. For more mornation, see rower management.	Service representative must verify
	Obtain and apply Capacity Upgrade on Demand (CUoD) activation codes prior to the operation so that the processor and memory resources are available immediately after the concurrent maintenance operation. For information on CUoD activation codes, see Capacity Upgrade on Demand activation codes.	Customer
	Adding a node increases the power requirements of the system. If necessary, the power circuits supplying the system must be upgraded to handle these additional power requirements. This upgrade must be complete before the concurrent node add begins.	Customer responsibility to perform the required site planning activities
	If an upgrade to the bulk power system is required to support the new node, the upgrade must be complete and fully operational before the concurrent node add begins.	Service representative
	If the customer wants to dynamically add the new processor and memory resources to activated partitions after concurrent maintenance, the profiles that were used to activate the partitions must have the maximums for processors and memory set to the appropriate values. When concurrent maintenance is complete, the processor and memory resources can be added to the partitions using dynamic logical partitions (DLPAR). For information on DLPAR, see Dynamic logical partitioning.	Customer
	Enable service processor redundancy.	Customer
		Service representative must verify
	The system must be quiesced before the concurrent node add begins. This means that all critical applications must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer

Planning checklist for concurrent GX adapter addition (9119-FHA)

Use this checklist as a guide to complete the planning requirements for a concurrent GX adapter addition for the 9119-FHA. The checklist contains a list of planning tasks that must be completed before you concurrently add a GX adapter, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570

Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term *service representative* refers to your IBM service representative.

Table 4. Concurrent GX adapter addition checklist for the 9119-FHA

Con	current GX adapter add tasks	Responsibility
	Verify that the system firmware that is activated on the system meets the requirements shown in Power 595 system firmware and HMC levels. All deferred fixes must be activated before the concurrent GX adapter add begins. To verify that the IPL on the managed system has installed and activated the correct level of system firmware, use the View System Information function on the Hardware Management Console (HMC) (see View system information). On the View System Information screen:	Customer Service representative must verify
	• If the engineering change (EC) number on the left in the Managed System Primary row is 01EH340, then the Platform IPL level must be 61 (Service Pack 3.4.1) or later.	
	If there is a level present in the Unactivated Deferred Level column, it is an indication that deferred firmware fixes are available that have not been installed. This level must be activated before the concurrent GX adapter add operation begins. This requires restarting the system to install the deferred fixes. Use the Change Licensed Internal Code for the current release function on the HMC to activate the correct level of system firmware For more information, see Change Licensed Internal Code for the current release.	
	For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	
	Verify that the code level installed on the HMC meets the requirements shown in Power 595 system firmware and HMC levels. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify
	Verify the network connections between the system's service processors and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information about testing the network connections, see Testing the connection between the HMC and the managed system.	Customer
	Ensure that enough memory is reserved for each GX adapter that is being added. The system reserves approximately 128 MB of memory per adapter by default for one adapter for a system with one node and up to a maximum of two adapters for a system with two nodes or more. Additional memory can be reserved for GX adapters using the Advanced System Management Interface (ASMI). You must ensure that sufficient memory is installed to support the additional memory that the system will reserve for the new adapter before it is installed. The new memory reservation setting takes effect the next time you restart the system.	Customer Service representative must verify
	The GX adapter cannot be added to a node that has been deconfigured. The node must be repaired and reconfigured before another GX adapter can be added. To verify that all nodes in the system are configured, see Using the ASMI to view deconfigured resources.	Customer Service representative must verify onsite

 Table 4. Concurrent GX adapter addition checklist for the 9119-FHA (continued)

Con	current GX adapter add tasks	Responsibility
	Enable service processor redundancy.	Customer
		Service representative must verify
	The system must be quiesced before the concurrent GX adapter add begins. This means that all critical application must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer

Adding or upgrading memory

Use this information to concurrently add or upgrade memory for your 9117-MMA, 9119-FHA, and 9406-MMA.

Use the checklists for the planning tasks that are required before you concurrently add or upgrade memory.

Planning checklist for concurrent memory add or upgrade (9117-MMA and 9406-MMA)

Use this checklist as a guide to complete the planning requirements for a memory add or upgrade for the 9117-MMA and 9406-MMA. The checklist contains a list of planning tasks that must be completed before you concurrently add or upgrade, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term *service representative* refers to your IBM service representative.

If the responsibility states *customer*, the task must be completed by the customer before the IBM service representative arrives.

Table 5. Concurrent memory add or upgrade checklist for the 9117-MMA and 9406-MMA

Con	current memory add or upgrade tasks	Responsibility
	Verify that the system firmware that is activated on the system meets the requirements shown in Power 570 system firmware and HMC levels. For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	Customer Service representative must verify
	Verify that the code level installed on the HMC meets the requirements shown in Power 570 system firmware and HMC levels. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify

Con	current memory add or upgrade tasks	Responsibility
	If system firmware Ex340_061 (service pack 3.4.1) or Ex340_075 (service pack 3.4.2) is installed on the system complete the following steps on the HMC	Customer
	1 Co to Systems Management & Sources & taugat sources	Service representative must
	2. From the list of partitions that are running on the target conver calest the first	verify
	2. From the list of partitions that are running on the target server, select the first partition name in the list.	
	3. In the Partition Properties panel, select Hardware → Processors .	
	• If the partition uses shared processors, no action is required.	
	• If the partition has dedicated processors, select Allow when partition is inactive under Processor Sharing before you perform a concurrent maintenance operation.	
	4. Repeat this procedure for all partitions that are defined on the target system before you begin the concurrent maintenance operation.	
	Verify that the enclosure serial number in the vital product data (VPD) matches	Customer
	the serial number on the enclosure label on the front of each node. If one or more serial numbers does not match, contact IBM to correct it during a maintenance window. Concurrent repair requires a valid enclosure serial number for each drawer in the system.	Service representative must verify
	To verify the enclosure serial number in the system VPD, complete the following steps.	
	1. Logon to the HMC, then	
	2. Select System Management → Servers → <i>target server</i>	
	3 . Under Tasks: system name, click Properties .	
	4. Select I/O.	
	5. Look at the left side in the Slot column. Verify that none of the location codes in the Slot column have the format <i>Uxxx.yyy.DQ1234#</i> and that the serial numbers shown match the enclosure serial numbers on the labels. Scroll to the bottom to ensure that there are no invalid enclosure serial numbers and that all serial numbers match.	
	6. If any of the location codes have the format <i>Uxxx.yyy.DQ1234#</i> , or do not match, contact IBM to schedule a repair.	
	Verify that the logical memory block size is not set to 16 MB if the server firmware is EM340_061.	Customer
	• For information about determining firmware levels using the hardware management console, see Using the HMC to view existing firmware levels.	Service representative must verify
	• For information about determining the logical memory block size, see Changing the logical memory block size. The Logical Memory Block Size panel shows the current setting.	
	If the firmware level is EM340_061 and the logical memory block size is 16 MB, the procedure must be performed with the power off.	
	Verify the network connections between the system's service processors and the HMC before the service provider arrives by using the service processor status function on the HMC. For more information on testing the network connections, see Testing the connection between the HMC and the managed system.	
	Verify that more than one node is present in the system. Concurrent memory add or upgrade cannot be done if the system has only one node.	Customer
_		Service representative must verify

