System i

Connecting to System i Operations Console

Version 5 Release 4

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Note

Before using this information and the product it supports, read the information in "Notices," on page 113.

Seventh Edition (February 2006)

This edition applies to version 5, release 4, modification 0 of IBM i5/OS (product number 5722–SS1) and to all subsequent releases and modifications until otherwise indicated in new editions. This version does not run on all reduced instruction set computer (RISC) models nor does it run on CISC models.

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Operations Console

The Operations Console acts as a system console for you to access and administer your systems.

IBM® facilitates interaction with your systems by providing management consoles that can be accessed through terminals and PCs. The Operations Console is an installable component of iSeries™ Access for Windows®. Using Operations Console, you can access and control the console and control panel functions either locally or remotely through one or many PCs, which facilitates many administrative functions.

Operations Console uses 5250 emulation provided by either iSeries Access for Windows or IBM Personal Communications to emulate a console. To emulate a system control panel, Operations Console provides a graphical remote control panel or virtual control panel. To enable communications between a system and a PC, Operations Console can use a local area network (LAN) and TCP/IP connections, or can use direct cable attachment. It supports dial-in connections from remote PCs to PCs that are directly attached to systems. These remote PCs can then function as a console, which allows easier system management and access.

Operations Console support is available with V5R2 and later releases of the i5/OS® operating system. IBM iSeries 270 and 8xx models support only Operations Console as their PC console.

Enhanced authentication and data encryption provide network security for console procedures. Operations Console network connections use a variety of Secured Sockets Layer (SSL), that supports device and user authentication without certificates.

If you plan to use Operations Console to manage System i™ hardware, see the Managing Operations Console topic collection in the IBM Systems Hardware Information Center.

Related information

Managing Operations Console

What's new for V5R4

This topic highlights the changes made to the Operations Console topic collection for V5R4.

New system-side functions have been added in V5R4 to make it easier to manage your system using Operations Console.

The system no longer requires a password when creating a device ID. Systems can now accept console service functions in D-mode even in the event that there is an uninitialized disk unit present. A system can now force an exit at C6004508 in D-mode with function 21 if needed.

The take over and recovery option takes effect immediately now. Also, take over and recovery functions are supported in D-mode now. The `Console Information Status` window during console take over or recovery has been changed to make it easier to see if `Take over the console` is **YES** or **NO**. Finally, the DST signon window associated with take over / recovery (`ATTENTION: This device can become the console`) no longer has any PF keys since the only function allowed is signon.

Only iSeries 270 and 8xx are supported. This means that only parallel direct attached RPC can be used. Also, in V5R4, older SPD-bus cards are no longer supported even in migration towers. The code is still in place so that users can take advantage of it, however there is no support for its usage.

Client-side functionality also has some added features for Operations Console.

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Operations Console now has more functions and additions to client-side functions to make it easier to use. In V5R4 there now are more descriptive error and status messages to facilitate management and troubleshooting. The Operations Console client now no longer requires a password when specifying a device ID.

Operations Console functions more easily on your network. It allows for the user to specify the base IP address of the console connection.

Operations Console no longer supports Windows NT® in V5R4.

How to see what's new or changed

To help you see where technical changes have been made, this information uses:

- The  image to mark where new or changed information begins.
- The  image to mark where new or changed information ends.

To find other information about what's new or changed this release, see the Memo to Users.

Printable PDFs

Use this to view and print a PDF of this information.

To view or download the PDF version of this document, select Operations Console (1,105 KB).

Manuals

- Setting Up Your Twinaxial System 

  The twinaxial console uses a command line interface to access and manage your System i environment, and it does not require the use of a personal computer to act as a console. You access the System i platform through a console screen, a keyboard, and twinaxial cables.

Web site

- iSeries Access Web site 

  This web site includes online product information about iSeries Access and Operations Console.

Other information

- iSeries Access for Windows: Installation and setup

  This topic describes how to install and configure iSeries Access for Windows on both the system and the PC. Installation and configuration are necessary on both the system and the PC.
- Control panel

  Operate the system by directly manipulating the control panel. You can use the control panel to turn on or off the system, perform an initial program load (IPL), or determine processor activity.
- Logical partitions

  Logical partitions let you distribute resources within a single system to make it operate as if it were two or more independent systems.
- Upgrade your iSeries

  This topic describes how to upgrade hardware features, upgrade to a different system model, or upgrade to a more current release of the i5/OS operating system. During an upgrade, the source system and the target system keep the same serial number.
- Data migrations

This topic describes how to migrate data from one system or partition to another system or partition. When performing a data migration, the source system and the target system must have different serial numbers.

- Planning for your physical environment

  Good planning is essential for the successful setup and use of your system. It ensures that you have everything you need and meet all prerequisites. The planning information in this topic helps you place the system, plan power needs, print any special cabling or setup instructions, meet any PC requirements, and prepare for unique configurations based on how you will use the system (for example, clustering of systems, Internet connections, and rack mounting).
- Print server and rack cabling instructions

  Cabling instructions are available to print for your system.

Saving PDF files

To save a PDF on your workstation for viewing or printing:

1. Right-click the PDF in your browser (right-click the link above).
2. Click the option that saves the PDF locally.
3. Navigate to the directory in which you want to save the PDF.
4. Click **Save**.

Downloading Adobe Reader

You need Adobe Reader installed on your system to view or print these PDFs. You can download a free copy from the Adobe Web site (www.adobe.com/products/acrobat/readstep.html) .

Planning considerations for Operations Console

Before you begin setting up your Operations Console, determine how to best configure it.

After you complete the planning requirements, you can create a setup checklist that will list the Operations Console prerequisites for your system.

Related concepts

"PC preparations for Operations Console" on page 30
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

Planning considerations for your configuration

To plan for your Operations Console configuration, you need to find out the specific connectivity types that are allowed by the various Operations Console configurations.

The scenarios included offer specific configurations examples to help you select a console configuration most suited to your needs. If you plan ahead, you can include additional features in your configuration.

Important:

- If you call a service representative to set up your new system, you must have the PC that you are going to use as a console ready to be connected to your system. This includes having all cables ready and all software installed. For example, you must already have your Windows operating system and iSeries Access for Windows installed on the PC.
- If you are configuring Operations Console for an i5/OS logical partition running the Linux® operating system, see the Configure the LAN console for a guest partition topic.

Related information

Configure the LAN console for a logical partition

Console planning considerations

When you plan for Operations Console for one or more of your systems, consider these points.

The following information applies to all systems:

- Unlike previous versions of i5/OS, this release and subsequent releases will support only the console type that is currently configured. If no console type is specified, such as when a new logical partition is being created, the supporting hardware IOP specified during the creation process takes precedence. If the available hardware contains more than one adapter for a selected console type, then the first console workstation to connect will be configured to become the console.
- There is also a special set of console options called **Allow console recovery and console can be taken over by another console**. This set of functions allows Operations Console to take control from another console device. The default value of this console option is disabled.
  - When the option is enabled:

    The first Operations Console device connected becomes the console. Additional LAN-connected Operations Console devices will have a special DST signon.

    All other 5250-based connections will have the new `Console Information Status` window.

    Console recovery without the loss of the job is available.
  - When the option is disabled:

    All 5250-based connections will be presented the new `Console Information Status` window.

    Console recovery without the loss of the job is not available.
- Operations Console, both direct attached and network (LAN), and twinaxial workstations, can coexist as console devices if you remember these rules:
  - Only one device can be active at a time.
  - A twinaxial workstation on any twinaxial workstation controller adapter with port 0 (addressed either 0 or 1) or port 1 (addressed either 0 or 1) can become a console device if twinaxial console is the console type selected. If twinaxial console is selected as the console type then Operations Console devices may not be started.
- Operations Console allows multiple LAN connections to a single system or logical partition, but only one 5250 session can have control of a system at a time. An active console is the command interface to a system through 5250 emulation or IBM Personal Communications that is currently interacting with the system. More than one Operations Console device might have data on the screen but only one is truly active.
- IBM System i5™ and eServer™ i5 models start counting logical partitions with the number 1 (even if it is the only partition) instead of a 0. iSeries 270 and 8xx models start counting logical partitions with the number 0. For the console to connect properly, your logical partitions must also begin numbering at 1 instead of 0. This is especially true if you rely on the BOOTP process to configure the system with its network data.
- The client PC also allows multiple local console connections but allows only one local console directly attached to the system configuration (or local console directly attached to the system with remote access allowed) for a single PC.
- There is a maximum of 26 Operations Console emulator sessions available per Operations Console PC client.
- Try to avoid putting your Operations Console on the same IOP as the storage devices.
  - There might be configurations when this cannot be avoided.
  - During very heavy usage of storage devices, the console might appear to stop working temporarily, but it should resume operation shortly. If the console is placed on the same IOP as the storage devices, enable the console option **Allow console recovery and console can be taken over by another console**.

The following information pertains to console takeover and recovery:

In V5R4 and later releases, there is a special set of functions known as console take over and recovery, that allows a LAN-connected Operations Console to take control from another console device. Use the following information to help determine what console devices are best for your work environment and how to deploy these devices to take advantage of the new functions.

