AS/400e

Logical Partitions: Managing

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Part 1. Managing logical partitions

When you create logical partitions, you essentially create two or more smaller logical AS/400 systems. Each logical partition has its own processors, input/output (I/O) devices, Licensed Internal Code, operating system, and optional software applications.

For these reasons most of the tasks you perform on each individual logical partition are the same as on a system without logical partitions. In other words, you should approach each logical partition as an independent system.

The following list contains the information and tasks you will need to manage a system with logical partitions:

- Control your logical partitions by using dedicated service tools (DST) or system service tools (SST).
- Display and print logical partition information.
- Restart and power down your partitioned system (initial program loads).
- Change processing resources to improve system performance.
- Change the configuration of a logical partition.
- Manage security on your system.
- Install program temporary fixes to keep your software current.

For more information on logical partitions, go to Learning about Logical Partitions. Go to the Backup and Recovery pages for information on backing up your system.

Refer to the book, AS/400 Basic System Operation, Administration, and Problem Handling  for more information about starting and managing your system.

Chapter 1. Controlling logical partitions with DST and SST

On a system without logical partitions, you can use the control panel to perform many tasks. However, for systems with logical partitions, secondary partitions do not have physical control panels. To control your logical partitions you can use menu options in dedicated service tools (DST) and system service tools (SST). These menu options act as a virtual control panel.

Security considerations

You can restart and reconfigure logical partitions from the primary partition by using DST. Therefore, an unqualified person with access to DST could unintentionally cause severe damage to your system. For this reason you should limit the number of people who have the password to DST and who have access to the control panel.

DST versus SST

You control logical partitions essentially the same way in DST and SST. You can perform some logical partition configuration actions only in DST. However, since SST is easier to access than DST, you should use SST whenever possible.

To use SST or DST go to Starting SST and DST.

This table describes the capabilities that are available to logical partitions from the *Work with system partitions* display (option 11, DST), or (option 5, SST).

	Primary Partition	Secondary Partition
DST	Display all logical partition information Change IPL status on primary and secondary logical partitions Change operating mode on primary and secondary logical partitions Perform main store dumps Power on or off primary and secondary logical partitions Change processing and I/O configuration of primary and secondary logical partitions Perform recovery functions for secondary partitions Create and delete secondary partitions	Display its own logical partition information Perform limited recovery functions on itself When the secondary partition is not in secure mode it can: • Change IPL status on itself • Change operating mode on itself • Perform main store dumps on itself • Power itself off
SST	Display all logical partition information Change I/O configuration of primary and secondary partitions When the system is not in secure mode it can: • Change operating mode • Change logical partition status • Perform main store dumps • Power on and off secondary partitions • Force DST on the primary partition or secondary partitions	Display its own logical partition information When the secondary partition is not in secure mode it can: • Change IPL status on itself • Change operating mode on itself • Perform main store dumps for itself • Power itself off. • Force DST on itself

Starting SST and DST for logical partitions

Starting SST on the primary partition or a secondary partition

You can start system service tools (SST) by typing the start system service tools (STRSST) command and pressing Enter at a command line. You can start SST on any primary or secondary partition workstation. You must have proper authority to use this command.

Starting DST on the primary partition

When you start dedicated service tools (DST), make sure that the primary partition console is at a sign on display to prevent jobs from ending abnormally. As an alternative, you can perform the following steps on the logical partition. You only need to perform these steps once since they system maintains changes across initial program loads (IPLs):

1. At a command line, type the Work with System Value (WRKSYSVAL) command.
2. Set the QDEVRCYACN system value to *ENDJOBNOLIST or *ENDJOB.
3. Set the QDSCJOBITV system value to 5 minutes.

   For more information on system values, see the System Values chapter of OS/400 Work Management.

To start DST on the primary partition use the system control panel to put the system in manual mode and select option 21. The system will prompt you for the DST user ID and password.

Starting DST on a secondary partition from DST on the primary partition

Follow these steps to start dedicated service tools (DST) on a secondary partition:

1. Start DST on the primary partition.
2. Select option 11 (Work with system partitions).
3. Select option 2 (Work with partition status).
4. Use your cursor to select the secondary partition for which you want DST.
5. Select option 10 (Mode manual) if the secondary partition is not already in manual mode.
6. Press F23 for more options.
7. Select option 21 (Force Dedicated Service Tools). The secondary partition console will experience a device I/O error and end abnormally. This is normal.
8. The DST display will appear on the workstation that is acting as console for the secondary partition. Sign on to DST.
9. Before you leave DST, set the secondary partition back to normal mode if you want the next IPL to be unattended.

Forcing DST from SST

You can force DST to start from SST if the logical partition is not in secure mode. On the primary partition, you can force DST for itself or any of the secondary partitions. On a secondary partition you can force DST to start on itself.

When you force DST from the system control panel of the Work with Partition Status display, you cancel the current job on the partition console.

Note: If you perform an IPL on the logical partition before you exit DST, the next OS/400 IPL will be abnormal. To avoid an abnormal OS/400 IPL, exit DST before you perform the IPL. Then sign on to that logical partition and perform the IPL.

These steps affect how they system stops active jobs when you start DST, including the system partition's service function. You may need to wait five minutes before starting service functions in DST that were active in SST when you entered option 21.

To force DST from SST follow these steps:

1. Use the STRSST command to start SST.
2. Select option 5 (Work with system partitions).
3. Select option 2 (Work with partition status).
4. Use the cursor to select the logical partition on which you want DST.
5. If the partition is not in manual mode, select option 10 (Mode manual).
6. Select option 21 (Force DST). If you are forcing DST from the logical partition workstation where you want DST, the workstation will experience a device I/O error and end abnormally. This is normal.
7. Sign on to DST.
8. Before you exit DST, set the logical partition back to normal mode if you want the next IPL to be unattended.

Chapter 2. Displaying and printing logical partition information

Use the Work with System Partitions display to find out whether or not your system has logical partitions, which partition you are on, and how many partitions your system has. To start the Work with System Partitions display, follow the procedure below to step two.

For more detailed information about your logical partitions, use the Display Partition Information display. If you are at a secondary partition workstation, you can only find information about that logical partition. To find information about the entire system, use the primary partition.

Only the Display Partition Information display on the primary partition provides the total system hardware view. If you have changed the configuration of your system, this data may at times be incomplete or obsolete. It can also reflect changes that will take effect on the next system initial program load (IPL).

To have an accurate view of the hardware, ensure that you performed an IPL on all secondary partitions since the last primary partition IPL. Also ensure that the Work with Partition Configuration display does not reflect a need for subsequent IPLs.

When a logical partition needs an IPL, a **<** flag appears in the Work with Partition Configuration display. The **<** appears in the field to the right of the logical partition *Name* field. If the logical partition configuration information reflects hardware no longer present in the system, you should clear non-reporting resources from the logical partition.

You can get a printout of your system configuration by performing the steps in the Printing system configuration page.

You start up the Display partition information display from system service tools (SST) or dedicated service tools (DST). Follow these steps to start up the Display partition information display:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information) and press Enter.