Table 5. Concurrent memory add or upgrade checklist for the 9117-MMA and 9406-MMA (continued)

Table 5. Concurrent memory add or upgrade checklist for the 9117-MMA and 9406-MMA (continued)

Concurrent memory add or upgrade tasks		Responsibility
	Verify that the following program temporary fixes (PTFs) are activated, if IBM i partitions are running on the system.For IBM i 5.4, the MF45678 PTF is required.For IBM i 6.1, the MF45581 PTF is required.	Customer Service representative must verify
	If the PTFs are not activated, the IBM 1 partitions must be powered off before the concurrent maintenance operation can begin.	
	Ensure that the system is not in power-saver mode. Use the HMC to disable power-saver mode, if necessary. For more information, see Power management.	Customer Service representative must verify
	Obtain and apply Capacity Upgrade on Demand (CUoD) activation codes prior to the operation so that the processor and memory resources are available immediately after the concurrent maintenance. For information about CUoD activation codes, see Capacity Upgrade on Demand activation codes.	Customer
	Run the Display Service Effect utility on the HMC to determine whether the system is prepared for a concurrent memory add or upgrade. For more information about the utility, see "Displaying the effect of system node evacuation" on page 27.	Customer Service representative must verify
	Enable service processor redundancy, except on a 9117-MMA or 9406-MMA with a single node.	Customer Service representative must verify
	The system must be quiesced before the concurrent memory add or upgrade operation begins. This means that all critical applications must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer

Planning checklist for concurrent memory add or upgrade (9119-FHA)

Use this checklist as a guide to complete the planning requirements for a memory add or upgrade for the 9119-FHA. The checklist contains a list of planning tasks that must be completed before you concurrently add or upgrade memory, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term service representative refers to your IBM service representative.

Table 6. Concurrent memory add or upgrade checklist for the 9119-FHA

Concurrent memory add or upgrade tasks		Responsibility
	Verify that the system firmware that is activated on the system meets the requirements shown in Power 595 system firmware and HMC levels. For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	Customer Service representative must verify

Table 6. Concurrent memory add or upgrade checklist for the 9119-FHA (continued)

Con	current memory add or upgrade tasks	Responsibility
	Verify that the code level installed on the HMC meets the requirements shown in Power 595 system firmware and HMC levels. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about	Customer Service representative must verify
	data.	
	If system firmware Ex340_061 (service pack 3.4.1) or Ex340_075 (service pack 3.4.2) is installed on the system, complete the following steps on the HMC.	Customer
	1. Go to Systems Management → Servers → target server.	verify
	2. From the list of partitions that are running on the target server, select the first partition name in the list.	
	3. In the Partition Properties panel, select Hardware → Processors .	
	• If the partition uses shared processors, no action is required.	
	 If the partition has dedicated processors, select Allow when partition is inactive under Processor Sharing before you perform a concurrent maintenance operation. 	
	4. Repeat this procedure for all partitions that are defined on the target system before you begin the concurrent maintenance operation.	
	Verify that the logical memory block size is not set to 16 MB if the server firmware is EH340_061.	Customer
	 For information about determining firmware levels using the hardware management console, see Using the HMC to view existing firmware levels. For information about determining the logical memory block size, see Changing the logical memory block size. The Logical Memory Block Size panel shows the current setting. 	verify
	If the firmware level is EH340_061 and the logical memory block size is 16 MB, the procedure must be performed with the power off.	
	Verify that the network connections between the system's service processors and the HMC before the service provider arrives by using the service processor status function on the HMC. For more information on testing the network connections, see Testing the connection between the HMC and the managed system.	
	Verify that more than one node is present in the system. Concurrent memory add	Customer
	or upgrade cannot be done if the system has only one node.	Service representative must verify
	Verify that the following program temporary fixes (PTFs) are activated, if IBM i partitions are running on the system.	Customer
	 For the V5R4 version of IBM i the PTF required is MF45678. For the V6R1 version of IBM i the PTF required is MF45581. 	Service representative must verify
	If the PTFs are not activated, the IBM i partitions must be powered off before the concurrent maintenance operation can begin.	
	Ensure that the system is not in power-saver mode. Use the HMC to disable power-saver mode, if necessary. For more information, see Power management.	Customer Service representative must verify
	Obtain and apply Capacity Upgrade on Demand (CUoD) activation codes prior to the operation so that the processor and memory resources are available immediately after the concurrent maintenance. For information about CUoD activation codes, see Capacity Upgrade on Demand activation codes.	Customer

Table 6. Concurrent memory add or upgrade checklist for the 9119-FHA (continued)

Con	current memory add or upgrade tasks	Responsibility
	Run the Display Service Effect utility on the HMC to determine if the system is prepared for a concurrent memory add or upgrade. For more information on the utility, see "Displaying the effect of system node evacuation" on page 27.	Customer Service representative must verify
_	Enable service processor redundancy.	Service representative
	The system must be quiesced before the concurrent memory add or upgrade begins. This means that all critical applications must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer

Repairing node FRUs, GX adapters, or system controllers

Use this information to concurrently repair node field replaceable units (FRUs), GX adapters for your 9117-MMA, 9119-FHA, and 9406-MMA, or repair system controllers for your 9119-FHA.

Use the checklists for the planning tasks that are required before you concurrently repair node FRUs, GX adapters, or system controllers.

Planning checklist for concurrent node repair (9117-MMA and 9406-MMA)

Use this checklist as a guide to complete the planning requirements for a concurrent node repair for the 9117-MMA and 9406-MMA. The checklist contains a list of planning tasks that must be completed before you concurrently repair a node, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term *service representative* refers to your IBM service representative.

If the responsibility states *customer*, the task must be completed by the customer before the IBM service representative arrives.