- **Takeover** is the process used for a LAN-connected console device to take control from the current console device. The user signed on to the PC that wishes to take control requires special authority and is initiating the takeover from a new menu. This takeover function is not used for directly attached consoles.
- **Recovery** is the process of regaining control of the job running on the console after a problem with the console was encountered. The recovery process may be to the same console device or a different console device and may be facilitated by additional work to enable a device using a different connectivity. The exception is twinaxial console which does not use the same type of 5250 emulation and thus cannot recover the console without data loss.

When the takeover option is enabled and the device is properly connected, each console capable device running 5250 emulation, regardless of connectivity, will be presented a screen of data regardless of whether or not it is the active console. In V5R3 and later releases, more than one device will have data on the screen after the console has been established. There will be no more blank console screens showing `Disconnected` when initially connecting a device. The new function now allows the job at the console to be transferred to another device without causing loss of data.

This function is accomplished by suspending the data stream to a console that loses a connection or is being taken over, save further data and then send that data to the next device to become the console, even if the device is the same former console. Recoverability is essentially taking over the console from the same or different qualified device regardless of what the former console was doing.

The following information pertains to independent and primary partitions:

- Console supporting hardware may be required to be located in specific slot locations, based on model.
- Multiple IOPs capable of supporting a console workstation can interfere with the selection of the desired LAN adapter. Consider the following:
  - Having a second IOP on the bus before your intended console adapter card, when the first IOP contains a twinaxial adapter card, may fail to provide a LAN-connected console. For example, a model 890 uses eligible card locations C04, and C06 through C10 and if an IOP were placed in C08 and a twinaxial adapter preceded this IOP on the bus then the LAN adapter card located at C09 or C10 will fail to provide a LAN-connected console. The LAN adapter card must be in a location preceding the second IOP, such as C06 or C07.
  - Typically, the card location used for Operations Console directly attached configurations, commonly referred to as the Electronic Customer Support (ECS) slot, is located close to the beginning of the bus. When the card location is a low number, for example C02, then C03 is further from the beginning of the bus than C02. When the card location is a high number, for example C07, then C06 is further from the beginning of the bus than C07. There may be exceptions to this numbering scheme based on specific models and expansion units. Contact your service representative if you have questions about the placement of the ECS.

The following information pertains to a multi-partitioned environment:

- If you plan to use Operations Console as your primary console or as a backup console, you must tag the IOP to support the primary console and Electronic Customer Support (slot), even if you do not plan to use Electronic Customer Support. For example, if you are planning to use Operations Console on a direct connection, you must tag an IOP with the console tag and the ECS tag. These steps are also necessary if you are planning to use Operations Console with a LAN connection.
- When more than one console adapter is available for a single IOP, the adapter with the lowest bus address will be chosen for use by Operations Console. For example, you tag an IOP that has two LAN

adapters installed. The system will use the first adapter found on the bus. However, during an IPL the first adapter may not be ready in time and the system could select the second adapter. This could prevent the console from starting immediately or you might not be able to use that resource for your intended purposes. It is recommended that you install only one console-capable adapter that matches your configurations for a single IOP. This situation also will affect asynchronous adapters used by a local console directly attached to the system.

- The term *alternate console* is referring to a twinaxial console type located in another IOP tagged as the alternate console. Operations Console and HMC type consoles do not use resources tagged as the alternate console.

Note: Tagging the same IOP as both the primary console and the alternate console may result in the inability to select a console. If you have a twinaxial adapter in the same IOP as your primary console's adapter, consider the twinaxial adapter to be a backup console, not an alternate console. You only have to change the console type to take advantage of the twinaxial adapter for the console.

Related reference

"Takeover or recovery of an Operations Console connection" on page 60
You can use these functions to take control of another console device.

"Planning considerations for your backup console"
Most system plans include a level of redundancy to allow for the event of hardware failures; however, many people do not consider the console in their plans. To recover quickly from an unexpected loss of your console, you need to plan for a backup console.

Planning considerations for your backup console

Most system plans include a level of redundancy to allow for the event of hardware failures; however, many people do not consider the console in their plans. To recover quickly from an unexpected loss of your console, you need to plan for a backup console.

Considerations for a backup console

- The adapter location is fixed, or at least limited, for independent systems or primary partitions. Based on your system's hardware requirements, you might have limited choices of console types. Try to accommodate at least one additional console type, if possible.
- Consider using the take over and recovery option as part of your backup console strategy. However, the hardware used for the new console type must exist and be available at the time of recovery.
- If you are working in a partitioned environment, consider:
  - In a logical partition environment, the term *alternate console* refers to the twinaxial console type located in another input/output processor (IOP) that is tagged as the alternate console. If a failure of the primary console (twinaxial only) is detected, the system automatically tries the alternate console's IOP. This function gives you another level of protection. Tagging a single IOP as both the primary console and the alternate console can result in errors when selecting a console. Further isolation can be planned by placing the alternate console IOP on a different bus so that failures of the primary console's bus cannot prevent a console from being available.
  - Models 270 and 8xx are tagged for a console type only at the IOP level. Tagging an IOP that has two alike console adapters reporting to it, for example two 2849s or two 2771s, for the same IOP can sometimes make it difficult to determine, in advance, which adapter will be used for the console. When tagging the IOP, be sure that it only has one console-capable adapter per connectivity. For example, only one 2849 and one 2771. Each adapter can support a different console type but only one adapter type should be present. The lowest addressed adapter on the bus is attempted first. But if that adapter is slow in reporting to the system, another adapter might get selected instead, when two adapters of the same connectivity are present. Another example of this might be that the IOP has both a 2838 and a 2849 Ethernet adapter reporting to it. They are different adapters but have the same connectivity for the console.

- Consider a shared resource environment in which you can allocate and deallocate a console supporting IOP to a partition on a part-time basis. Many work environments rarely need a console device on a full-time basis and you can reduce your initial cost of dedicated hardware by implementing this concept.
- If the load source storage device fails and the system recovery includes the use of the IBM distribution Licensed Internal Code media instead of a customer backup, and the system is using Operations Console (LAN), you might have to use another console type for the initial portion of the system recovery.

Configuration types for backup consoles

When planning the configuration of the backup console or consoles remember that recovering from the loss of the console depends on many factors. Some of these factors include, the model and series, the hardware resources available, the previous console type, and the intended console type. Recovery might consist of repairing the currently failed console or temporarily replacing it with another console type. Most changes of a console type can be performed without the need for an IPL but there may be circumstances in which an IPL will still be necessary. When using the console service functions (65+21), console-supporting hardware must be installed and available prior to performing the function. Any partition tagging of resources must also have been done already.

Important: If you plan to use Operations Console local console on a LAN as a backup to another console type, the network adapter must be located in a console designated slot or in a properly tagged IOP. If not previously configured, the BOOTP process is used to configure the system.

Backup console configuration considerations

- If you access your system remotely, consider off-site console capability or another type of connectivity for the console. A local console on a network can be backed up with an additional local console on a network PC. If the network adapter were to fail, consider a local console directly attached to the server as a backup. By changing the console type to a local console directly attached to the server with remote access, you can add the ability for a remote PC to become the console.
- In a logical partition or multiple-system environment, you will most likely be using multiple local consoles on a network (LAN) configuration on a single PC as your primary consoles. Consider additional PCs using this same type configuration. Avoid supporting too many consoles on the same PC if possible. The PC resources can be easily overwhelmed when supporting multiple consoles and remote control panels.
- Consider multiple local console on a network configurations in large environments so that each PC has a core set of console responsibilities and the overlap coverage of backup configurations with each other. For example, if you have a PC that supports 10 local consoles on a network configuration and another PC with the same number of primary consoles for another 10 partitions, instead of backing up each PC with the other's configuration, you add a third PC and spread the 20 consoles out so that two PCs back up a portion of each PC's primary console configurations. Another consideration is a dedicated PC to be the backup of a certain number of consoles, but not connected until necessary.
- When you mostly use consoles on a network, consider setting up a local console directly attached to the server on a PC and place it on a rollaway cart with a console cable. If you have supporting adapters, you can quickly roll the cart with the PC near the system or partition in need of the console. After connecting the cable and changing the console type value, you have a console to replace the currently failed console. This same concept can be implemented for twinaxial workstations just as easily.

Note: If more than one local console on a network is planned, be certain to create additional service tools device IDs on the system before you start configuring the Operations Console PC. Each PC connecting to the same target system or logical partition must have a unique service tools device ID.

In summary, consider incorporating as much redundancy as possible into your console configuration. You can reduce your exposure to a catastrophic console failure by using another method to provide a console in place, or by making compromises and adjustments for the various hardware requirements necessary to overcome the various levels of failures.

For more information on switching between console devices, see the Managing your multiple consoles topic.

Related reference

"Console planning considerations" on page 4
When you plan for Operations Console for one or more of your systems, consider these points.

"Takeover or recovery of an Operations Console connection" on page 60
You can use these functions to take control of another console device.

"Preparation for your network environment" on page 11
To prepare for your network environment, you need to identify and comply with the minimum network configuration required to set up an Operations Console local console on a network (LAN) configuration.

"Management of multiple consoles" on page 58
If you have more than one workstation that is capable of being the console to the same system or partition, there might be more than one way of using those devices as the console, depending on your configuration and circumstances.