You can perform the following tasks from the Display Partition Information display:

- Display logical partition status.
- Display logical partition processing configuration.
- Display allocated I/O resources.
- Display available I/O resources.
- Display system I/O resources.
- Display logical partition release level.
- Display communication options.
- Display reference code history for secondary partitions.
- Print system configuration.

Displaying logical partition status

Use the Display Partition Status display to find much of the same information about logical partitions as you would on the control panel of a system without logical partitions. If you start this display from the primary partition, you get information about the primary partition and all the secondary partitions. If you start this display from a secondary partition, you get information only for that secondary partition.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST).

To find the Display Partition Status display, follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information) and press Enter.
4. Select option 1 (Display partition status) and press Enter.

Once you arrive at the Display Partition Status display, you can use the function keys that are listed below to display the following information:

- **F1–** This key will bring you to the *Help* display. Go here for a detailed explanation of the fields on this display.
- **F9–** This key toggles between *Exclude reference code detail* and *Include reference code detail*. This option allows you to choose whether or not you can see the details of secondary partition reference codes.
- **F10–** This key brings up the Monitor Partition Status display. This display refreshes automatically as the system updates system reference codes for secondary partitions.
- **F11–** This key brings up the Display Partition Processing Configuration display.

Displaying logical partition processing configuration

You can find out how much main storage, how many processors, and how much interactive performance assigned to each logical partition with the Display Partition Processing Configuration display. If you start this display from the primary partition, you get information about the primary partition and all the secondary partitions. If you start this display from a secondary partition, you get information only for that secondary partition.

You can print the information in this display by pressing F6.

You can use the Display Partition Processing Configuration display from system service tools (SST) or dedicated service tools (DST). To start the Display Partition Configuration display follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information).
4. Select option 2 (Display partition processing configuration).

Displaying more processing information

Once you arrive at the Display Partition Processing Configuration display, you can use the F10 function key to display the following information:

Total Processors

This field shows you:

- The current and pending (updated after the next initial program load) number of processors.
- The minimum and maximum number of processors allowed for each logical partition.

Main Storage Size (MB)

This field shows you the current and pending amount of memory for each logical partition. It also shows you the minimum and maximum amount of memory available for each logical partition. Only current information shows if SST or DST is running in a secondary partition. To find this field,

press F10 (Display main storage information) when the Total Processors field shows on the Display Partition Processing Configuration display.

Interactive Performance Percentage
This field shows you the current and pending amount of interactive performance for each logical partition. It also shows you the minimum and maximum percentage of interactive performance available for each logical partition. Only current information shows if SST or DST is running in a secondary partition. To find this field, press F10 (Display interactive information) when the Main Storage Size (MB) field shows on the Display Partition Processing Configuration display.

Processor Identifiers
This field shows you which processors you assigned to each logical partition. Only current information shows if SST or DST is running in a secondary partition. To find this field, press F10 (Display processor identifiers) when the Interactive Performance Percentage field shows on the Display Partition Processing Configuration display.

Displaying allocated I/O resources for logical partitions

An *allocated I/O resource* is an input/output (I/O) device that is assigned to a logical partition. You allocate I/O resources at the I/O processor (IOP) level. In other words, you assign IOPs and all of their devices to a logical partition.

If you start this display from the primary partition, you get information about the primary partition and all the secondary partitions. If you start this display from a secondary partition, you get information only for that secondary partition.

You can print the information in this display by pressing F6.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST).

To display allocated I/O resources, follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information).
4. Select option 3 (Display allocated I/O resources).

Once you arrive at the Display Allocated I/O Resources display, you can choose to view either one particular logical partition or all logical partitions.

If you have restarted the primary partition, but not the secondary partitions the display will not be up to date. You will only see the last buses and IOPs which reported for the secondary partitions. You will not see IOAs and devices until you start the secondary partitions.

You can choose to view the resources at these levels of detail:

*ALL (everything on the system or allocated to a logical partition).

*BUS (display by system I/O bus).

*IOP (display by IOP and bus).

*IOA (display by I/O adapter (IOA), IOP, and bus).

*DEV (display by device, IOA, IOP, and bus).

Displaying serial and part number and logical address

You can use the F10 function key to toggle between the Serial Number and Part Number fields and the Logical Address field. You can use the F1 function key on your workstation for more information about these fields.

Displaying available I/O resources for logical partitions

An *available input/output (I/O) resource* is an I/O processor (IOP) or a system I/O bus that you can assign to a logical partition. You cannot assign an I/O adapter or a single device (such as a tape drive) to a partition without its IOP. When you assign an IOP to a partition, you assign all of its devices to a logical partition.

| You can print the information in this display by pressing F6.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST).

To display available I/O resources, follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information).
4. Select option 4 (Display available I/O resources).

If you have restarted the primary partition, but not the secondary partitions, the diplay will not be up to day. You will only see the last buses and IOPs which reported for the secondary partitions. You will not see IOAs and devices until you start the secondary partitions.

Once you have arrived at the Display Available I/O Resources display, you can view the resources at these levels of detail:

*ALL (everything on the system or allocated to a logical partition).

*BUS (display by system I/O bus).

*IOP (display by IOP and bus).

*IOA (display by I/O adapter (IOA), IOP, and bus).

*DEV (display by device, IOA, IOP, and bus).

Displaying serial and part number and logical address

You can use the F10 function key to toggle between the Serial Number and Part Number fields and the Logical Address field. You can use the F1 function key on your workstation for more information about these fields.

Displaying system I/O resources for logical partitions

You can display all resources (allocated and available) on the system. This display sorts the resources by address and shows resource status. It also shows the details of its logical partition characteristics.

| You can print the information in this display by pressing F6.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST) on the primary partition.

To display system I/O resources, follow these steps:

1. From the primary partition start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. From the Work With System Partitions menu select option 1 (Display partition information)
4. From the Display Partition Information menu select option 5 (Display system I/O resources).

If you have restarted the primary partition, but not the secondary partitions, the display will not be up to date. You will only see the last buses and IOPs which reported for the secondary partitions. You will not see IOAs and devices until you start the secondary partitions.

Once you have arrived at the Display System I/O Resources display, you can choose to view the resources at these levels of detail:

*ALL (everything on the system or allocated to a logical partition).

*BUS (display by system I/O bus).

*IOP (display by IOP and buses).

*IOA (display by I/O adapter (IOA), IOP, and buses).

*DEV (display by device, IOA, IOP, and bus).

The system remembers your last choice so the default displays the level of detail you last selected.

Displaying more system I/O information

You can use the F10 function key to display this information:

- **Display serial/part numbers-** This view shows the serial and part numbers for the displayed resources on every logical partition.
- **Display logical address-** This view shows the logical address for the displayed resources on every logical partition. For more information on logical address, use the F1 function key on your workstation.
- **Display status/ownership information-** This view shows the hardware status and ownership information.
  - **Hardware status-** This field shows the state of the bus and IOP resources. Valid status values are: *Available, Failed, Unavailable, Unknown,* and *Other*. Use the F1 function key on your workstation for more information on these values.
  - **Ownership information-** This information consists of two fields, *Owning Par ID* and *Ownership Type. Owning Par ID,* shows which logical partition owns which resource. *Ownership Type* shows whether each logical partition owns the resource *Own bus dedicated* or *Own bus shared*.
- **Display using partitions-** This field shows which logical partition uses the resource (with or without ownership).