Table 7. Concurrent node repair checklist for the 9117-MMA and 9406-MMA

Concurrent node repair tasks		Responsibility
	Verify that the system firmware level EM340_061 (Service Pack 3.4.1), or later, is activated on the system. Firmware level EM340_ <i>xxx</i> is required for a concurrent repair if resources in the node are active and being used by the system. For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	Customer Service representative must verify
	Verify that the HMC level V7R3.4.0 (Service Pack 1), or later, is installed on the HMC that manages the system. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify

Con	current node repair tasks	Responsibility
	If system firmware Ex340_061 (service pack 3.4.1) or Ex340_075 (service pack 3.4.2) is installed on the system, complete the following steps on the HMC.	Customer
	1. Go to Systems Management → Servers → target server.	Service representative must
	2. From the list of partitions that are running on the target server, select the first partition name in the list.	veriry
	3. In the Partition Properties panel, select Hardware → Processors .	
	• If the partition uses shared processors, no action is required.	
	• If the partition has dedicated processors, select Allow when partition is inactive under Processor Sharing before you perform a concurrent maintenance operation.	
	4. Repeat this procedure for all partitions that are defined on the target system before you begin the concurrent maintenance operation.	
	Verify that the logical memory block size is not set to 16 MB if the server firmware is EM340_061.	Customer
	 For information about determining firmware levels using the hardware management console, see Using the HMC to view existing firmware levels. 	verify
	• For information about determining the logical memory block size, see Changing the logical memory block size. The Logical Memory Block Size panel shows the current setting.	
	If the firmware level is EM340_061 and the logical memory block size is 16 MB, the procedure must be performed with the power off.	
	Verify that the enclosure serial number in the vital product data (VPD) matches the serial number on the enclosure label on the front of each node. If one or more serial numbers does not match, contact IBM to correct it during a maintenance window. Concurrent repair requires a valid enclosure serial number for each drawer in the system.	Customer Service representative must verify
	To verify the enclosure serial number in the system VPD, complete the following steps.	
	1. Logon to the HMC, then	
	2. Select System Management → Servers → target server	
	3 . Under Tasks: system name in the lower part of the HMC panel, click Properties .	
	4. Click I/O.	
	5. Look at the left side in the Slot column. Verify that none of the location codes in the slot column have the format <i>Uxxx.yyy.DQ1234#</i> and that the serial numbers shown match the enclosure serial numbers on the labels. Scroll to the bottom to ensure that there are no invalid enclosure serial numbers and that all serial numbers match.	
	6. If any of the location codes have the format <i>Uxxx.yyy.DQ1234#</i> , or do not match, contact IBM to schedule a repair.	
	Verify the network connections between the system's service processors and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information about testing the network connections, see Testing the connection between the HMC and the managed system.	Customer Service representative must verify

Table 7. Concurrent node repair checklist for the 9117-MMA and 9406-MMA (continued)

Table 7. Concurrent node repair checklist for the 9117-MMA and 94	06-MMA (continued)
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Concurrent node repair tasks		Responsibility
	Verify that the following program temporary fixes (PTFs) are activated, if IBM i partitions are running on the system.For IBM i 5.4, the MF45678 PTF is required.For IBM i 6.1, the MF45581 PTF is required.	Customer Service representative must verify
	If the PTFs are not activated, the IBM i partitions must be powered off before the concurrent maintenance operation can begin.	
	Ensure that the system is not in power-saver mode. Use the HMC to disable power-saver mode, if necessary. For more information, see Power management.	Customer Service representative must verify
	Run the Display Service Effect utility on the HMC to determine if the system is prepared for a concurrent node repair. For more information about the utility, see "Displaying the effect of system node evacuation" on page 27. When using this utility on a node that is deactivated (cold repair), the utility will report no errors. Run the Display Service Effect utility on the HMC to determine if the system is prepared for a concurrent hot node repair.	Customer Service representative must verify
	Enable service processor redundancy, except on a 9117-MMA or 9406-MMA with a single node.	Customer Service representative must verify
	The system must be quiesced before the concurrent node repair begins. This means that all critical applications must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer
	Ensure that the replacement parts are the same type as the parts that are being removed.	Service representative
	Replace only the existing parts. New hardware must not be added during a concurrent node repair.	Service representative
	Ensure that existing node hardware is not moved during the concurrent node repair.	Service representative

Planning checklist for concurrent GX adapter cold repair (9117-MMA and 9406-MMA)

Use this checklist as a guide to complete the planning requirements for a concurrent GX adapter cold repair for the 9117-MMA and 9406-MMA. The checklist contains a list of planning tasks that must be completed before you do a concurrent GX adapter cold repair, and it also lists who is responsible for each task.

A *concurrent cold repair* is a repair in which the hardware being repaired is electrically isolated from the running system. The hardware that is isolated has no resources that are being used by the system when the repair is initiated.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term *service representative* refers to your IBM service representative.

Con	current GX adapter cold repair tasks	Responsibility
	Verify that the system firmware level EM340_061 (Service Pack 3.4.1), or later, is activated on the system. All deferred fixes must be activated before the concurrent cold GX adapter repair begins. To verify that the managed system has IPLed the level of system firmware that must be installed and activated, use the View System Information function on the HMC (see View system information). On the View System Information screen:	Customer Service representative must verify
	• If the engineering change (EC) on the left in the Managed system primary row is 01EH340, the Platform 61 (Service Pack 3.4.1) or later.	
	If there is a level present in the Unactivated Deferred Level column, this is an indication that deferred firmware fixes are available that have not been installed. This level must be activated before the concurrent GX adapter add operation begins. This requires restarting the system to install the deferred fixes. Use the Change Licensed Internal Code for the current release function on the HMC to activate the correct level of system firmware. For more information, see Change Licensed Internal Code for the current release.	
	For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	
	Verify that the HMC level V7R3.4.0 (Service Pack 1), or later, is installed on the HMC that manages the system. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify
	If system firmware Ex340_061 (service pack 3.4.1) or Ex340_075 (service pack 3.4.2) is installed on the system, complete the following steps on the HMC.	Customer
	 Go to Systems Management → Servers → target server. From the list of partitions that are running on the target server, select the first partition name in the list. 	Service representative must verify
	3 . In the Partition Properties panel, select Hardware → Processors .	
	• If the partition uses shared processors, no action is required.	
	 If the partition has dedicated processors, select Allow when partition is inactive under Processor Sharing before you perform a concurrent maintenance operation. 	
	4. Repeat this procedure for all partitions that are defined on the target system before you begin the concurrent maintenance operation.	