"Scenario: Consoles for multiple systems or partitions" on page 10
This scenario discusses a situation in which you want to manage multiple systems or partitions.

"Takeover or recovery of an Operations Console connection" on page 60
You can use these functions to take control of another console device.

"Preparation for your network environment" on page 11
To prepare for your network environment, you need to identify and comply with the minimum network configuration required to set up an Operations Console local console on a network (LAN) configuration.

Scenarios: Selecting your configuration

These scenarios help you decide which configuration works best in your environment.

Use the following scenarios to help assist you in choosing your Operations Console configuration. Keep in mind that these scenarios apply only to nonpartitioned systems.

Scenario: A single console directly attached to the system without remote support:

This scenario discusses a situation in which you might want a single console attached to the system.

Your company owns a System i product, and you want to use a PC to manage your system. You need one console directly connected to the system to physically access the console to manage your system.

For this scenario, you should configure a local console directly attached to the system.

Advantages:

- The administrator will have access to his console in the event of a network failure. With a local console on a network configuration, a network failure will cause you to lose the ability to access your console.
- You can use this PC to become the System i console.
- The console can be securely placed behind locked doors in the system room.

Disadvantages:

- You must be close to the system to manage or access the console.
- A console cable is required.
- This configuration does not support remote connections.
- This configuration does not support a directly connected remote control panel.
- This configuration does not support remote control panel function for logical partitions.
- Only one directly attached configuration is allowed per PC.

Related concepts

"PC preparations for Operations Console" on page 30
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

"Planning considerations for your control panel" on page 24
To make a connection to the control panel, you need to configure a remote control panel (RCP) or a virtual control panel (VCP). All IDs that want access need proper authority.

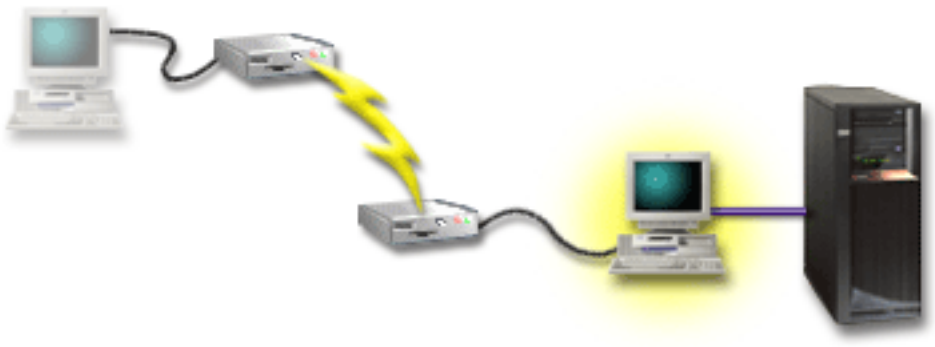
Related reference

"Scenario: A single console directly attached to the system with remote support"
This scenario discusses the ability to dial-in to the console from a remote location.

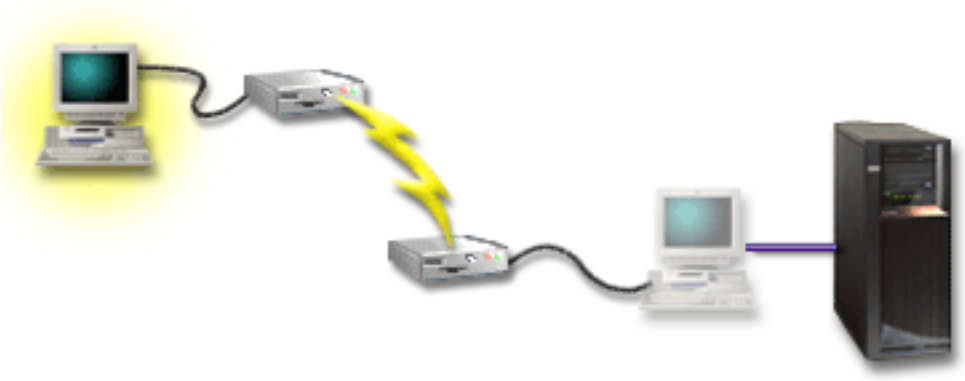
Scenario: A single console directly attached to the system with remote support:

This scenario discusses the ability to dial-in to the console from a remote location.

Your company owns a System i product, and you want to use a PC to manage your system. You need a console connected to this system, which allows you to manage the console from a remote location. Then you can perform an IPL from home over the weekend or check to see if the job you started has completed.



For this scenario, on the PC attached to the system, configure a local console directly attached to the system with remote access allowed.



Then configure a remote console through dial-up on the remote PC.

Advantages:

- The administrator does not have to be near the system to perform console tasks.
- You can use this PC only as the System i console.
- The remote console can gain access to the system with or without operator intervention depending on your configuration.

Disadvantages:

- Only one incoming connection is allowed at a time.
- A console cable is required.
- Only one directly attached configuration is allowed per PC.

Related concepts

"PC preparations for Operations Console" on page 30
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

Related reference

"Scenario: A single console directly attached to the system without remote support" on page 8
This scenario discusses a situation in which you might want a single console attached to the system.

"Operations Console cable requirements" on page 21
You need to meet these cable requirements for supported models, cables and card locations.

Scenario: Consoles for multiple systems or partitions:

This scenario discusses a situation in which you want to manage multiple systems or partitions.

Your company owns a System i product, and you want to use the PC to manage your system. You need to manage multiple systems or partitions from one console. You have a secured network that you can configure your console on.

For this scenario, configure a local console on a network.

Advantages:

- You can configure a single PC to be the console for several different systems or partitions as long as they are connected to the service connection network. There are a maximum of 26 active consoles at a time but you might have a virtually unlimited number of configurations.
- The administrator does not need to be physically near the system to manage the console.
- Security features are available to protect your console connections.
- A local console on a network is the connectivity of choice for partitions in an LPAR environment.
- Multiple PCs can be configured as a console to a system or partition, but only one PC can act as an active console at a time.

Disadvantages:

- No console is available in the event that a network failure takes place unless a backup console is available. Configure a local console directly attached to the server or a twinaxial console for backup.
- Your system will need a separate LAN card to be used by the console or other service tools.

Related concepts

"PC preparations for Operations Console" on page 30
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

"Planning considerations for your backup console" on page 6
Most system plans include a level of redundancy to allow for the event of hardware failures; however, many people do not consider the console in their plans. To recover quickly from an unexpected loss of your console, you need to plan for a backup console.

Related information

Plan for logical partitions

Preparation for your network environment

To prepare for your network environment, you need to identify and comply with the minimum network configuration required to set up an Operations Console local console on a network (LAN) configuration.

Important: You need to install the LAN adapter for Operations Console according to your model.

If your system is new and you chose a local console on a network configuration, the adapter is already allocated for use by the system. The LAN adapter is dedicated for service tools. It is suggested that you restrict LAN topologies for LAN-attached local consoles to a single, physical ring, hub, switch, or router environment. In the event that the local console on a network is used in a larger network topology, it is suggested that you use broadcast (DHCP) packet filtering. This might be as simple as connecting the PC and system using a crossover cable or using an inexpensive hub with only the PC and system attached. When you have only a single PC or a small number of devices connected to the system using a hub, and these devices do not connect to another network or the Internet, you can then use any numeric numbers for addresses, for example, *1.1.1.x* or *10.220.215.x* (where *x* can be 2 through 255, but avoid *x.x.x.1*, which might cause problems in some hubs). However, if you have a network that many users share, or in which the devices are connected to the Internet, then you should consult a network administrator for addresses.

Network security

It is suggested that you treat the console over a LAN connection with the same physical security considerations and controls as a local console directly attached to the system or a twinaxial console. For instance, consider configuring a local console on a network separate from the main network (or the company intranet) and strictly controlling access to the PC that acts as the console.

BOOTstrap Protocol

A local Operations Console on a network uses the BOOTstrap Protocol (BOOTP) to configure the system service IP communications stack. The IP stack configuration plus the system serial number and the partition ID are requested in the Operations Console configuration wizard. The system broadcasts a BOOTP request. The Operations Console PC replies with the information submitted during the configuration wizard. The system then stores and uses the configuration information for the service IP communications stack.

The Operations Console PC must be placed on a network that can be accessed by the system. This can be the same physical network or a network that permits broadcast packets to flow. This is an initial setup requirement; normal Operations Console operation does not require this. It is suggested that this setup occur on the same physical network.

The BOOTP request carries the system serial number and partition ID. The system serial number and partition ID are used to assign the IP configuration information. If you are having problems configuring the service IP communications stack, verify that the Operations Console PC is on the same physical network, and that the system serial number and partition ID are correct in the configuration.

A local console on a network (LAN) uses ports 2323, 3001, and 3002. To use Operations Console in a different physical network the router and firewall must allow IP traffic on these ports.

The success of BOOTP is dependent on the network hardware used to connect the system and the PC. In some cases, you might need a different device to configure a console connection using system service tools (SST). To use BOOTP, the network hardware used must be capable of autonegotiation of speed and duplex when using the 2838 Ethernet Adapter for the Operations Console connection.