Displaying logical partition release levels

You can use the Display Partition Release Level display to see which release of the operating system each logical partition is running.

The Delta field indicates the release a secondary partition is running in relation to the primary partition. A positive value indicates a newer secondary operating system; a negative value indicates an older version.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST) on the primary partition. To use the Display Partition Release Level display, follow these steps:

1. On the primary partition, start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information).
4. Select option 6 (Display partition release level).

Once you are in Display Partition Release Level, you can see what version of the operating system each logical partition is running.

Displaying communication options for logical partitions

The Display communications options display shows whether or not you have connected each logical partition to virtual OptiConnect and High Speed Link. This display shows the information below:

- The **Partition Identifier** which is the number the system assigns to the partition.
- The **Name** you gave the partition.
- Whether or not you connected the partition to **Virtual OptiConnect**.
- If you have V4R5 hardware, whether or not you connected the partition to **HS-Connect** (High Speed Link).

To get to the Display communication options display, follow the steps below:

1. On the primary partition, start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information).
4. Select option 7 (Display communications options).

Displaying reference code history for secondary partitions

A reference code indicates a status or an error condition. The system records the reference code history (the last 200 reference codes) for secondary partitions.

You can use the Display Secondary Partition Reference Code History display to view the reference code history for secondary partitions.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST) on the primary partition. To display logical partition reference codes, follow these steps:

1. From the primary partition start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information).
4. Select option 8 (Display secondary partition reference code history).

Once you arrive at the Display Secondary Partition Reference Code History display, you can choose to display the information in a number of ways. At the *Secondary partition(s) to display* field, you can choose to display one secondary partition or all secondary partitions.

At the *Number of reference codes to display* field, you can choose to display any number of reference codes between one and 200. For example, if the display reports 200 reference codes, you could choose to view the last 50 or 150 reference codes.

Printing system configuration for logical partitions

You can perform this procedure from system service tools (SST) or dedicated service tools (DST) on the primary partition. If you print from SST, the system will print the data to a spooled file. When you finish, go to an OS/400 command line and print the spooled files. If you print from DST, you will get the Work with Printers display if you have not selected a DST printer. If this happens, select a printer, then continue with the procedure.

Follow these steps to print the system configuration:

1. From the primary partition start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 1 (Display partition information).
4. For a complete list of all the I/O resources, go to the Display System I/O Resources display. For a list of allocated I/O resources, go to the Display Allocated I/O Resources display.
5. At the *Level of detail to display* field, type *ALL to set the level of detail to ALL.
6. Press F6 to print the system I/O configuration.
7. Select option 1 (132 characters wide) and press Enter to print to a spooled file.
8. Press F12 to return to the Display Partition Information display.
9. Select option 2 (Display partition processing configuration).
10. Press F6 to print the processing configuration.
11. Select option 1 (132 characters wide) and press Enter to print to a spooled file.
12. Return to an OS/400 command line and print these two spooled files.

Chapter 3. Restarting and powering down a system with logical partitions

At times you will need to start (perform an initial program load (IPL)) or power down the entire system or a single partition.

It is important to remember that when you perform an IPL on the primary partition you could perform an IPL on all the secondary partitions. This depends on how you set the *Sys IPL Action* field in the Work with Partition Status display. For more information on starting your secondary partitions with a system IPL, see “Restarting a secondary partition on system IPL” on page 18 and “Holding a secondary partition from restarting on system IPL” on page 19.

If you power down the primary partition, you will also power down any secondary partitions that are running. Unless you power down the secondary partitions before the primary partition, any secondary partitions that are still running will have an abnormal IPL.

Refer to the Starting and Stopping the System chapter of AS/400 Basic System Operation, Administration, and Problem Handling  for more information on abnormal IPLs.

Some the IPL tasks you can perform are as follows:

- Changing a logical partition power schedule.
- Powering down the system.
- Restarting the system.
- Changing operating mode for a logical partition.
- Changing the IPL source for a logical partition.
- Restarting a secondary partition on system IPL.
- Holding a secondary partition from restarting on system IPL.

Changing logical partition power schedule

You can schedule when a secondary partition will power on and power off by changing the IPL Date and Time (QIPLDATTIM) system value. You can change the QIPLDATTIM system value by using the GO Power or Change Power Schedule (CHGPOWRSCD) COMMAND.

At a command line on a secondary partition workstation, use the GO POWER or CHGPWRSCD command to change a secondary partition power schedule.

When you schedule a secondary partition to power on, ensure that it is only during a time when the primary partition is already on. You have to power on the primary partition before you can power on any secondary partitions.

See the What You Need to Know About Your AS/400 System chapter of, AS/400 Basic System Operation, Administration, and Problem Handling  for more information about power schedules.

Powering down a system with logical partitions

Powering down a secondary partition

You can power down a secondary partition by using the OS/400 power down system (PWRDWNSYS) command.

From a command line at a workstation on that secondary partition type PWRDWNSYS OPTION (*CNTRLD) DELAY (600) and press Enter.

If you power down a secondary partition, you will not affect any other logical partitions. This command is the preferred way to power down a secondary partition.

Powering down the primary partition

Before you power down the primary partition, power down all of the secondary partitions. Then, use the PWRDWNSYS command to power down the primary partition.

From a command line at a workstation on the primary partition type PWRDWNSYS OPTION (*CNTRLD) DELAY (600) and press Enter.

If you do not power down the secondary partitions before the primary partition, all of the active secondary partitions will power down abnormally. If the secondary partitions power down abnormally, it may take much longer to power down and to perform an IPL of each secondary partition.

Delayed power off

Use delayed power off (option 7 on the Work with Partition Status display) only when you must power down a logical partition, and the PWRDWNSYS command does not work.

When you use the delayed power off option, the partition waits a predetermined amount of time to power down. This allows the partition time to end jobs and write data to disks. However this command will cause an abnormal initial program load (IPL) of the logical partition if OS/400 is running.

Immediate power off

Use immediate power off (option 8 on the Work with Partition Status display) only when a logical partition cannot power down using PWRDWNSYS or delayed power off.

When you use the immediate power off option from the Work with Partition Status display, the system powers down without any preset delay. This will cause an abnormal IPL of the logical partition and possibly cause loss of data.

To power down using Delayed power off or Immediate power off, follow these steps:

1. From a dedicated service tools (DST) menu, select option 11 (Work with system partitions).
2. Select option 2 (Work with partition status).
3. Use the cursor to select the logical partition you want to power off.
4. Type 7 (Delayed power off) or 8 (Immediate power off).
5. At the confirmation display, press F10 to confirm your choice

Restarting a system with logical partitions

To restart the whole system (perform a power down and an initial program load (IPL)) the secondary partitions must power down with the primary partition. If you are going to restart the primary partition, first power down all of the secondary partitions.