Table 8. Concurrent GX adapter cold repair checklist for the 9117-MMA and 9406-MMA

Table 8. Concurrent GX adapter cold repair checklist for the 9117-MMA and 9406-MMA (continued)

Con	current GX adapter cold repair tasks	Responsibility
	Verify that the enclosure serial number in the vital product data (VPD) matches the serial number on the enclosure label on the front of each node. If one or more serial numbers does not match, contact IBM to correct it during a maintenance window. Concurrent repair requires a valid enclosure serial number for each drawer in the system.	Customer Service representative must verify
	To verify the enclosure serial number in the system VPD, complete the following steps.	
	1. Logon to the HMC, then	
	2. Select System Management → Servers → target server	
	 Under Tasks: system name in the lower part of the HMC panel, click Properties. 	
	4. Click I/O.	
	5. Look at the left side in the Slot column. Verify that none of the location codes in the Slot column have the format <i>Uxxx.yyy.DQ1234#</i> and that the serial numbers shown match the enclosure serial numbers on the labels. Scroll to the bottom to ensure that there are no invalid enclosure serial numbers and that all serial numbers match.	
	6. If any of the location codes have the format <i>Uxxx.yyy.DQ1234#</i> , or do not match, contact IBM to schedule a repair.	
	Verify the network connections between the system's service processors and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information about testing the network connections, see Testing the connection between the HMC and the managed system.	Customer Service representative must verify
	The GX adapter cannot be repaired in a node that has been deconfigured. The	Customer
	node must be repaired and reconfigured before a GX adapter can be repaired. To verify that all nodes in the system are configured, see Using the ASMI to view deconfigured resources.	Service representative must verify on-site ¹
	Enable service processor redundancy, except on a 9117-MMA or 9406-MMA with a single node.	Customer Service representative must
		verify
	The system must be quiesced before the concurrent GX adapter cold repair begins. This means that all critical application must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer
	Ensure that the replacement parts are the same type as the parts that are being removed.	Service representative
¹ Hardware in a node can fail at any time, then a node can become deconfigured during system IPL to isolate the failure. The failure and deconfiguration event can occur after the hardware upgrade package has arrived at the customer site and the service representative has been dispatched. The service representative must ask the customer		

Planning checklist for concurrent node repair (9119-FHA)

if the system has any outstanding deferred repairs.

Use this checklist as a guide to complete the planning requirements for a concurrent node repair for the 9119-FHA. The checklist contains a list of planning tasks that must be completed before you do a concurrent node repair, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570

Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term *service representative* refers to your IBM service representative.

Table 9. Concurrent node repair checklist for the 9119-FHA

Con	current node repair tasks	Responsibility
	Verify that the system firmware level EH340_061 (Service Pack 3.4.1), or later, is activated on the system. For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	Customer Service representative must verify
	Verify that the HMC level V7R3.4.0 (Service Pack 1), or later, is installed on the HMC that manages the system. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify
	If system firmware Ex340_061 (service pack 3.4.1) or Ex340_075 (service pack 3.4.2) is installed on the system, complete the following steps on the HMC.	Customer Service representative must
	 Go to Systems Management - Servers - <i>target server</i>. From the list of partitions that are running on the target server, select the first partition name in the list. 	verify
	3. In the Partition Properties panel, select Hardware → Processors .	
	• If the partition uses shared processors, no action is required.	
	 If the partition has dedicated processors, select Allow when partition is inactive under Processor Sharing before you perform a concurrent maintenance operation. 	
	4. Repeat this procedure for all partitions that are defined on the target system before you begin the concurrent maintenance operation.	
	Verify that the logical memory block size is not set to 16 MB if the server firmware is EH340_061.	Customer
	 For information about determining firmware levels using the hardware management console, see Using the HMC to view existing firmware levels. 	Service representative must verify
	• For information about determining the logical memory block size, see Changing the logical memory block size. The Logical Memory Block Size panel shows the current setting.	
_	If the firmware level is EH340_061 and the logical memory block size is 16 MB, the procedure must be performed with the power off.	
	Verify the network connections between the system's service processors and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information about testing the network connections, see Testing the connection between the HMC and the managed system.	Customer Service representative must verify
	Verify that more than one node is present in the system. Concurrent node repair cannot be done if the system has only one node.	Customer Service representative must verify

Table 9. Concurrent node repair checklist for the 9119-FHA (continued)

Con	current node repair tasks	Responsibility
	 Verify that the following program temporary fixes (PTFs) are activated, if IBM i partitions are running on the system. For IBM i 5.4, the MF45678 PTF is required. For IBM i 6.1, the MF45581 PTF is required. If the PTFs are not activated, the IBM i partitions must be powered off before the concurrent maintenance operation can begin 	Customer Service representative must verify
	Run the Display Service Effect utility on the HMC to determine if the system is prepared for a concurrent node repair. For more information about the utility, see "Displaying the effect of system node evacuation" on page 27. When using this utility on a node that is deactivated (cold repair), the utility will report no errors. Run the Display Service Effect utility on the HMC to determine if the system is prepared for a concurrent hot node repair.	Customer Service representative must verify
_	Enable service processor redundancy.	Service representative
	The system must be quiesced before the concurrent node repair operation begins. This means that all critical applications must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer
	Ensure that the replacement parts are the same type as the parts that are being removed.	Service representative
	Ensure that existing hardware in the node is not moved. Existing node hardware must not be moved during a concurrent node repair.	Service representative

Planning checklist for concurrent GX adapter cold repair (9119-FHA)

Use this checklist as a guide to complete the planning requirements for a concurrent GX adapter cold repair for the 9119-FHA. The checklist contains a list of planning tasks that must be completed before you do a concurrent GX adapter cold repair, and it also lists who is responsible for each task.

A *concurrent cold repair* is a repair in which the hardware being repaired is electrically isolated from the running system. The hardware that is isolated has no resources that are being used by the system when the repair is initiated.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term *service representative* refers to your IBM service representative.