Related reference

"Planning considerations for your backup console" on page 6
Most system plans include a level of redundancy to allow for the event of hardware failures; however, many people do not consider the console in their plans. To recover quickly from an unexpected loss of your console, you need to plan for a backup console.

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

Security of your Operations Console configuration

Operations Console security consists of service device authentication, user authentication, data privacy, and data integrity.

An Operations Console local console directly attached to the server has implicit device authentication, data privacy, and data integrity because of its point-to-point connection. User authentication security is required to sign on to the console display.

The following list gives you an overview of your Operations Console LAN security as shown in Figure 1 on page 14.

1. A user enters the correct password.
2. Operations Console sends the service tools device ID (QCONSOLE) and its encrypted password to the system.
3. The system checks the two values. If they match, the system updates both the device and DST with a newly encrypted password.
4. The connection process then validates the service tools user ID and password before sending the system console display to the PC.

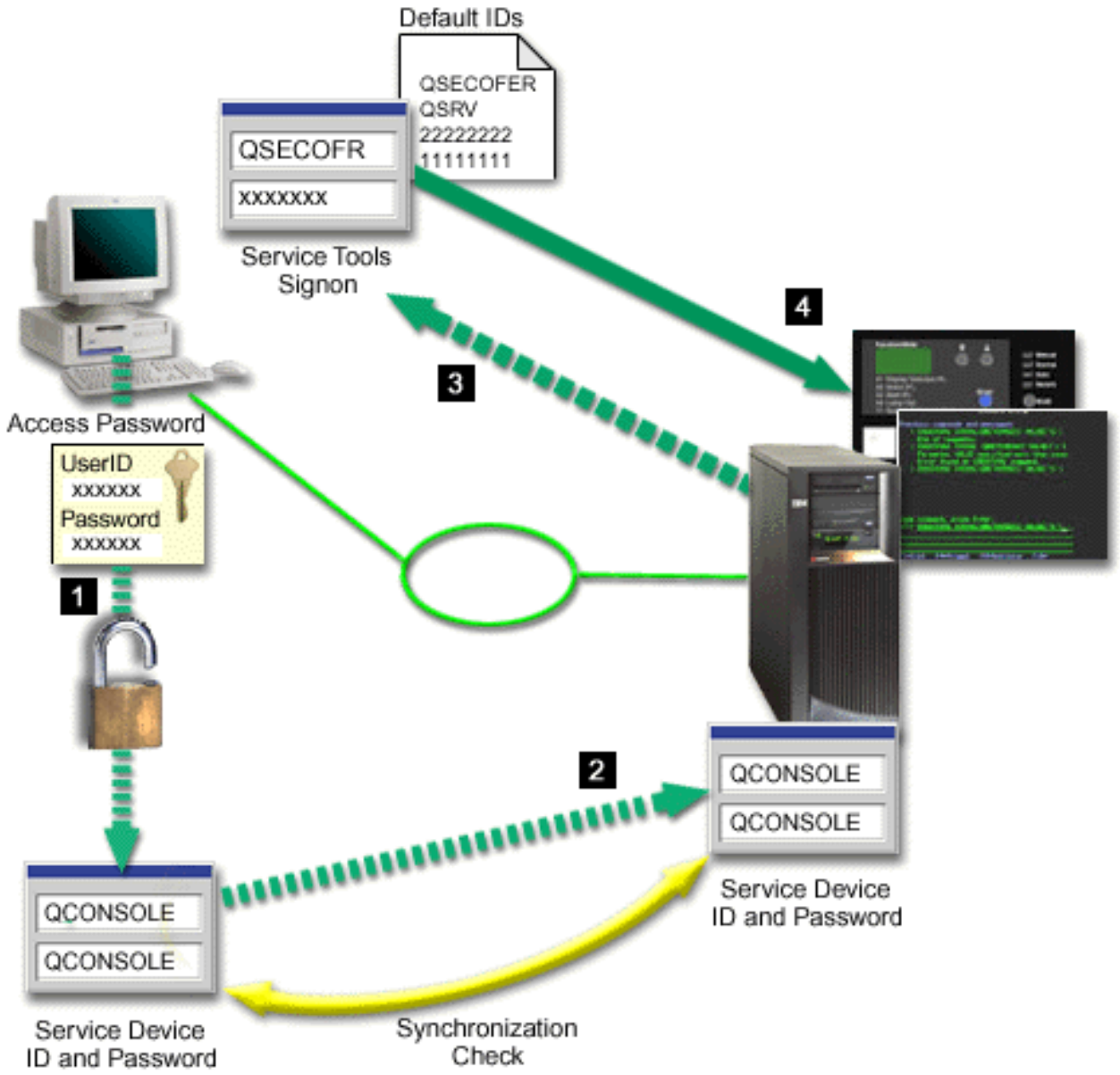


Figure 1. Operations Console LAN security

The System i console security consists of:

Service device authentication
This security assures one physical device is the console. Operations Console local console directly attached to the server is a physical connection similar to a twinaxial console. The serial cable you use for Operations Console using a direct connection may be physically secured similar to a twinaxial connection to control access to the physical console device. Operations Console local console on a network uses a version of Secured Sockets Layer (SSL) that supports device and user authentication, but without using certificates.

Device authentication
The device authentication is based on a service tools device ID. Service tools device IDs are administered in the dedicated service tools (DST) and system service tools (SST). They consist of a service tools device ID and a service tools device ID password. The default service tools device ID is QCONSOLE and the default password is QCONSOLE. An Operations Console local console

on a network encrypts and changes the password during each successful connection. You must use the default password to initially set up your system if you use a local console on a network (LAN).

Important: The device authentication requires a unique service tools device ID for each PC that is configured with a local console on a network (LAN) connection.

When using an Operations Console local console on a network, the configuration wizard adds the necessary information to the PC. The configuration wizard asks for the service tools device ID and an access password. The access password protects the service tools device ID password on the PC.

When establishing a network connection, the Operations Console configuration wizard prompts you for the access password to access the encrypted service tools device ID and password. The user will also be prompted for a valid service tools user ID and password.

Note: When you use the graphical control panel on systems with a keystick on a logical partition, setting the mode to Secure might require you to use the LPAR menu on the primary partition to select another mode.

User authentication
This security provides assurance as to who is using the service device. All problems related to user authentication are the same regardless of console type. For more information, see the Service tools topic.

Data privacy
This security provides confidence that the console data can only be read by the intended recipient. Operations Console local console directly attached to the server uses a physical connection similar to a twinaxial console or secure network connection for LAN connectivity to protect console data. Operations Console using a direct connection has the same data privacy of a twinaxial connection. If the physical connection is secure as discussed under service device authentication, the console data remains protected. To protect the data, ensure only authorized people enter the computer room.

Operations Console local console on a network uses a secure network connection if the appropriate cryptographic products are installed. The console session uses the strongest encryption possible, depending on the cryptographic products installed on the system and the PC running Operations Console. If no cryptographic products are installed, there can be no data encryption.

Data integrity
This security provides confidence that the console data has not changed en route to the recipient. An Operations Console local console directly attached to the system has the same data integrity as a twinaxial connection. If the physical connection is secure, the console data remains protected. An Operations Console local console on a network uses a secure network connection if the appropriate cryptographic products are installed. The console session uses the strongest encryption possible, depending on the cryptographic products installed on the system and the PC running Operations Console. If no cryptographic products are installed, there can be no data encryption.

Data encryption
Enhanced authentication and data encryption provide network security for console procedures. Operations Console local console on a network uses a version of SSL which supports device and user authentication but without using certificates.

Administration

Operations Console administration allows system administrators to control access to console functions, including the remote control panel and virtual control panel. When using Operations Console local

console on a network, device and user authentication are controlled through the service tools device ID.

Important: Consider the following when administering Operations Console local console over a network:

- For more information about service tools user IDs, see the Service tools topic.
- For the remote control panel, mode selections require security authorization for the user that authenticates the connection, such as that provided by QSECOFR. Mode selections include Manual, Normal, Auto, and Secure. Auto and Secure are only available on systems with a keystick. Also, when connecting the remote control panel using a network, the service tools device ID must have authority to the control panel data on the system or on the partition that the remote control panel connects to.
- When a mismatch occurs in the service tools device password between the system and the Operations Console PC, you need to resynchronize the password on both the PC and the system. A mismatch occurs if your PC fails, if you decide to exchange the PC for a different one, or if you upgrade it.
- Because QCONSOLE is a default service tools device ID, if you choose not to use this device ID, it is suggested that you temporarily configure a connection using this ID and successfully connect. Then delete the configuration but do not reset the device ID on the system. This prevents unauthorized access from someone using the known default service tools device ID. If you need to use this device ID later, you can reset it then using the control panel or menus.
- If you implement a network security tool that probes ports for intrusion protection, be aware that Operations Console uses ports 449, 2300, 2301, 2323, 3001, and 3002 for normal operations. In addition, port 2301, which is used for the console on a partition running Linux, is also vulnerable to probes. If your tool were to probe any of these ports, it may cause loss of the console, which might result in an IPL to recover. These ports should be excluded from intrusion protection tests.