You can restart a secondary partition without affecting the other secondary partitions. If the secondary partition is powered on, you can restart it using PWRDWNSYS OPTION *CNTRLD DELAY (600) RESTART (*YES). You can use this command from a command line at one of its workstations. However, if you have powered off a secondary partition , you can only restart it from the primary partition.

You can perform this procedure from dedicated service tools (DST) or system service tools (SST). To restart a secondary partition, follow these steps:

1. Start DST or SST.
2. From DST select option 11 (Work with system partitions); from SST select option 5 (Work with system partitions).
3. Select option 2 (Work with partition status).
4. At the Work with Partition Status display, follow these steps to start a secondary partition IPL.

Secondary Partition State	**Unattended IPL**	**Attended IPL**
Running with OS/400 active	1. Use the cursor to select the logical partition you want to IPL. 2. Select option 9 (Mode normal). 3. Set the logical partition to the appropriate source (type). 4. At a command line on a workstation attached to that partition, type PWRDWNSYS OPTION (*CNTRLD) DELAY (600) RESTART (*YES) and press Enter.	1. Use the cursor to select the logical partition you want to IPL. 2. Select option 10 (Mode manual). 3. Set the logical partition to appropriate the source (type). 4. At a command line on a workstation attached to that partition, type PWRDWNSYS OPTION (*CNTRLD) DELAY RESTART (*YES) (600) and press Enter.
Running with OS/400 not active	1. Use the cursor to select the logical partition you want to IPL. 2. Select option 9 (Mode normal). 3. Set the logical partition to the appropriate source (type). 4. Enter a 7 (Delayed power off). 5. Use the F5 function key to refresh display; wait until IPL status is off. 6. Enter a 1 (Power on) to perform an IPL.	1. Use the cursor to select the logical partition you want to IPL. 2. Select option 10 (Mode manual). 3. Set the logical partition to the appropriate source (type). 4. Enter a 7 (Delayed power off). 5. Use the F5 function key to refresh display; wait until IPL status is off. 6. Enter a 1 (Power on) to perform an IPL.
Not Running	1. Use the cursor to select the logical partition you want to IPL. 2. Select option 9 (Mode normal). 3. Set the logical partition to the appropriate source (type). 4. Enter a 1 (Power on).	1. Use the cursor to select the logical partition you want to IPL. 2. Select option 10 (Mode manual). 3. Set the logical partition to the appropriate source (type). 4. Enter a 1 (Power on).

See AS/400 Basic System Operation, Administration, and Problem Handling for more information on performing attended or unattended IPLs.

Changing operating mode for a logical partition

The operating mode for logical partitions works just like operating mode on a system without logical partitions. For more information on how operating mode works and why you may need to change it, go to the Information Center page, Operating Mode.

You can perform this procedure from dedicated service tools (DST) or system service tools (SST). To change the operating mode, follow these steps:

1. Go to DST or SST.
2. From DST select option 11 (Work with system partitions); from SST select option 5 (Work with system partitions).

3. Select option 2 (Work with partition status).
4. Use the cursor to select the logical partition you want to change.
5. Select the mode you want to change for the logical partition:
   - 9 (Mode normal)
   - 10 (Mode manual)
   - 11 (Mode auto)
   - 12 (Mode secure)

Changing the IPL source for a logical partition

You can choose a separate initial program load (IPL) source (type) for each logical partition. Each IPL source (A, B, C, or D) on a system with logical partitions works just like it would on a system without logical partitions.

Attention: Only a hardware service representative should use IPL source C. Use only under the direction of your service representative. Severe data loss can occur with improper use of this function.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST). To change IPL source on a logical partition follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions).
3. Select option 2 (Work with partition status).
4. At the Work with Partition Status display, use your cursor to select the logical partition you want to change .
5. Make sure that the logical partition is in manual mode. If not, select 10 (Mode manual) and press Enter to change the logical partition to manual mode.
6. Type the letter of the IPL source (A, B, C, or D) that you want to select.

For information on how each IPL source works and why you may need to change it, go to IPL Type page in the Information Center.

Restarting a secondary partition on system IPL

When you select this option, you can set a secondary partition to start automatically when you perform a system (primary partition) initial program load (IPL).

You can perform this procedure from system service tools (SST) or dedicated service tools (DST). To set a logical partition to start with the system, follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 2 (Work with partition status).
4. Press F23 for more options.
5. Use the cursor to choose the logical partition you want to change.
6. Select option 13 (IPL partition on system IPL) and press Enter.

Holding a secondary partition from restarting on system IPL

When you select this option the logical partition will not start when you perform a system (primary partition) initial program load (IPL).

You can perform this procedure from system service tools (SST) or dedicated service tools (DST). To prevent a logical partition from starting with the system, follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 2 (Work with partition status).
4. Press F23 for more options (optional).
5. Use the cursor to choose the logical partition you want to change.
6. Select option 14 (Hold partition on system IPL).

Chapter 4. Changing logical partition processing resources

You can designate processing resources to increase or decrease the performance capabilities of your logical partitions. Processing resources include interactive performance percentage, processors, main storage, and OptiConnect.

You can adjust the configuration of a partition to fit the performance you assign to it. You can accomplish this by removing processing resources from one logical partition and adding them to another. This will optimize performance for the logical partitions that carry the most performance.

When you add or remove processing resources remember the following:

- You can only change processing resources from the primary partition.
- You can change interactive performance percentage, processors, and main storage in the Change Partition Processing Resources display.
- Activating changes to processing resources might require a system IPL.
- The sum of each of the processing resources across the logical partitions cannot exceed that of the system. In other words if you have a total of four processors, you cannot assign three to the primary partition and two to a secondary partition.
- Every logical partition must have at least one processor.
- The primary partition must have at least 256 MB of main storage. Secondary partitions must have at least 64 MB of main storage.
- When you change processing resources, you can designate upper and lower limits. In other words, you can specify that a logical partition can only have a maximum or minimum amount of main storage, processors, and interactive performance. By setting limits, you activate changes in logical partition processing resources with a logical partition IPL instead of a system IPL.

The following pages will show you how to change these resources:

- Changing logical partition interactive performance
- Changing logical partition main storage
- Changing logical partition processors

Changing logical partition interactive performance

Applications that interact directly with a user through some sort of system workstation are interactive. Interactive performance is a percentage of the computer's processing cycles that are dedicated to interactive programs. You can add and remove as much interactive performance as you need from a logical partition as long as you remember these rules:

- Each logical partition must have at least 1% of interactive performance. Depending on each system, some logical partitions require more than 1% of interactive performance.
- The sum of the interactive performance for all logical partitions cannot exceed 100%.
- You cannot exceed the maximum or minimum limits for the secondary partition that are determined by its processor count.

Notes:

1. To activate changes to interactive performance on secondary partitions, you need to restart the secondary partition.
2. To activate changes to interactive performance on the primary partition, you need to restart the entire system.
3. If you are also changing logical partition processors or main storage, wait until you have made all of your changes before you perform the IPL. This will save time.