Table 10. Concurrent GX adapter cold repair checklist for the 9119-FHA

Con	current GX adapter cold repair tasks	Responsibility
	Verify that the system firmware level EH340_061 (Service Pack 3.4.1), or later, is activated on the system. All deferred fixes must be activated before the concurrent GX adapter cold repair begins. To verify that the managed system has IPLed the level of system firmware that must be installed and activated, use the View System Information function on the Hardware Management Console (HMC) (see View system information). On the View System Information screen:	Customer Service representative must verify
	 If the engineering change (EC) number on the left in the Managed System Primary row is 01EH340, then the Platform IPL level must be 61 (Service Pack 3.4.1) or later. 	
	If there is a level present in the Unactivated Deferred Level column, it is an indication that deferred firmware fixes are available that have not been installed. This level must be activated before the concurrent GX adapter add operation begins. This requires restarting the system to install the deferred fixes. Use the Change Licensed Internal Code for the current release function on the HMC to activate the correct level of system firmware. For more information see Change Licensed Internal Code for the current release.	
	For information about determining firmware levels using the Hardware Management Console (HMC), see Using the HMC to view the existing firmware levels.	
	Verify that the HMC level V7R3.4.0 (Service Pack 1), or later, is installed on the HMC that manages the system. If there are two HMCs attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify
	If system firmware Ex340_061 (service pack 3.4.1) or Ex340_075 (service pack 3.4.2) is installed on the system, complete the following steps on the HMC.	Customer
	1. Go to Systems Management → Servers → target server.	Service representative must
	2. From the list of partitions that are running on the target server, select the first partition name in the list.	verify
	3. In the Partition Properties panel, select Hardware → Processors .	
	• If the partition uses shared processors, no action is required.	
	 If the partition has dedicated processors, select Allow when partition is inactive under Processor Sharing before you perform a concurrent maintenance operation. 	
	4. Repeat this procedure for all partitions that are defined on the target system before you begin the concurrent maintenance operation.	
	Verify the network connections between the system's service processors and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information about testing the network connections, see Testing the connection between the HMC and the managed system.	Customer Service representative must verify
	Enable service processor redundancy.	Service representative
	The system must be quiesced before the concurrent GX adapter cold repair operation begins. This means that all critical application must be halted or moved to another system before the operation begins. Noncritical applications can be left running. The partitions may be left running at the operating system command prompt.	Customer
	Ensure that the replacement parts are the same type as the parts that are being removed.	Service representative

Planning checklist for concurrent system controller repair (9119-FHA)

Use this checklist as a guide to complete the planning requirements for a concurrent system controller repair on a 9119-FHA system. The checklist contains a list of planning tasks that must be completed before you concurrently repair a system controller, and it also lists who is responsible for each task.

For guidelines that apply to all concurrent maintenance operations, see "Guidelines for CEC concurrent maintenance operations" on page 1. These general guidelines must be adhered to as well as the items in the following checklist. For additional planning considerations, see the IBM Power 595 and Power 570 Servers CEC Concurrent Maintenance whitepaper (http://www.ibm.com/common/ssi/fcgi-bin/ssialias?infotype=SA&subtype=WH&appname=STGE_PO_PO_USEN&htmlfid=POW03023USEN &attachment=POW03023USEN.PDF).

The term *service representative* refers to your IBM service representative.

Table 11. Concurrent system controller repair checklist (9119-FHA)

Con	current system controller repair tasks	Responsibility
	Verify that the system firmware level EM350_xxx, or later, is activated on the system. To verify that the IPL on the managed system has installed and activated the correct level of system firmware, use the View System Information function on the Hardware Management Console (HMC) (see View system information). On the View System Information screen, ensure that the following requirement is met.	Customer Service representative must verify, if present
	• The engineering change (EC) on the left in the Managed System Primary row must be 01EH350.	
	For information about determining firmware levels by using the HMC, see Using the HMC to view the existing firmware levels.	
	Verify that the HMC level V7R3.5.0, or later, is installed on the HMC that manages the system. If two HMCs are attached to the system, both HMCs must be at the same level. If not, the HMC that is not at the required level must be correctly disconnected from the managed system and powered off. For information about verifying the HMC code level and release, see Determining your HMC code level and release. For information about disconnecting an HMC from a managed system, see Removing HMC connection data.	Customer Service representative must verify, if present
	Verify the network connections between the system's primary system controller and the HMC before the service representative arrives by using the service processor status function on the HMC. For more information about testing the network connections, see Testing the connection between the HMC and the managed system.	Customer Service representative must verify
	Verify that service processor redundancy is enabled. If redundancy is disabled prior to the concurrent repair operation, the user is notified and has the option to proceed with the system controller repair. Redundancy is enabled automatically during the concurrent repair operation.	Customer Service representative must verify
	The failing system controller must be replaced with a new spare part from field stock that is labeled "Do Not Reseal".	Service representative must verify

Table 11. Concurrent system controller repair checklist (9119-FHA) (continued)

Con	current system controller repair tasks	Responsibility
	Ensure that potential impacts to system operation are kept to a minimum.	Customer
	Changing the hardware configuration or the operational state of equipment might cause unforeseen impacts to system status or to applications that are running. To minimize the potential impacts to system operation, consider the following proactive measures when you perform a concurrent maintenance operation.	
	 Schedule concurrent maintenance upgrades or repairs during nonpeak operational hours. 	
	• Move business-critical applications to another server using the Live Partition Mobility feature of the PowerVM [™] Enterprise Edition offering, or quiesce the applications.	
	 Back up critical application and system state information. 	
	Checkpoint databases.	
	Ensure that the replacement parts are the same type as the parts that are being removed.	Service representative

System firmware and HMC levels for concurrent maintenance operations

Minimum system firmware and Hardware Management Console (HMC) levels are required for concurrent maintenance additions, removals, and repairs on Power 570 and Power 595 systems.

Power 570 system firmware and HMC levels

This information provides the minimum and recommended system firmware and HMC levels for concurrent additions, drawer additions and removal, and repairs for Power 570 systems.

Notes:

- 1. FC is the abbreviation for feature code.
- 2. Standard is a feature code
- 3. Package is a bundle of feature codes of the same type
- 4. CBU (capacity back-up) indicates that the feature code includes conditions on usage as well as hardware.

Table 12. System firmware and HMC levels for concurrent additions, and drawer additions and removals for Power 570

Function	Minimum system firmware and HMC level	Recommended system firmware and HMC level
Node add:	EM340_061 or later	EM340_132 or later
Supported FCs for the 9117-MMA	V7R3.4.0 + MH01163	V7R3.5.0 + MH01238 +
5683 (updated IBM)	or	MH01259
Supported FCs for the 9406-MMA	EM350_038 or later	or
Chassis: 5626 (IBM), 5801	V7R3.5.0 + MH01195	EM350_108 or later
		V7R3.5.0 + MH01238 +
		MH01259