Protection tips

When using an Operations Console local console on a network, it is suggested that you complete the following tasks:

1. Create an additional service tools device ID for each PC that will be used as a console with console and control panel attributes.
2. Add one or two additional backup device IDs for use in an emergency.
3. Choose nontrivial access passwords.
4. Protect the Operations Console PC in the same manner you would protect a twinaxial console or an Operations Console with direct connectivity.
5. Change your password for the following DST user IDs: QSECOFR, 22222222, and QSRV.
6. Add backup service tools user IDs with enough authority to enable or disable user and service tools device IDs.

Related reference

"Resynchronizing the PC and service tools device ID password" on page 81
When a mismatch occurs in the service tools device ID password between the system and the Operations Console PC, you need to resynchronize the password by performing recovery steps on both the PC and the system.

Related information

Service tools user IDs and passwords

Preparation for your Operations Console and iSeries Navigator configuration

Both iSeries Navigator and Operations Console can be run on a single PC. Depending on how you have Operations Console connected to your system, these network configuration options are available.

iSeries Navigator is the graphical user interface for managing and administering your system from your Windows desktop. iSeries Navigator makes operation and administration of systems easier and more productive.

Operations Console lets you use a local or remote PC to access and control a System i console, a control panel, or both. Operations Console enables connections or console activities across a local area network (LAN), along with enabling directly cabled connections. A single PC can have multiple connections to multiple systems and can be the console for multiple systems. An example is having a logically partitioned system using the same PC as the console for all partitions. Because each partition is considered a separate system, you need a separate connection to the partition for which you want to use the console. Operations Console allows multiple connections to a single system, but only one PC can have control of the system at a time. Based on the Operation Console connectivity, you can have one of these methods of configuration:

- If the PC uses Operation Console as a local console directly attached to the server, a network connection for iSeries Navigator is required. To complete the iSeries Navigator connection, the system needs a network adapter and a configured i5/OS line description (LIND).

  Operations Console is connected over a serial cable attached to an asynchronous card on the System i platform. iSeries Navigator is connected through a LAN adapter on the System i platform. The PC communicates to Operations Console through its communication port while communicating with iSeries Navigator through the LAN connectivity.

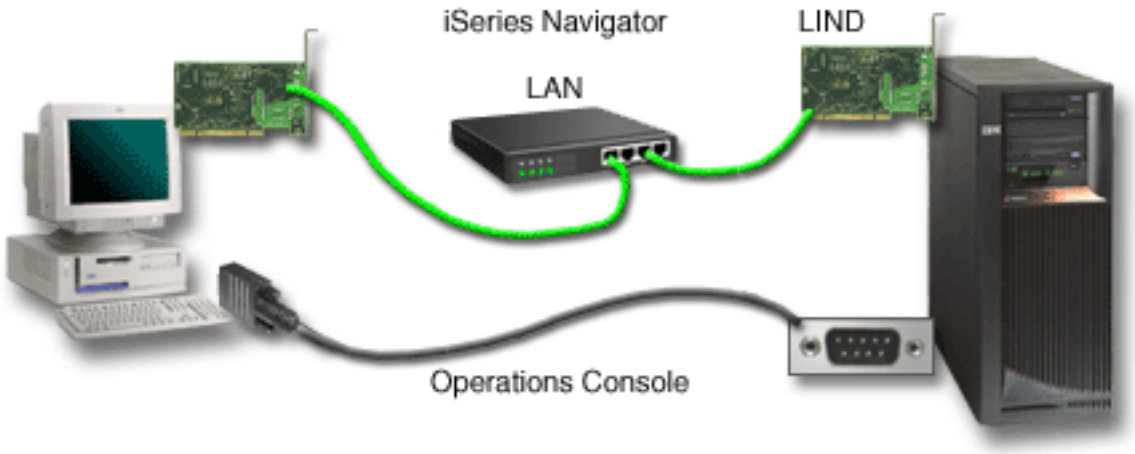


Figure 2. iSeries Navigator and Operations Console configuration over separate connectivity

- The PC used as a local console on a network may require an additional network connection. iSeries Navigator requires a network connection to the network adapter and configured i5/OS line description (LIND). Operation Console will use the service network adapter as defined by the service host name (interface name). If the network adapter and configured i5/OS LIND and the service network adapter as defined by the service host name (interface name) are on the same network, then an additional PC LAN adapter is not needed. This is illustrated in the following figure.

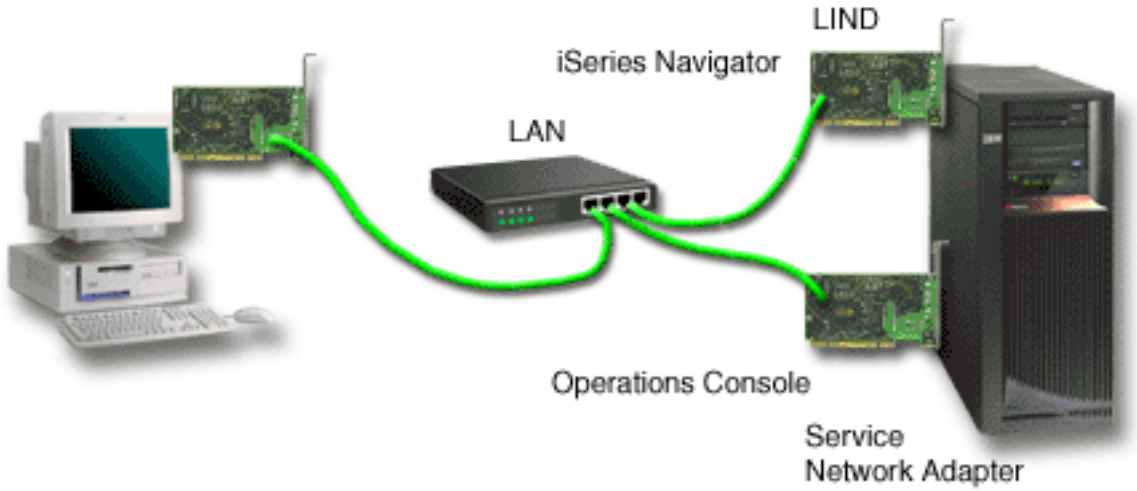


Figure 3. iSeries Navigator and Operations Console configuration on the same network

However, if the network adapter and configured i5/OS LIND and the service network adapter as defined by the service host name (interface name) are on separate networks, then an additional PC LAN adapter is required. This is illustrated in the following figure.

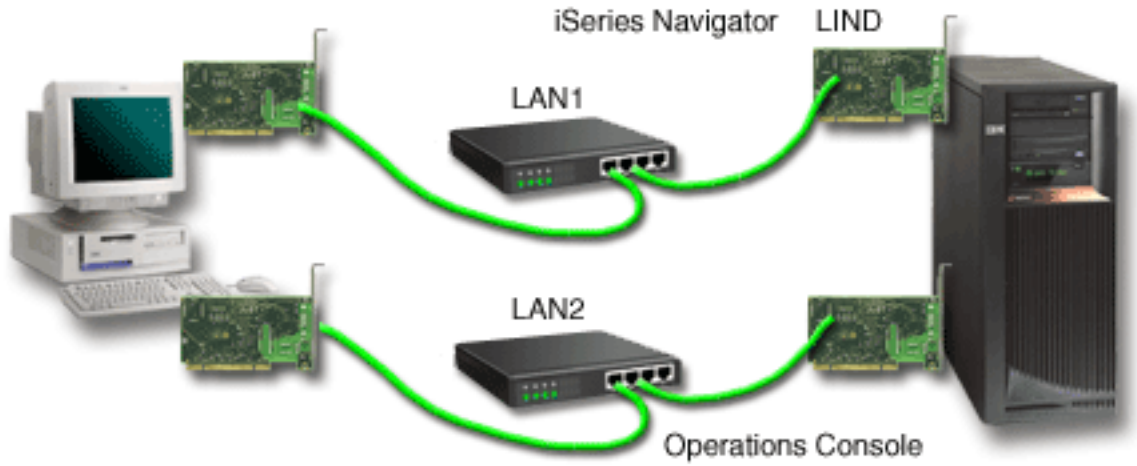


Figure 4. iSeries Navigator and Operations Console configuration on separate networks

Related information

iSeries Navigator

Verification of Operations Console requirements

Before using Operations Console, ensure that you have met all the hardware, software, and cabling requirements for Operations Console.

Operations Console hardware requirements:

You need to meet the PC and System i hardware requirements for an Operations Console configuration.

Table 1. PC requirements - processor and memory

Operating System (1,2)	Operations Console PC
Windows 2000	• Pentium® 500 MHz recommended • 128 MB memory minimum (256 MB recommended)
Windows XP Professional	• Pentium 500 MHz (P6 or equivalent compatible microprocessor) • 256 MB memory minimum

Notes:

1. See the iSeries Access Web site for any updated PC requirements.
2. If your PC has power management capabilities, it can turn the PC off. The PC might reset the communications port when power management is started, which can end any connections already established. Certain types of power management on the PC and in the operating system might cause system reference code (SRC) `0000DDDD` to appear in the System i control panel or remote control panel. This SRC data should be cleared when PC activity resumes.