You can perform this procedure from dedicated service tools (DST). Follow these steps to change logical partition interactive performance:

1. Start DST.
2. From DST select option 11 (Work with system partitions) and press Enter.
3. Select option 3 (Work with partition configuration).
4. Use your cursor to select the logical partition you want to change.
5. Select option 2 (Change partition processing resources) and press Enter. The change Partition Processing Resources display will appear.
6. Use the cursor to select Change partition interactive performance.
7. If you want to change limits, press F9.
8. Enter the percentage of interactive performance for the logical partition.

Note: If you are also changing main storage or processors, do not press Enter after the next step. You can wait until you change interactive performance and main storage before pressing Enter. This will save you time.

9. Press Enter to confirm your choice.

Changing logical partition main storage

This page describes how to change main storage on a logical partition. If you have not physically added more main storage to the system or have any resources available, you must remove main storage from one logical partition and add it to another. You can add and remove as much main storage from a logical partition as you need as long as you remember these rules:

- The primary partition must have at least 256 MB of main storage.
- Each secondary partition must have at least 64 MB of main storage.
- The sum of the main storage in all of the logical partitions cannot exceed system main storage. You cannot have 300 MB of main storage in the primary partition, and 200 MB in a secondary partition if your system only has 400 MB.

Notes:

1. To activate the changes to main storage on secondary partitions you need to restart the secondary partitions.
2. To activate changes to main storage on the primary partition you need to restart the system.
3. If you are also changing the logical partition's processors or interactive performance, wait until you have made all of your changes before you restart. This will save you time.

You can perform this procedure from dedicated service tools (DST) on the primary partition. To change partition main storage follow these steps:

1. From the primary partition, start DST.
2. Select option 11 (Work with system partitions) and press Enter.
3. Select option 3 (Work with partition configuration).
4. Use your cursor to select the logical partition you want to change.
5. Select option 2 (Change partition processing resources) and press Enter. The Change Partition Processing Resources display will appear.
6. Use the cursor to select new size of main storage.
7. If you want to change limits, press F9.
8. Type the new size of main storage for the logical partition and press Enter.

Note: If you are also changing processors or interactive performance, do not press Enter after the next step. You can wait until you change interactive performance and main storage before pressing Enter. This will save you time.

9. At the confirmation display, press Enter to confirm your choice.
10. Restart the entire system to activate the changes.

Changing logical partition processors

This page describes how to add and remove processors on a logical partition. If you have not physically added more processors to the system or have processors available, you must remove processors from one logical partition then add them to another. You can add and remove as many processors from a logical partition as you need as long as you remember these rules:

- Each logical partition must have at least one processor.
- The sum of the processors in all of the logical partitions cannot exceed the number of processors in the system. For example, you cannot have three processors in the primary partition, and two processors a secondary partition if your system only has four processors.

Notes:

1. To activate the changes from adding and removing processors on secondary partitions you need to restart the secondary partitions.
2. To activate changes to processors on the primary partition you need to restart the system.
3. If you are also changing the logical partition's main storage or interactive performance, wait until you have made all of your changes before you restart. This will save you time.

You can perform this procedure from dedicated service tools (DST).

To change partition processors follow these steps:

1. Start DST.
2. From DST select option 11 (Work with system partitions) and press Enter.
3. Select option 3 (Work with partition configuration).
4. Use your cursor to select the logical partition you want to change.
5. Select option 2 (Change partition processing resources) and press Enter. The Change Partition Processing Resources display appears.
6. Use the cursor to select New number of processors.
7. If you want to set limits, press F9.
8. Type the new number of processors and press Enter.

Note: If you are also changing interactive performance or main storage, do not press Enter after the next step. You can wait until you change interactive performance and main storage before pressing Enter. This will save you time.

9. At the confirmation display, press Enter to confirm your choice.

Chapter 5. Changing logical partition configuration

Changing logical partition configuration consists of these tasks:

- Changing a secondary partition name.
- Changing bus ownership type.
- Changing and switching logical partition I/O resources.
- Changing a logical partition load source resource.
- Changing a logical partition console resource.
- Selecting or changing a logical partition alternate IPL resource.
- Selecting or changing logical partition default electronic customer support resource.
- Installing new hardware.
- Adding a new logical partition.
- Change communication options.
- Deleting a secondary partition.

Changing a secondary partition name

Each logical partition has an 8 character unique identifier called the partition name. This identifier does not have to be the same as the system name for each logical partition. When you change a secondary partition name, the following rules apply:

- You cannot change the primary partition's name.
- Secondary partitions cannot share the same name.
- Names cannot exceed eight characters.
- Names must have at least one character (no all space names)
- Legal characters are A through Z, 0 through 9, and blanks.

You can change a secondary partition's name from dedicated service tools (DST) on the primary partition. To change a secondary partition name, follow these steps:

1. Go to a DST menu.
2. From DST select option 11 (Work with system partitions) and press Enter.
3. Select option 3 (Work with partition configuration).
4. Use the cursor to choose the logical partition you want to change.
5. Select option 1 (Change partition name).
6. The Change Partition Name display appears. Type the new name for your logical partition and press Enter.
7. The Confirm Changed Partition display appears. Press Enter to confirm your changes.

Changing bus ownership type for logical partitions

A logical partition can own a system input/output (I/O) bus one of two ways, *own bus dedicated*, and *own bus shared*.

When a logical partition owns a bus with *own bus dedicated* status, no other logical partition can share it.

If a logical partition owns a bus with the status of *own bus shared*, the partition can share the bus with another logical partition. However, that other logical partition must add that bus with the status of *use bus shared*.

Before you change a bus ownership type to *own bus dedicated*, you must first add all of the resources under that bus to that partition. When you change a bus' ownership type to *own bus shared*, resources under that bus can now be removed. Other logical partitions (primary partition and all secondary partitions) can now use these resources.

When you change bus ownership type, restart the entire system to activate the change.

You can change bus ownership type from dedicated service tools (DST) or system service tools (SST) from the primary partition only.

Follow these steps to change bus ownership type:

1. On the primary partition go to a DST or SST menu.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 3 (Work with partition configuration).
4. Use the cursor to select the partition with the bus you want to change ownership type.
5. Select option 5 (Change bus ownership type).
6. Use the cursor to select the bus you want to change ownership type.
7. Select option 1 (Own bus dedicated) or 2 (Own bus shared) and press Enter.
8. Restart the system to activate the change.

Changing and switching I/O resources

You can add or remove input/output (I/O) resources at the I/O processor (IOP) level. You can also add or remove I/O resources at the bus level. You can even share a system bus with another logical partition. See these topics to perform these tasks:

- Remove an I/O resource from a logical partition.
- Add an I/O resource to a logical partition.
- Switch an IOP between two logical partitions.

It may be necessary to perform an initial program load of the primary partition to activate some of these changes.