Function	Minimum system firmware and HMC level	Recommended system firmware and HMC level
Memory addition or upgrade:	EM340_061 or later	EM340_132 or later
Supported FCs for the 9117-MMA:	V7R3.4.0 + MH01163	V7R3.5.0 + MH01238 +
Standard: 7893, 7894, 4495, 4496,	or	MH01259
5690, 5692, 5693, 5694, 5695, 5696	EM350_038 or later	or
Package: 8129	V7R3.5.0 + MH01195	EM350_108 or later
Supported FCs for the 9406-MMA:		V7R3.5.0 + MH01238 +
Standard: 4495, 5692, 5693, 5694, 5695, 5696		MH01259
GX adapter addition:	EM340_061 or later	EM340_132 or later
Supported FCs: 1800, 1802	V7R3.4.0 + MH01163	V7R3.5.0 + MH01238 +
	or	MH01259
	EM350_038 or later	or
	V7R3.5.0 + MH01195	EM350_108 or later
		V7R3.5.0 + MH01238 +
		MH01259
19-inch I/O drawer addition (This operation is supported on all 19-inch I/O expansion units)	All levels	All levels
Supported FCs: 5802, 5790, 0595, 0588, 5796, 7311-D11, 7311-D20, 7314-G30		
These FCs are supported for migration: 5094, 5294, 5095, 5096, 5296, 5088, 0588		
19-inch I/O drawer removal.	EM350_038 or later	EM350_108 or later
Supported FCs: This operation is supported on 12X-attached I/O expansion drawers, feature codes 5796, 5802, and 5877, and model 7314-G30	V7R3.5.0 + MH01195	V7R3.5.0 + MH01238 + MH01259

Table 12. System firmware and HMC levels for concurrent additions, and drawer additions and removals for Power570 (continued)

Function	Minimum system firmware and HMC level	Recommended system firmware and HMC level
Hot node repair	EM340_061 or later	EM340_132 or later
	V7R3.4.0 + MH01163	V7R3.5.0 + MH01238 +
	or	MH01259
	EM350_038 or later	or
	V7R3.5.0 + MH01195	EM350_108 or later
		V7R3.5.0 + MH01238 +
		MH01259
Cold node repair	EM340_061 or later	EM340_132 or later
	V7R3.4.0 + MH01163	V7R3.5.0 + MH01238 +
	or	MH01259
	EM350_038 or later	or
	V7R3.5.0 + MH01195	EM350_108 or later
		V7R3.5.0 + MH01238 +
		MH01259
Cold GX adapter repair	EM340_061 or later	EM340_132 or later
	V7R3.4.0 + MH01163	V7R3.5.0 + MH01238 +
	or	MH01259
	EM350_038 or later	or
	V7R3.5.0 + MH01195	EM350_108 or later
		V7R3.5.0 + MH01238 +
		MH01259
19-inch CEC drawer power supply and fan	All levels	All levels
19-inch I/O drawer repair (This operation is supported on all 19-inch I/O expansion units)	All levels	All levels
Operator (control) panel replacement	All levels	All levels
PCI adapter replacement	All levels	All levels

Table 13. System firmware and HMC levels for concurrent repairs for Power 570

Power 595 system firmware and HMC levels

This information provides the minimum and recommended system firmware and HMC levels for concurrent additions, drawer additions and removals, and repairs for Power 595 systems.

Notes:

- 1. FC is the abbreviation for feature code.
- 2. Standard is a feature code

- 3. Package is a bundle of feature codes of the same type
- 4. CBU (capacity back-up) indicates that the feature code includes conditions on usage as well as hardware.

Function	Minimum system firmware and HMC level	Recommended system firmware and HMC level
Node add:	EH340_122 or later	EH340_122 or later
Supported FCs:	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
Standard: 4694, 4695, 4705	MH01217	MH01217
CBU: 7569, 7571, 7556	or	or
	EM350_049 or later	EM350_049 or later
	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
	MH01217	MH01217
Memory addition or upgrade	EH340_122 or later	EH340_122 or later
Supported FCs:	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
Standard: 5693, 5694, 5695, 5696, 5697	MH01217	MH01217
Package: 8201, 8202, 8203, 8204, 8205	or	or
	EM350_049 or later	EM350_049 or later
	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
	MH01217	MH01217
GX adapter addition	EH340_122 or later	EH340_122 or later
Supported FCs: 1814, 1816	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
	MH01217	MH01217
	or	or
	EM350_049 or later	EM350_049 or later
	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
	MH01217	MH01217
24-inch I/O drawer addition (This	EH340_122 or later	EH340_122 or later
I/O expansion units.)	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
Supported FCs: 5791, 5794, 5798,	MH01217	MH01217
5797, 5803, 5873	or	or
These FCs are supported for migration from a p5 system: 5807,	EM350_049 or later	EM350_049 or later
5808, 5809	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
	MH01217	MH01217

Table 14. System firmware and HMC levels for additions and drawer removal for Power 595

Function	Minimum system firmware and HMC level	Recommended system firmware and HMC level
24-inch I/O drawer removal	EH340_122 or later	EH340_122 or later
This operation is supported on $12X$ attached L/O expansion drawers	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
Supported ECs: 5707 5708 5803 and	MH01217	MH01217
5873	or	or
	EM350_049 or later	EM350_049 or later
	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
	MH01217	MH01217
Bulk power	EH340_122 or later	EH340_122 or later
Supported FCs: 6333, 6334	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
	MH01217	MH01217
	or	or
	EM350_049 or later	EM350_049 or later
	V7R3.5.0 + MH01212 +	V7R3.5.0 + MH01212 +
	MH01217	MH01217

Table 14. System firmware and HMC levels for additions and drawer removal for Power 595 (continued)

Table 15.	System	firmware	and	НМС	levels	for	concurrent	repairs	for	Power	595
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Function	Minimum system firmware and HMC level	Recommended system firmware and HMC level
Hot node repair	EH340_061 or later	EH340_122 or later
	V7R3.4.0 + MH01163	V7R3.5.0 + MH01212 +
	or	MH01217
	EM350_038 or later	or
	V7R3.5.0 + MH01195	EM350_049 or later
	Limitations exist and can be reviewed	V7R3.5.0 + MH01212 +
	by contacting IBM Support.	MH01217
Cold node repair	EH340_061 or later	EH340_122 or later
	V7R3.4.0 + MH01163	V7R3.5.0 + MH01212 +
	or	MH01217
	EM350_038 or later	or
	V7R3.5.0 + MH01195	EM350_049 or later
	Limitations exist and can be reviewed	V7R3.5.0 + MH01212 +
by contacting IBM Support.		MH01217

Function	Minimum system firmware and HMC level	Recommended system firmware and HMC level
Cold GX adapter repair	EH340_061 or later	EH340_122 or later
	V7R3.4.0 + MH01163	V7R3.5.0 + MH01212 +
	or	MH01217
	EM350_038 or later	or
	V7R3.5.0 + MH01195	EM350_049 or later
	Limitations exist and can be reviewed	V7R3.5.0 + MH01212 +
	by contacting IBM Support.	MH01217
System controller repair	EH350_038 or later	EM350_049 or later
	V7R3.5.0 + MH01195	V7R3.5.0 + MH01212 +
		MH01217
24-inch I/O drawer repair (This	All levels	All levels
I/O expansion units.	Limitations exist for FCs 5803 and	Limitations exist for FCs 5803 and
	5873, and can be reviewed by	5873, and can be reviewed by
	contacting IBM Support.	contacting IBM Support.
Bulk power	EH340_061 or later	EH340_122 or later
	V7R3.4.0 + MH01163	V7R3.5.0 + MH01212 +
	or	MH01217
	EM350_038 or later	or
	V7R3.5.0 + MH01195	EM350_049 or later
		V7R3.5.0 + MH01212 +
		MH01217
PCI adapter replacement	All levels	All levels

Table 15. System firmware and HMC levels for concurrent repairs for Power 595 (continued)

Displaying the effect of system node evacuation

You can display the effect of service procedures that require the evacuation of a system unit node. A system node is a processor book in a 9119-FHA, or a drawer in a 9117-MMA or 9406-MMA.