Important: IBM System i5 and eServer i5 models start counting logical partitions with the number 1 (even if it is the only partition) instead of a 0. iSeries 270 and 8xx models start counting logical partitions with the number 0. For the console to connect properly, your logical partitions must also begin numbering at 1 instead of 0. This is especially true if you rely on the BOOTP process to configure the system with its network data.

If you want to use an Operations Console local console on a network (LAN), you need to install the LAN adapter for Operations Console according to your model. IBM supports a local console on a network (LAN) only on models 270 and 8xx. Table 2 shows the supported cards for LAN connectivity. Table 3 shows the correct location for the LAN card.

Note: Supported cards and locations are only for nonpartitioned systems or primary partitions. For logical partitions in an LPAR environment, any Operations Console-supported adapter can be used.

Important: In case an emergency arises where your LAN connection fails, you need to configure an Operations Console local console directly attached to the system. For instructions, see the Planning considerations for your backup console topic. Table 3 shows the correct location for the directly cabled console.

Table 2. Supported cards for LAN connectivity

Card name or number	Description
2744	PCI 100 Mbps Token ring Adapter
2838	PCI 100/10 Mbps Ethernet IOA
2849	PCI 100/10 Mbps Ethernet IOA
Integrated Ethernet Port	PCI 100/10 Mbps Integrated LAN IOA (model 825 only)
Note: The Integrated Ethernet Port is the only LAN-connectivity for the Operations Console local console on a network option for model 825.	

Table 3. System i requirements - LAN card location

Model	Operations Console (LAN) console card location	Operations Console direct connection (asynchronous) location for the cable
270	C06, second C05	C07

Table 3. System i requirements - LAN card location (continued)

Model	Operations Console (LAN) console card location	Operations Console direct connection (asynchronous) location for the cable
800, 810	C06, second C05	C07
820	C04, second C03, third C11	C06
825	Integrated Ethernet Port, (C03, C02, C01)(1)	C06
830, SB2	C04, second C06, third C10	C02
840, SB3	C04, second C06, third C10	C02
870, 890	C04, C06, C07, C08, C09	C02
Note: [1] These locations will only be available if the Integrated Ethernet Port is not operational.		

To review cable requirements, see the Operations Console cable requirements topic.

Related tasks

"Changing the console from a local console directly attached to a local console on a network (LAN) in a non-partitioned or primary partitioned system" on page 67
To change from an Operations Console with local console directly attached to a local console on a network (LAN), follow these steps on the system, using the existing console.

"Changing the console from a local console directly attached to a local console on a network in a logical partition" on page 67
To change from an Operations Console with a local console directly attached to a local console on a network (LAN), follow these steps on the system using the existing console.

"Changing the console from a twinaxial console to an Operations Console in a non-partitioned or primary partitioned system" on page 73
To change from a twinaxial console to an Operations Console, you must use the existing console to perform these steps on the system.

"Changing the console from a twinaxial console to an Operations Console in a logical partition" on page 74
To change from a twinaxial console to an Operations Console, you must perform these steps on the system using the existing console before turning off the system or performing an initial program load (IPL).

Related reference

"Scenario: Consoles for multiple systems or partitions" on page 10
This scenario discusses a situation in which you want to manage multiple systems or partitions.

"Preparation for your network environment" on page 11
To prepare for your network environment, you need to identify and comply with the minimum network configuration required to set up an Operations Console local console on a network (LAN) configuration.

"Operations Console cable requirements" on page 21
You need to meet these cable requirements for supported models, cables and card locations.

"Operations Console software requirements" on page 21
You need to meet these software requirements for working with Operations Console.

"Changing from a local console directly attached to a local console on a network (LAN)" on page 66
To change from an Operations Console with a local console directly attached to a local console on a network (LAN), you must change settings on both the PC and the system.

"Changing from a twinaxial console to an Operations Console" on page 73
To change from a twinaxial console to an Operations Console, you need to perform a set of steps on both the PC and the system.

"Changing from an Operations Console to a twinaxial console" on page 76
To change from an Operations Console to a twinaxial console, you must perform steps on the system and, optionally, on the PC.

"Planning considerations for your backup console" on page 6
Most system plans include a level of redundancy to allow for the event of hardware failures; however, many people do not consider the console in their plans. To recover quickly from an unexpected loss of your console, you need to plan for a backup console.

Related information

iSeries Access Web site

Operations Console software requirements:

You need to meet these software requirements for working with Operations Console.

Before you continue, make sure that you have satisfied the Operations Console hardware requirements according to your intended configuration. Operations Console is supported on Windows 2000 Professional, and Windows XP Professional.

The iSeries Access for Windows versions, for both the local console and the remote console, must be at the same level for proper operation of Operations Console.

PC5250 or IBM Personal Communications V5.8 (or V5.7 with CSD 1) needs to be installed for the console only. It is not required for remote control panel only configurations.

Note: If you run any software that enables SOCKS on your PC (the PC accesses the Internet through a firewall, such as Microsoft® Proxy Client, Hummingbird® SOCKS Client, NEC SOCKS 5, or others), you cannot route the subnet for 192.168.0.0 to the firewall. Operations Console uses addresses in the range of 192.168.0.0 to 192.168.0.255. Incorrect routing causes Operations Console to fail. Check your SOCKS configuration and make sure that the entry is:

```
Direct    192.168.0.0    255.255.255.0
```

Data encryption for a local console on a network

To use a local console on a network, you are strongly encouraged to install cryptographic products. This support may be a separate product or it may be available from another source. Use the strongest encryption available for the best security.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

Operations Console cable requirements:

You need to meet these cable requirements for supported models, cables and card locations.

Depending on your configuration, you need to install a cable or card on the system. To connect your local console directly attached to the system, you must use the correct cables. To connect a local console on a network, you need a LAN adapter.

Important: Supported cards and locations are only for nonpartitioned systems or primary partitions. Logical partitions can support additional adapters, especially in migration expansion units, based on the expansion unit's capability.

This table lists the Operations Console cards and cables that you need to have available for your setup.

Table 4. Operations Console cards and cables

Model	Feature code (card)	Part number (cable)
9406 270, 8xx	2742, 2745, 2771, 2793	97H7557

| The parallel cable attached RCP is no longer supported.

This table lists the adapter location for each model. You need an adapter if you are configuring a local console on a network.

Table 5. Card location

Model	Operations Console direct connection (asynchronous) card location for the cable	Operations Console (LAN) console card location
270	C07	C06, second C05
800, 810	C07	C06, second C05
820	C06	C04, second C03, third C11
825	C06	Integrated Ethernet Port, (C03, C02, C01 [(1)])
830, SB2	C02	C04, second C06, third C10
840, SB3	C02	C04, second C06, third C10
870, 890	C02	C04, C06, C07, C08, C09,
Note: [1] These locations will only be available if the Integrated Ethernet Port is not operational.		

Notes:

1. If you are currently using electronic customer support, you must move the electronic customer support cabling to another communications port before trying to install Operations Console directly attached. You might need to reassign your ECS resources.
2. The Console table only pertains to the primary or first partition. Any supported adapter might be used in a logical partition. There are cases where the multifunction IOP (MFIOP) might not support certain input/output adapter (IOA) types in a logical partition. When in doubt, contact your service representative.

Related reference

"Scenario: A single console directly attached to the system with remote support" on page 9
This scenario discusses the ability to dial-in to the console from a remote location.

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

"Installing an Operations Console cable" on page 39
You need to install an Operations Console cable when your configurations have a local console that is directly attached to the system or a local console that is directly attached with remote access allowed.

Verification of available communications port:

For the configuration wizard to configure Operations Console successfully, you need to verify that you have an available communications port.

You will need a connector for a communications interface such as a serial port. Operations Console supports serial COM ports 1-9 and LPT port 1. One COM port is required for system console support and one LPT port is required for remote control panel support.

Note: Operations Console does not use any embedded serial ports located on the system.

To check that you have an available communication port, check the documentation for your PC or with the PC manufacturer to verify you have the necessary communications port or ports. When you configure Operations Console, the wizard will search for a port for the console.

The use of a Universal Serial Bus (USB) to serial port adapter support has been added to Operations Console. The adapter will be placed at the PC end of the console serial cable and connect to the PC's USB port. When installing the USB adapter, follow the manufacturer's instructions, the operating system will assign a serial port to that adapter, COM 4, for example. This adapter will be used exclusively for the console. As above, Operations Console supports serial COM ports 1-9.

Any adapter should work but IBM can not guarantee every adapter to work correctly in every PC environment. Should a failure occur, you can contact the manufacturer of the adapter, the manufacturer of the PC, your hardware service provider, or you can try another adapter.

Restrictions on use

The adapter must plug directly into a USB connector on the PC. Neither the use of a USB hub to share connections nor the use of USB extension cables is supported, however these devices may function correctly in some situations.

Planning considerations for your Operations Console installation or upgrade

To plan for your Operations Console installation or upgrade, you need to know this information.

If you are upgrading to V5R4 and you want to replace an existing console with Operations Console, upgrade the system before migrating the console. This will prevent any conflict between the existing console and the Operations Console.