Removing I/O resources for logical partitions

Removing input/output (I/O) resources means removing resources from a logical partition. You can remove some types of I/O Processors (IOPs) without restarting the system. When you remove a system I/O bus, you need to restart the system to activate the change. When you remove an I/O resource, it becomes available; that is, no logical partition owns it. The system puts the resource on the available list.

Removing I/O resources consists of two phases: freeing resources from their jobs, and removing the I/O resources from the logical partitions.

Freeing resources

Before you remove an IOP or a system I/O bus, ensure that none of the controlled devices are in use. Follow these steps to free resources.

1. If the resource you are removing has disk units in an auxiliary storage pool (ASP), remove the disks units from the ASP. For information on removing disk units from ASPs see the Working with Auxiliary Storage Pools chapter of the book, Backup and Recovery .

2. Use the Work with Configuration Status (WRKCFGSTS) command to vary off any devices and controllers that are active on the resource. For more information on varying off devices refer to the Tips for Customizing Your System chapter of the book, AS/400 Basic System Operation, Administration, and Problem Handling  .

Removing resources

When you remove resources you can choose between option 1 (Remove resources) and option 2 (Remove and clear hardware resource). Select option 1 (Remove resources), if you will be moving the IOP back into this logical partition again. The system saves the resource information. This resource information maps the physical hardware to the OS/400 device descriptions for the system. Select option 2 (Remove and clear hardware resource), if you will never move this IOP into this logical partition again.

Do not remove the following IOPs.

1. An IOP with the secondary partition load source.
2. An IOP with the secondary partition console.

A secondary partition cannot be valid without these IOPs.

When removing an IOP from a logical partition which is powered off, it is normal for the Logical Partitioning Error Report to appear with the message: ″State of IOP is unknown.″ You can ignore this error message (use F10 or option 1) if you know that:

- The target IOP does not contain any configured disk units.
- The target IOP is not the partition console.

Otherwise refer to the page Working with the logical partitioning error report if the ″State of IOP is unknown″ message appears.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST).

Follow these steps to remove an I/O resource:

1. Start SST or DST from the primary partition.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select menu option 3 (Work with partition configuration).
4. Use the cursor to select the logical partition from which you want to remove the I/O resource.
5. Select option 4 (Remove I/O resources). The Remove I/O Resources display will appear.
6. Use the cursor to choose the IOP or bus you want to remove.

Note: See the **Removing resources** heading, above, for the difference between option 1 (Remove resources) and option 2 (Remove and clear hardware resource).

7. Select option 1 (Remove resources) or option 2 (Remove and clear hardware resource).
8. Press Enter.
9. The Confirm Remove I/O Resources display appears. Press Enter to confirm your choice.
10. If the Logical Partitioning Error Report appears with a *Device in use* message, there are active jobs using the devices on the IOP. Although you can press F10 to take the devices from the jobs, you should end the jobs normally before proceeding. See the **Freeing resources** heading, above, for more information on ending jobs..

Adding I/O resources for logical partitions

Use this procedure to add new resources or to add resources that you removed from another logical partition.

When you add an IOP to a partition, the partition state has minimal impact. If the partition is on and the bus is already shared, the system will add the IOP dynamically in a couple of minutes. If the partition is not on, the IOP will appear during the next logical partition IPL. If the bus is not shared, the IOP will appear after the next system initial program load (IPL).

Note: If you are adding new hardware to the system, go to Installing new hardware before proceeding.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST). Follow these steps to add an I/O resource:

1. Start SST or DST from the primary partition.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with system partitions) and press Enter.
3. Select option 3 (Work with partition configuration).
4. Use the cursor to select the logical partition to which you want to add the I/O resource.
5. Select option 3 (Add I/O resources). The Add I/O Resources display will appear.
6. Use the cursor to choose the IOP or bus you want to add.
   - If this resource is a system bus, you can select option 1 to add it with the status of *own dedicated*. No other logical partition will be able to share it.
   - If this resource is an IOP, you must use option 1 to add it with the status of own dedicated. A logical partition cannot share an IOP.
   - If this resource is a system bus you can type a 2 to select the bus resource with the status of own bus shared. This logical partition owns the bus and can share it.
   - If the resource is a system bus which is already owned shared by another logical partition, you can type a 3 to select it with the status of *use bus shared*. This logical partition does not own the bus, but can share it with the logical partition that does.

   Type a 1, 2, or 3 to select it.
7. Press Enter.
8. The Confirm Add I/O Resources display will appear. Press Enter to confirm your choice.

Once you add an IOP you need to vary on its devices. See the Configuration Tasks You can Perform chapter of AS/400 Basic System Operation, Administration, and Problem Handling  for information on varying on devices.

Switching I/O processors for logical partitions

Two or more logical partitions can use the same Input/Output Processor (IOP) by switching it from one logical partition to another. However, the following rules apply:

- The IOP is on a bus that the logical partitions share.
- The IOP does not use disk units with load source data.
- The logical partitions cannot use the IOP at the same time.
- You must remove the IOP from one logical partition.
- You must add the IOP to another logical partition.

Follow these steps to switch an I/O resource:

1. Go to the Display System I/O Resources display and verify that both logical partitions share the bus to which the IOP is attached. One logical partition can own the bus with *own bus shared* status, and the other use it with *use bus shared* status. Or both logical partitions can use the bus with *use bus shared* status.
2. Remove the candidate IOP from the logical partition that owns it.
3. Add the candidate IOP to the target logical partition. You do not have to restart the system to activate the change.

After you add the IOP to the logical partition, you might need to designate it as the partition alternate IPL or electronic customer support IOP. Removing an IOP marked for special function clears all such designation and leaves the partition without this special resource until you specify another.

Changing a logical partition load source resource

Attention: If you change a load source for a logical partition, the following could happen:

- You could lose all system data for the logical partition.
- You might have to reinstall the logical partition.
- You might have to reinstall the operating system on the logical partition.

If you need to reinsatll the operating system, refer to the AS/400e Software Installation  book for instructions.

A logical partition load source is an I/O processor (IOP) with at least one disk unit that contains the Licensed Internal Code for the system. If your system is using mirroring, there may be two load source two disk units. The load source is one of the tagged resources. To be valid, all logical partitions must have a load source resource.

You can perform this procedure from dedicated service tools (DST) or system service tools (SST). Follow these steps to change a load source resource:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with System Partitions).
3. Selection option 3 (Work with partition configuration).
4. Use the cursor to select the logical partition you want to change.
5. Select option 6 (Select load source resource)

Note: The list of resources displayed contains load source capable IOPs with disk units in the proper position. If the disk units in on this IOP are new, the IOP might be filtered out of the of the list in the Select Load Source Resource display. If you cannot see the IOP you want to tag, disable filtering by pressing the F9 key.

6. Use the cursor to choose the IOP with the new load source resource disk units.
7. Select option 1 (Select IOP).
8. Press Enter.
9. At the confirmation display press enter to confirm your choice.

Changing a logical partition console resource

A console resource is tagged resource. It is an IOP with the workstation that you use to interact with your AS/400. To be valid, a logical partition must have a console resource.

You can perform this procedure from system service tools (SST) or dedicated service tools (DST).