Only use this procedure when you are directed by an authorized service provider to prepare a system for a service procedure that requires the evacuation of resources in a system node. The Display Service Effects utility is also automatically run as a part of any service procedure requiring the evacuation of a system node.

Node evacuation is a process that is required during a hot node repair or a memory upgrade. During the node evacuation process, the Power Hypervisor is used to complete the following tasks.

- Move the contents of the memory in the target node to the memory in the other nodes of the system.
- Move the programs running on dedicated processors assigned to the partitions, and the programs running on processors assigned to the shared processor pool, from the target node to other nodes on the system.

• Lock all the I/O slots that are attached to the target node to prevent the slots from being used during the repair or upgrade.

The system must be managed by a Hardware Management Console (HMC) to use this procedure. This procedure is valid for the 9117-MMA, 9119-FHA, and 9406-MMA systems with firmware level EM340 (9117-MMA and 9406-MMA) or EH340 (9119-FHA), or later.

To display the service effect for a repair procedure for a system node, complete the following steps:

- 1. In the navigation pane, select **Systems Management** \rightarrow **Servers**.
- 2. In the work pane, select the server name on which you are working.
- 3. In the tasks area, select Serviceability → Hardware → Power On/Off Unit.
- 4. Select the Managed System in the Power On/Off Unit utility.
- 5. Select the base location code that contains the field-replaceable unit (FRU) to be serviced.
- 6. Click Advanced.
- 7. Select the Display Service Effect and click OK.
- 8. Select Yes when prompted to continue with the Advanced Power Control command.

The Display Service Effect utility displays a message indicating why a node evacuation of the selected node is not allowed, the Node Evacuation Summary Status, or it will exit without an error indicating that the node is already prepared for the repair operation.

The Node Evacuation Summary Status displays a summary of any conditions that must be corrected to start the node evacuation procedure as part of a concurrent repair or upgrade. Use the four buttons across the top of the utility (**Platform**, **Memory**, **Processors**, and **Partitions**) to display details on any error or information conditions. All error conditions must be corrected prior to the evacuation of the selected node as part of a concurrent repair or upgrade procedure.

Note: The Proceed button on this utility is not active when the utility is launched from the Power On/Off Unit interface as described here. When an IBM service provider initiates a service procedure to repair or upgrade the system, this utility is displayed with the Proceed button active.

- **9**. Click **Recheck** to re-evaluate the systems readiness for node evacuation without relaunching the utility.
- 10. Click Cancel to exit the Display Service Effect utility.
- 11. When all error conditions are corrected, an IBM service provider can proceed with the repair or upgrade procedure.

Common messages for displaying service effect

The following are some of the common error conditions and information messages that are displayed in the Display Service Effect utility for node evacuation. Each of the errors or information messages displayed in this utility has additional details available to describe the condition. If you are unable to resolve the error messages, the system node evacuation is not allowed to continue. Contact your authorized service provider for assistance.

Message type	Common error condition or information message	Description
Processor message	Insufficient available processors	This message indicates that the remaining nodes do not have enough processors to support the currently active logical partitions on the system. Use the Processors button to display information about this error condition and the amount of processing resources that must be made available to proceed with the node evacuation.
		Processing units can be made available in several ways, such as removing reserved processing units from shared processor pools, dynamically removing processing units from active partitions, and powering off partitions. See Removing processor resources dynamically using the Hardware Management Console.
		Following the completion of the service procedure, the processing resources are not automatically returned to the logical partitions. You can use dynamic logical partitioning to return the processing resources to the logical partitions after the completion of the service procedure.
Memory message	Insufficient available memory	This message indicates that the remaining nodes do not have enough memory to support the currently active logical partitions on the system. Use the Memory button to display information about this error condition and the amount of memory resources that must be made available to proceed with the node evacuation.
		Partitions can be deactivated or dynamic logical partitioning can be used to decrease the memory resources used by active logical partitions. See Removing memory dynamically using the Hardware Management Console.
		Following the completion of the service procedure, the memory resources are not automatically returned to the logical partitions. You can use dynamic logical partitioning to return the memory resources to the logical partitions after the completion of the service procedure.

Table 16. Common error conditions and information messages

Message type	Common error condition or information message	Description
Platform messages	Unit must be varied off	This message is an informational message that indicates a system unit or expansion unit that will be varied off during the service procedure. Use the Platform button to display more details about this informational message. Informational messages within the Display Service Effect utility provide additional information about how the system is affected by the node evacuation, but no specific action is required to proceed with the service procedure. Any resources in this node that are in use by logical partitions are identified by unique errors or informational messages.
	IOP must be powered off	On systems running IBM i partitions, this messages indicates that an I/O processor (IOP) is assigned to an active logical partition. Use the Platform button to display the dynamic reconfiguration connected (DRC) index and partition ID of the logical partition that owns the IOP. The IOP must be powered off, or unconfigured, or the logical partition must be powered off. The HMC command lshwres is used to display additional details for the DRC index. For more information, see the lshwres command.