Prerequisite information for Operations Console users upgrading to or installing V5R4

You must comply with the following before upgrading or installing your software (i5/OS, Licensed Internal Code) to V5R4:

1. If your system has a 2771 adapter card in the processing unit and you plan to use Operations Console as either your primary console or as a backup console, it must be installed in the location designated by model for cable connections based on the following table, prior to the upgrade or installation. Each model has a different preferred location:

Model	Operations Console asynchronous card location for the cable
270	C07
800, 810	C07
820	C06
825	C06
830, SB2	C02
840, SB3	C02
870, 890	C02

2. When you receive the i5/OS release upgrade, all of the user IDs included with the operating system are expired, except for 11111111 (eight 1's). For all upgrades and installations, you need to establish a connection between the System i platform and Operations Console using the service tools user ID of

11111111. This prevents any failed re-authentication of the client connection to the system caused by expired user IDs. This is especially important for automated installations and upgrades.

3. It is recommended that you update iSeries Access for Windows to V5R4 before you upgrade the i5/OS operating system. For more information about installing iSeries Access for Windows, refer to the Install iSeries Access for Windows topic.

Note: Failure to comply with the above actions may prevent the console from working correctly during the upgrade or installation.

Important: During a manual IPL of the system and if no console has been specified before, you receive two additional displays to confirm the setting of the console type. The first requires that you accept your current console type, and the second shows that a value did not previously exist (a zero is present for the old value) and the new value is shown. Press Enter to exit and set the console type automatically. The IPL then continues to the IPL or Install the System display. This condition is most likely to occur during the installation of a new partition, but it can happen on your first manual IPL, for example, during the A-mode IPL following the restore of Licensed Internal Code, or during the upgrade or installation when a console value of zero is found.

Migration to Operations Console before your system upgrade

If you are migrating from a different console type to Operations Console on your new system, it is important that you configure your new Operations Console PC before beginning the upgrade. The Operations Console features that match the connectivity you plan to use should be specified as part of the order for your new system. In this way, at the point in the upgrade instructions where console functions are required on the new system, you can perform them on your new Operations Console device.

Also, when migrating a former load source device that was used with Operations Console local console on a network configuration, and this load source device is to become a load source device in a new partition, the LAN adapter must be deallocated before removing the device from the old partition and installing it in the new partition.

Related tasks

"Installing iSeries Access for Windows" on page 33
Before you use Operations Console, you must install iSeries Access for Windows.

"Deallocating or moving the LAN adapter card from use by Operations Console" on page 86
During a migration, you might need to deallocate the LAN card from use by Operations Console. You need to deallocate the LAN card if you are not planning on using an Operations Console local console on a network configuration or the service tools server.

Related reference

"Installing an Operations Console cable" on page 39
You need to install an Operations Console cable when your configurations have a local console that is directly attached to the system or a local console that is directly attached with remote access allowed.

Related information

Upgrade your iSeries

Install, upgrade, or delete i5/OS and related software

Planning considerations for your control panel

To make a connection to the control panel, you need to configure a remote control panel (RCP) or a virtual control panel (VCP). All IDs that want access need proper authority.

Both RCP and VCP are graphical interfaces to the control panel. The remote control panel allows you to perform most of the control panel functions from a local or a remote location. The virtual control panel allows you to perform most of the control panel functions from a local location only. By default, user-created user IDs will have these permissions.

The user must be granted access to a partition's remote control panel and functions to use the remote control panel or virtual control panel. If a local console on a network is being used, then the service tools device ID must also be granted access to that partition's remote control panel to use this feature.

Users and service tools device IDs default values will automatically grant access to the remote control panel for the partition but can be revoked by an administrator for the user ID, device ID, or both. The user that authenticates a connection must also have authority to the respective partition's keylock to change the mode.

Use these links to review your control panel options, see comparisons of the control panels, and find setup instructions:

- To review your control panel options, see comparisons, and find setup instructions in the Control Panel topic.
- To solve problems with the remote control panel or the virtual control panel, see the Troubleshoot remote control panel and virtual control panel problems topic.

Related reference

"Scenario: A single console directly attached to the system without remote support" on page 8
This scenario discusses a situation in which you might want a single console attached to the system.

"Troubleshooting remote control panel and virtual control panel problems" on page 108
When setting up your initial connection, you might encounter problems accessing your control panels.

Related information

Control Panel

Remote control panel

A remote control panel (RCP) connects to the system through a local area network (LAN). With RCP, you can perform most of the control panel functions from a local or a remote location.

- The local console on a network will select the remote control panel by default. Use **Properties** to deselect the function if you do not want to use the remote control panel.
- A remote control panel that is directly connected, using parallel cable, is no longer supported.
- A virtual control panel (VCP) requires the console to be directly connected by a serial cable. The console must be connected to use the control panel functions. The VCP cannot turn on the system unless the connection is to a primary partition and the primary partition is active. The VCP also requires a service tools device ID on the system.
- LAN configurations to the primary will, by default, configure remote control panels for each logical partition to which the device ID is authorized.
  - The remote control panels for the logical partitions have the same functions available as those provided by the LPAR menu. This includes power-on, as long as the primary stays operational.
- LAN configurations to logical partitions will initially have a remote control panel but it has less function than one directly connected to the primary. For example, it would not be able to turn on the logical partition.
  - To obtain the same functions as those associated to the primary, create a separate configuration for the remote control panel and specify the primary's service host name (interface name). However, this might require another service tools device ID.
- Any configuration where the device ID is not authorized will be greyed out or missing.
  - Greyed out after the first connection if it was selected but not authorized.
  - Missing after the first connection if it was not selected and was not authorized.

  Once authorized it will reappear in **Properties**, on the next connect.

Virtual control panel

A virtual control panel (VCP) connects to the system through a serial cable. With VCP, you can perform most of the control panel functions from a local location only.

VCP uses the serial cable and the connection of a directly cabled console. There is no requirement for network adapters on the PC or system with VCP. You must, however, create a configuration that uses the network path. You must also have an unused service tools device ID available for the VCP connection. If your console uses the network connectivity already, you need to use the remote control panel option available for that configuration rather than VCP.

The VCP allows nearly all the same functions as the RCP. The graphical user interface is the same for the VCP as it is for the RCP - only the connectivity is different. Because of the connectivity differences, the VCP cannot, for example, be used to turn on a system or a partition. The VCP function can work with the V5R2, or later, version of iSeries Access that communicates to a V5R2, or later, release of the System i product.

The VCP uses a TCP/IP connection on the Operations Console cable. You have to have a directly-cabled console configured and connected in order to use the VCP. The VCP can not be used to replace a parallel-connected RCP-only configuration. The VCP will require an additional configuration.

Important: It is recommended that you install the latest service pack for the client. The latest service pack can be found at the iSeries Access Service Packs Web site.

Related reference

"Troubleshooting remote control panel and virtual control panel problems" on page 108
When setting up your initial connection, you might encounter problems accessing your control panels.

Related information

iSeries Access Service Packs Web site

Limitations of the virtual control panel:

Before you install and use a virtual control panel (VCP), consider these features and limitations.

- The VCP is only available while the console is connected.
- You must remove the parallel remote control panel cable, if installed, before configuring the VCP connection.
- A unique service tools device ID must exist for each VCP configuration.

  For example, you have connected a PC named DIRECT to SERVER1 using a direct cable and you want to configure a VCP. If no Operations Console (LAN) configuration exists to this server then the service tools device ID QCONSOLE has not been used. Therefore, you can specify QCONSOLE when you configure the VCP.

  Another example would involve a cabled console called DIRECT that is a backup for LAN-connected Operations Console PCs named LAN1 and LAN2. In this example LAN1 used the service tools device ID QCONSOLE during setup and LAN2 used a user-created service tools device ID of QCONSOLE2 during its setup. For the intended VCP configuration you must create another service tools device ID, such as QCONSOLE3 to be specified when you configure the VCP.
- You cannot use or reuse an existing network name when you create the additional VCP configuration. For example, if you have a configuration named SERVER1, you cannot name the VCP SERVER1. Also, if the intended VCP-capable PC is on a network, you cannot use any name that already exists on that network.
- All VCP and remote control panels (RCPs) are active at the same time.

  If you have multiple PCs (LAN connected) that can become the console, one at a time, and those configurations also use the remote control panel functions, all active RCPs can control the server. Use care when working with control panel functions when multiple PCs have access to the functions.

- The use of a virtual control panel at a remote console is not supported.
- An alternative for powering on the system at a later time, instead of using a cabled remote control panel, can be provided using the IPL scheduling function in Operational Assistant, available in i5/OS, by pressing the Attention key. You can also use the i5/OS command GO POWER and select the option **Change power on and off schedule**. Also, LAN connected configurations connecting directly to a primary partition will provide the ability to turn on a logical partition as long as the primary partition remains active.
- The hosts file on the PC may need manual cleanup.

  Each time you create a network configuration on the PC, data is saved in a file called hosts. This file may be used each time the PC attempts to connect to the network. Each entry is unique to any others by the connection name. Currently, if you delete a VCP configuration, the corresponding hosts entry is not deleted. You must manually delete the appropriate line from this text-based file using any text editor.
- If you have a server model that uses the keystick, the mode button will work with the same functions as the physical control panel when the keystick is inserted.
- The service tools user ID used to authenticate the connection must have the **partition remote panel key** privilege to use the mode function provided by the VCP. Service tools user IDs QSECOFR, QSRV, 22222222, or 11111111 already have this permission by default.