Perform these steps to change a logical partition console resource:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with System Partitions).
3. Selection option 3 (Work with partition configuration).
4. Use the cursor to select the logical partition you want to change.
5. Select option 7 (Select console resource).

   Note: The displayed list of resources contains only console capable workstation IOPs. If you are using a communications IOP to attach a PC as an Operations Console, the IOP will not be on the Select Console Resource display. Disable filtering by pressing the F9 key.
6. Use the cursor to select the IOP with the console resource.
7. Select option 1 (Select console IOP) or option 2 (Select alternate console IOP).
8. Press Enter.
9. At the confirmation display, press Enter to confirm your choice.

Selecting or changing an alternate IPL resource for logical partitions

An alternate IPL (initial program load) resource is tagged resource. It is an IOP with a device (like a tape unit or optical device) that you can use to restart a logical partition in D mode (a D mode IPL).

Follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with System Partitions).
3. Selection option 3 (Work with partition configuration).
4. Use the cursor to select the logical partition you want to change.
5. Select option 8 (Select alternate IPL resource).

   Note: The list of resources displayed contains alternate IPL capable IOPs with removable media devices in the proper position. If the device in on this IOP is new, the IOP might be filtered out of the of the list in the Select Alternate IPL Resource display. If you cannot see the IOP you want to tag, disable filtering by pressing the F9 key.
6. Use the cursor to select the IOP with the alternate IPL resource.
7. Select option 1 (Select console IOP)
8. Press Enter.
9. At the confirmation display, press Enter to confirm your choice.

Selecting or changing default electronic customer support resource for logical partitions

The default electronic customer support (ECS) resource is a tagged resource. It is the I/O processor (IOP) with the modem necessary to receive electronic customer support.

You can perform this procedure for system service tools (SST) or dedicated service tools (DST). To select or change default electronic customer support resource, follow these steps:

1. Start SST or DST.
2. From SST select option 5 (Work with system partitions); from DST select option 11 (Work with System Partitions).
3. Selection option 3 (Work with partition configuration).
4. Use the cursor to select the logical partition you want to change.
5. Select option 9 (Select default electronic customer support resource).

Note: The displayed list of resources contains only ECS capable communication IOPs. If the communication IOA in this IOP is new, the IOP might be filtered out of the of the list in the Select Default Electronic Customer Support Resource display. If you cannot see the IOP you want to tag, disable filtering by pressing the F9 key.

6. Use the cursor to select the IOP with the ECS resource.
7. Select option 1 (Select console IOP)
8. Press Enter.
9. At the confirmation display, press Enter to confirm your choice.

Installing new hardware for logical partitions

When you install new input/output (I/O) hardware, here are some things you should be aware of:

- A new device is owned by the I/O processor (IOP) to which it is attached.
- A new IOP is owned by the System Bus to which it is attached.
- The primary partition owns a new system bus with *own bus shared* status. See Changing and switching I/O resources for information on adding I/O resources to your system. See Changing bus ownership type for information on how to change bus usage on your system.
- New processors and main storage are available (unassigned) to be assigned to a partition.
- When adding or removing new disk units to your system you may need to clear any residual logical partition configuration data.

Adding a new logical partition

You can add a new secondary partition to a system that already has logical partitions. If you are creating a secondary partition on a system without logical partitions, go to the Creating logical partitions page.

Before you add a new logical partition, you should decide where you are going to get the resources for the new partition. You can either install new resources for the new logical partition, or you can use resources from existing logical partitions. Before you change your system to add a new logical partition, observe the following rules:

- The primary partition must have at least 256 MB of main storage. Secondary partitions must have at least 64 MB of main storage.
- Every logical partition must have at least one processor.
- Every logical partition must have a system console.

- Do not remove the load source from a secondary partition you want to keep.
- Every logical partition must have access to an alternate IPL IOP/device. It can be dedicated or switchable.
- Every logical partition must have a load source disk.

To add a new logical partition follow these steps:

1. Power down all of the secondary partitions.
2. Perform an initial program load (IPL) of the entire system in manual mode to dedicated service tools (DST).
3. Verify that the secondary partitions are powered down.
4. Remove the processing resources from the primary partition or secondary partitions for the new secondary partition.
5. Remove the I/O resources from the primary partition or secondary partitions for the new secondary partition.
6. At the Work with System Partitions display, select option 5 (Create a new partition).
7. Press F9 for a list of limits.
8. Provide the required information for:
   - *Partition name*. (A partition name can be any word (except *PRIMARY*), not exceeding 8 characters (A - Z and 0 - 9)).
   - *Number of partition processors*.
   - *Size of main storage (MB)*.
   - *Partition interactive performance.*
   - *Connect to system Virtual OptiConnect*.
   - *Connect to system HS-Connect (High Speed Link)*.
9. Press Enter.

   If you have entered a value that is out of range, you will receive a message to change your numbers. You can also adjust limits for the following:
   - *Processors*.
   - *Size of main storage (MB)*.
   - *Partition interactive performance*.
10. If you have had to make adjustments, press Enter after you finish. The Add I/O Resources display is next.
11. At the Add I/O Resources display, type either a 1 (*Own dedicated*), 2 (*Own bus shared*), or 3 (*Use bus shared*) beside your selected bus resource. Type 1 beside your selected IOP resources.
12. Press Enter to go to the Confirm Add I/O Resources display.

    If the expected resources are not on the list, return to the Add I/O Resources display. Make sure that you have added the correct resources.
13. Press Enter to confirm your selection and go to the Select Load Source Resource display. Press F12 to return to the previous display if you wish to change your choices. If your selection was successful, a confirmation notice will appear at the bottom of the display.
14. At the Select Load Source Resource display, type 1 (*Select IOP*) next to the desired resource and press Enter.

    If the expected resource is not on the list, return to the Add I/O Resource display. Make sure that you have added the correct resources. If the expected resource is already on the Add I/O Resource display list, consult the AS/400 Logical Partitions Hardware Planning Guide  for hardware requirements.

15. At the Confirm Load Source Resource display review your selection. Press Enter again to confirm your selection, or press F12 to return to the previous display and change your choice. If your selection was successful, a confirmation notice will appear at the bottom of the display.
16. At the Select Console Resource display, select your workstation-capable IOP. Type 1 (*Select console IOP*), or 2 (*Select alternate console IOP*) .

    If the expected resource is not on the list, return to the Add I/O Resource display. Make sure that you have added the correct resources.

    If you are using Operations Console as your secondary partition's console, use the F9 option to disable automatic filtering. Select the appropriate asynchronous communications IOP as the console.
17. Press Enter to go to Confirm Console Resource display. Review your selection.
18. Press Enter again to confirm your selection and go to the Confirm New Partition display.
19. If the logical partition does not have a dedicated alternate IPL device, skip ahead to step 25.
20. Press F11 (*Select alternate IPL*).
21. Type 1 (*Select IOP*) next to the desired alternate IPL device.

    If the expected resource is not on the list, return to Add I/O Resource display. Make sure that you have added the correct resources.
22. Press Enter to go to Confirm Alternate IPL Resource display.
23. Review your selections.
24. Press Enter to confirm and return to Confirm New Partition display.
25. Review your selections.