Table 16. Common error conditions and information messages (continued)

Message type	Common error condition or information message	Description
Partition messages	In-use I/O resource	This message indicates that there is an I/O resource that is in use by an active IBM i logical partition that will be affected by the node evacuation procedure. Use the Partitions button to display information about the resources in use. This information includes details about what must be done to correct the errors. For IBM i resources that are in use, the system does not allow the targeted system node to be evacuated unless all configuration descriptions that use resources in the target system unit node are varied off. This operation is done by using the Vary Configuration vrycfg command. If configuration descriptions that use resources in the system unit node cannot be varied off, the procedure must be delayed until they can be varied off or the logical partitions that have these configuration descriptions must be powered off. For more information, see the Vary Configuration (VRYCFG) command.
	Critical disk resource	The critical disk resources message is an error message that indicates that disk units that are in use by an active IBM i partition will be affected by the service action. Use the Partitions button to display details about these disk units and logical partitions that are affected. The logical partitions indicated in the detailed information must be powered down so that the node evacuation can proceed.
	RPA partition error (RPA Return Code of 1)	This message indicates that an I/O resource is in use by an active AIX [®] or Linux logical partition that will be affected by the node evacuation procedure. The HMC uses resource monitoring and control (RMC) flows to query the use of logical partition. RMC must be active on a logical partition for these queries to succeed. An error code of 1, in response to this query command, indicates that an I/O resource must be unconfigured before the node evacuation proceeds. Use the Partitions button to display information about resources in use. This information includes details about what must be done to correct the errors. For this return code, the targeted system node cannot be evacuated unless the resources are unconfigured. This operation is done by using the rmdev command. If
		logical devices that use resources in the system node cannot be unconfigured, the procedure must be delayed until they can be unconfigured or the logical partitions that own the resources must be powered off. For more information, see the AIX Remove device (rmdev) command.

Table 16	. Common	error	conditions	and	information	messages	(continued)	
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Partition messages	RPA partition error (RPA Return Code of 6)	This message indicates that an I/O resource that is in use by an active Linux logical partition will be impacted by the node evacuation procedure. The Hardware Management Console (HMC) uses RMC flows to query the use of logical partition resources. RMC must be active on a logical partition for these queries to succeed. An error code of 6, in response to this query command, is used to identify I/O resources in use by a Linux logical
		information about the resources in use. This information includes details about what must be done to correct the errors.
		The HMC allows the targeted node to be evacuated even if logical device resources that use resources in the target node remain configured for a Linux logical partition. The procedure continues even if the Linux logical partition might be affected by the removal of resources from the partition as a part of the service action. This general policy of few restrictions during concurrent maintenance of resources owned by Linux logical partitions is consistent with the general Linux operating system expectations.
	RPA partition error (RMC return code 1021)	This error message indicates that the Resource Monitoring and Control (RMC) connection cannot be established to one of the logical partitions. Use the Partitions button to display more details for this error. The concurrent maintenance procedure cannot be done unless the RMC configuration is corrected or the logical partition identified in the detailed error information is powered down. You can verify the RMC connection between the partition and the Hardware Management Console (HMC) using the Verifying RMC connections for the mobile partition procedure. To learn more about configuring and using RMC, see Understanding RMC and resource managers in the RCST Administration Guide.
	RPA partition error (RMC return code 1022)	This error message indicates that the RMC connection to one of the logical partitions was lost. Use the Partitions button to display more details for this error. The concurrent maintenance procedure cannot be done unless the RMC configuration is corrected or the logical partition identified in the detailed error information is powered down. You can verify the RMC connection between the partition and the Hardware Management Console (HMC) using the Verifying RMC connections for the mobile partition procedure. To learn more about configuring and using RMC, see Understanding RMC and resource managers in the RCST Administration Guide.

Partition not node evacuation capable	This error message indicates that an IBM i partition is not capable of supporting the node evacuation function. Use the Partitions button to display the name of the partition that does not support node evacuation. The partition must be shutdown or upgraded to complete the procedure.
	IBM i releases V5R4M5 and V6R1M0 support the node evacuation process when the following enablement PTFs are installed.
	 V5R4M5 - MF45678 V6R1M0 - MF45581

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This Class A digital apparatus complies with Canadian ICES-003.

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European Community contact: IBM Technical Regulations Pascalstr. 100, Stuttgart, Germany 70569 Tele: 0049 (0)711 785 1176 Fax: 0049 (0)711 785 1283 E-mail: tjahn@de.ibm.com

Warning: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

VCCI Statement - Japan

この装置は、クラスA 情報技術装置です。この装置を家庭環境で使用すると電波妨害 を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求され ることがあります。 VCCI-A

The following is a summary of the VCCI Japanese statement in the box above:

This is a Class A product based on the standard of the VCCI Council. If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.

Japanese Electronics and Information Technology Industries Association (JEITA) Confirmed Harmonics Guideline (products less than or equal to 20 A per phase)

高調波ガイドライン適合品

Japanese Electronics and Information Technology Industries Association (JEITA) Confirmed Harmonics Guideline with Modifications (products greater than 20 A per phase)

高調波ガイドライン準用品

Electromagnetic Interference (EMI) Statement - People's Republic of China

声 明 此为A级产品,在生活环境中、 该产品可能会造成无线电干扰。 在这种情况下,可能需要用户对其 干扰采取切实可行的措施。

Declaration: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may need to perform practical action.

Electromagnetic Interference (EMI) Statement - Taiwan

警告使用者: 這是甲類的資訊產品,在 居住的環境中使用時,可 能會造成射頻干擾,在這 種情況下,使用者會被要 求採取某些適當的對策。

The following is a summary of the EMI Taiwan statement above.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user will be required to take adequate measures.

IBM Taiwan Contact Information:

台灣IBM產品服務聯絡方式: 台灣國際商業機器股份有限公司 台北市松仁路7號3樓 電話:0800-016-888

Electromagnetic Interference (EMI) Statement - Korea



Please note that this equipment has obtained EMC registration for commercial use. In the event that it has been mistakenly sold or purchased, please exchange it for equipment certified for home use.

Germany Compliance Statement

Deutschsprachiger EU Hinweis: Hinweis für Geräte der Klasse A EU-Richtlinie zur Elektromagnetischen Verträglichkeit

Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2004/108/EG zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022 Klasse A ein.

Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung der IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung der IBM gesteckt/eingebaut werden.

EN 55022 Klasse A Geräte müssen mit folgendem Warnhinweis versehen werden: "Warnung: Dieses ist eine Einrichtung der Klasse A. Diese Einrichtung kann im Wohnbereich Funk-Störungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen zu ergreifen und dafür aufzukommen."

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

Dieses Produkt entspricht dem "Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG)". Dies ist die Umsetzung der EU-Richtlinie 2004/108/EG in der Bundesrepublik Deutschland.

Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC EG Richtlinie 2004/108/EG) für Geräte der Klasse A.

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach des EMVG ist die IBM Deutschland GmbH, 70548 Stuttgart.

Generelle Informationen:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024 und EN 55022 Klasse A.

Electromagnetic Interference (EMI) Statement - Russia

ВНИМАНИЕ! Настоящее изделие относится к классу А. В жилых помещениях оно может создавать радиопомехи, для снижения которых необходимы дополнительные меры

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