    (An asterisk will appear beside the load source IOP you have selected. Other special characters will appear identifying previously selected resources, < for the console, % for the alternate IPL).
26. Press Enter to go to Work with System Partitions display. If your selection was successful, a confirmation notice will appear at the bottom of the display.
27. Mark the console IOP as the electronic customer support IOP if you are using Operations Console on your partition. Use option 3 (Work with Partition Configuration). Select the new partition by using option 9 (Select default electronic customer support resource). Choose the appropriate IOP by entering a 1. A confirmation message should appear. Now use F12 to return to the Work with System Partitions display
28. Here you have the following options:
    a. If this is the last secondary partition you intend to create, restart the system. You must perform a system restart to activate all changes for your new partition.
    b. If you want to create additional partitions, and have removed sufficient resources, go to step 6 on page 32 of this page. After you have completed the creation of your last partition, restart the system, and activate all changes for your new partitions.
    c. If you want to create additional partitions, and have **not** kept sufficient resources for the creation process, see removing I/O resources for instructions. You must return to a partition (primary or secondary), with sufficient resources and change, or remove some before you can create a new partition. Once you have available resources, return to step 6 on page 32 of this page. After you have completed the creation of your last partition, restart the system and activate all changes for your new partitions.

Refer to the AS/400e Software Installation  book for instructions on installing software.

Changing communication options for logical partitions

Two communications options that you can change in a logical partition are Virtual OptiConnect and High Speed Link.

Virtual OptiConnect allows logical partitions to communicate with each other without any hardware. To use virtual OptiConnect, purchase an OptiConnect license (option 23 OS/400 operating system) or an OptiMover license (Program Request for Price Quotation (PRPQ) 5799-FWQ).

External and virtual OptiConnect have identical commands. See the book OptiConnect for OS/400  for more information on OptiConnect.

If you have purchased an OptiConnect license, follow these steps to connect a logical partition to virtual OptiConnect:

1. From the DST menu on the primary logical partition, select option 11 (Work with system partitions).
2. Select option 3 (Work with partition configuration).
3. Use your cursor to select the logical partition you want to change.
4. Select option 10 (Change partition communication options).
5. Use the cursor to select the *Connect partition to system virtual OptiConnect* field or the *Connect partition to HS-Connect* field.
6. Selection option 1 (Yes) or option 2 (No).
7. Press Enter to confirm your choice.
8. Restart the system (primary partition and all secondary partitions) to activate the change.

Deleting a secondary partition

Under certain circumstances, it is possible that you will want to delete a logical partition. For example, if you need its resources, you could delete a logical partition and distribute its resources to other logical partitions. It is also possible that you could create a temporary logical partition, perform a specific function, and delete it once that function is over.

When you delete a logical partition, all of its resources automatically become available to add to other partitions.

To delete a logical partition follow these steps:

1. Before you delete a secondary partition, perform a full system save, if desired. If you do not, you could lose all data on the disk units. For information on backing up and recovering data on logical partitions read the information in the Saving logical partitions page in the Backup and Recovery topic.
2. Power down the secondary partition you are going to delete.
3. From the DST menu on the primary partition, select option 11 (Work with system partitions).
4. Select option 3 (Work with partition configuration).
5. Use your cursor to select the logical partition you want to delete.
6. Select option 11 (Delete partition) and press Enter.
7. The Confirm Deleted Partition display appears. Press Enter to confirm your choice.
8. Another Confirm Deleted Partition display appears. Press F10 to delete the logical partition.
9. Restart the system (primary partition and all secondary partitions) to activate the change.

Chapter 6. Managing security for logical partitions

The security-related tasks you perform on a partitioned system are the same as on a system without logical partitions. However, when you create logical partitions, you work with more than one independent system. Therefore you will have to perform the same tasks on each logical partition instead of just once on a system without logical partitions.

Here are some basic rules to remember when dealing with security on logical partitions:

- You add users to the system one logical partition at a time. You need to add your users to each logical partition you want them to access.
- Limit the number of people who have authority to go to dedicated service tools (DST) and system service tools (SST) on the primary partition. Refer to the table in Controlling your logical partitions with DST and SST for more information on DST and SST.
- Secondary partitions cannot see or use main storage and disk units of another logical partition.
- Secondary partitions can only see their own hardware resources.
- The primary partition can see all system hardware resources in the Work with System Partitions displays of DST and SST.
- The primary partition operating system still only sees its resources available.
- The system control panel controls the primary partition. When you set the panel mode to Secure, no actions can be performed on the Work with Partition Status display from SST. To force DST from the system control panel, you must change the mode to Manual.
- When you set the operating mode of a secondary partition to secure, you restrict the usage of its Work with Partition Status display in these ways:
  - You can only use DST on the secondary partition to change partition status; you cannot use SST to change partition status.
  - You can only force DST on the secondary partition from the primary partition Work with Partition Status display using either DST or SST.
  - You can only use DST on the primary partition to change a secondary partition mode from secure to any other value.

  Once a secondary partition's mode is no longer secure, you can use both DST and SST on the secondary partition to change partition status.

For more information on security on your AS/400 refer to the book OS/400 Security-Reference  and the Basic system security and planning pages of the Information Center.

Chapter 7. Installing program temporary fixes on a system with logical partitions

The basic steps of installing a program temporary fix (PTF) are the same on a system with logical partitions as on a system without logical partitions. However there are some precautions you should take:

- When you load PTFs to a primary partition, power down all secondary partitions before you restart the primary partition.
- When using the GO PTF command on the primary partition, change the automatic IPL parameter from the default (*YES) to (*NO). You do not have to do this if you first power down the secondary partitions.

You can find information on installing PTFs in the Tips for Managing your System chapter of AS/400 Basic System Operation, Administration, and Problem Handling  and the Information Center page, Managing fixes with Management Central.

Installing Partition Sensitive PTFs

Most fixes pertaining to logical partitioning are applied as mentioned above. However, there are certain partition sensitive PTFs that apply specifically to the lowest level code that controls logical partitions. Partition specific PTFs will have special instructions referring to these steps.

Attention: Failure to follow these steps exactly could result in a lengthy recovery process.

For partition sensitive PTFs you should follow these steps exactly:

1. Permanently apply any PTFs superseded by the new PTFs.
2. Perform an initial program load (IPL) of all partitions from source A.
3. Load the PTFs on all logical partitions using the OS/400 load PTF (LODPTF) command. Do not use the GO PTF command.
4. Apply the PTFs temporarily on all logical partitions using the OS/400 apply PTF (APYPTF).
5. Power down all secondary partitions.
6. Perform a power down and IPL of the primary partition from source B in normal mode.
7. Perform normal mode IPLs of all secondary partitions from source B.
8. Apply all of the PTFs permanently using APYPTF.

For information about the LODPTF and APYPTF commands go to the Advanced PTF Topics section in the Tips for Managing your System chapter of AS/400 Basic System Operation, Administration, and Problem Handling  .

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