  Note: Systems with a keystick require the keystick to be inserted before the user is eligible to use the mode button. For example, the user has the remote panel key privilege but will not have the mode function available until the keystick is present. For systems without the keystick, the user ID being used would only require the remote panel key privilege.

  Related tasks

  "Installing the virtual control panel"
  Follow these steps to install the virtual control panel.

Installing the virtual control panel:

Follow these steps to install the virtual control panel.

Related reference

"Limitations of the virtual control panel" on page 26
Before you install and use a virtual control panel (VCP), consider these features and limitations.

Creating a service tools device ID using an existing console:

The virtual control panel (VCP) requires an available, unused service tools device ID. If the server does not use Operations Console (LAN) for the console type, you can use the existing service tools device ID of QCONSOLE. If you know that Operations Console (LAN) is not being used you may skip to the section below to create a service tools device ID. To check the current console type setting, do the following:

Note: This work can also be performed using SST. Use the "Work with Service Tools User IDs and Devices" option on the System Service Tools (SST) main menu and skip the step "Select System Devices".

1. Access Dedicated Service Tools (DST).
2. Select **Work with DST environment → System devices → Select Console**.
3. The value in the input field is your current console type setting. If the value is not a 3 then the QCONSOLE device ID is probably available for use with the VCP configuration.
4. Press F3 until you are back to the DST main menu.

Creating a service tools device ID:

To create a service tools device ID follow these steps:

1. Access Dedicated Service Tools (DST).
2. Select **Work with DST environment → Service tools device IDs**.

   Note: By default, the Service tools device IDs option is not available from SST. If you receive the message **The user can not perform the option selected** it indicates that the option has not been made available. The unlock method can only be performed in DST.

   To unlock this option for use in SST, do the following:

   a. Access Dedicated Service Tools (DST).
   b. Select **Start a service tool → Display/Alter/Dump → Display/Alter storage → Licensed Internal Code (LIC) data → Advanced analysis**. (You need to page down to see this option.)
   c. Page down until you find the **FLIGHTLOG** option. Then, place a 1 next to the option and press Enter. You should be on the Specify Advanced Analysis Options window. The command should show as FLIGHTLOG.
   d. Enter the option `SEC UNLOCKDEVID`.

      Note: If you want to secure this option later use the option `SEC LOCKDEVID`.
3. Enter a 1 next to the **Device ID** field. Then enter a name to call the VCP's device ID and press Enter.
4. Optionally, enter a description. Then press Enter.
5. You have now created a device ID for the VCP connection from one PC.
6. You can check the attributes for the device ID by selecting option 7 (Change attributes). By default, the console and partition remote panel for partition 0 (current partition) will be granted.
7. Use PF3 to go back to the DST main menu.

Checking user ID for permissions:

If you are using a service tools user ID other than **QSECOFR, QSRV, 22222222,** or **11111111** for use with the VCP, you have to set the service tools user privileges for **Partition remote panel key** to allow access to the mode function. To verify or set this service tools user privilege, do the following:

1. Go to the DST main menu.
2. Select **Work with DST environment → Service tools user IDs**.
3. Move the cursor to the user you want to verify or set the privileges for and place a 7 on the same line and press Enter.
4. You only have to verify or set the privilege for the **Partition remote panel key** entry, which would be the partition currently being used. Place a 2 on the line for the partition, and press Enter to grant permission to the mode functions.

   Note: Systems with a keystick require the keystick to be inserted before the user is eligible to use the mode button. For example, the user has the remote panel key privilege but will not have the mode function available until the keystick is present. For systems without the keystick, only the user ID remote panel key privilege is necessary.
5. You can now exit back to the DST main menu. Additionally, you can exit DST or IPL depending on how you entered DST.

Changing the current configuration to console only:

If your current Operations Console configured connection includes the remote control panel, use the following steps to configure the connection for just the console. If the console is currently the only function being provided, skip this section and continue with next section.

1. To remove the remote control panel from the configuration, the connection status must be **Disconnected**. To disconnect the configuration, follow these steps:

a. If your local console is running in unattended mode and you have not requested control, do the following to get system control:
   1) Select the configuration name (under **iSeries Connection**). This is the name that Operations Console uses to refer to a specific system.
   2) From the **Connection** menu, select **Request Control**.
b. If the **Service Device Sign-on** window appears, select **Cancel**.
c. Select the configuration name (under **iSeries Connection**). This is the name that Operations Console uses to refer to a specific system.
d. From the **Connection** menu, select **Disconnect**. The connection status shows **Disconnecting** until it completes with a status of **Disconnected**.

2. Select the configuration name that you want to change.
3. From the **Connection** menu, select **Properties**.
4. Select the **Configuration** tab.
5. Remove the check from the **Remote Control Panel** option.
6. Select **OK**.

Creating a new configuration for the virtual control panel:

Use the following instructions to create a new connection configuration specifically for the virtual control panel (VCP):

1. From the **Connection** menu, select **New Connection**.
2. Select **Next**. If the window asking about prerequisites appears, select **Yes**.
3. Leave the option **Local Area Network (LAN)** selected and click **Next**.
4. Enter a name to refer to your VCP connection and select the partition the VCP will control, then click **Next**.

   Notes:
   - If the PC you are working with is connected to a network, do not use a name that can be found on that network.
   - When setting up VCP in System i environment, there is no partition 0.

5. If the **Service TCP/IP Address** field contains a value, you will have to use **Back** and enter another name. The name you used was found on your network or in the **hosts** file. If no TCP/IP address is listed, enter **192.168.0.2**.

   Note: In some cases, the address **192.168.0.n** may have been previously used for something other than Operations Console. In those cases the user may have had to use a different base address for Operations Console such as **192.168.1.n.** If so, use the base address currently assigned to Operations Console, but make the last value a **2**. For example, use **192.168.1.2**. To check the current base address, use **regedit** (or other registry editing program) and navigate to:

   HKEY_LOCAL_MACHINE/Software/IBM/Client Access/CurrentVersion/AS400 Operations Console/LCS/HKEY_LOCAL_MACHINE/Software/IBM/Client Access/CurrentVersion/AS400 Operations Console/LCS/

   Expand LCS and select the appropriate configuration. Check the key **IP Address**. Use the IP address reported on your PC to validate the VCP address.
6. Enter the value of **0.0.0.0** in the **Service gateway address 1** field. You are not required to enter anything in the **Service gateway address 2** field.
7. Enter a serial number in the **iSeries serial number** field. This does **not** have to be the real system serial number. Click **Next**.

8. Enter the name of the device ID you will be using for the VCP connection authentication. By default, you can use QCONSOLE if it hasn't been used. Otherwise, if you created a specific device ID, enter the name you assigned it during the creation process. Then click **Next**.
9. Enter a password and enter it a second time to confirm it. This password is only used by the PC for the VCP connection and is not known at the system. For example, if you entered **access** as the password, you will use **access** later to sign on. Click **Next**.
10. Click **Finish**.
11. Select the VCP configuration and go into **Properties**. Select the **Configuration** tab and deselect the console option. Then, click **OK** to exit **Properties**.

You have completed the configuration for the VCP connection.

Start a connection for the console (your original connection). Sign on normally, if necessary, and wait for the console window to appear.

Now you can connect the VCP connection.

You will get the **LAN Service Device Sign-on** window with an extra field. The **Access password** field is where you enter the password you chose during the setup wizard. If you remember the example used earlier, the password was `access`. Enter the password you used in the **Specify Access Password** window.

Enter any service tools user ID and password, commonly referred to as the DST user ID and password. Since this is authenticating the connection and not setting up any authorities to the work, there is no difference between using **11111111** and **11111111** or **QSECOFR** and **???????**. If you have previously created additional service tools user IDs, you could use any of those as well.

PC preparations for Operations Console

After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

Related concepts

"Planning considerations for Operations Console" on page 3
Before you begin setting up your Operations Console, determine how to best configure it.

Related reference

"Configuring the PC to use the new console type after changing from a twinaxial console to an Operations Console" on page 76
To change from a twinaxial console to an Operations Console, you must configure the PC to use the new console type.

"Scenario: A single console directly attached to the system without remote support" on page 8
This scenario discusses a situation in which you might want a single console attached to the system.

"Scenario: A single console directly attached to the system with remote support" on page 9
This scenario discusses the ability to dial-in to the console from a remote location.

"Scenario: Consoles for multiple systems or partitions" on page 10
This scenario discusses a situation in which you want to manage multiple systems or partitions.

Completing the setup prerequisite checklist

You need to complete the Operations Console prerequisite checklist for the configuration that you will be installing on your PC.

If you are not sure which configuration you need, see the Planning considerations for Operations Console topic.

Note: If you are working with a printed PDF rather than using the interactive interview, the PDF includes the entire checklist and all of the setup tasks.

Select the configuration you will be installing on your PC:

Related concepts

"Planning considerations for Operations Console" on page 3
Before you begin setting up your Operations Console, determine how to best configure it.

Setting up a local console directly attached to the server

You need to complete the unique setup prerequisites checklist based on the configuration and the operating system you are using.

Select the operating system on which you are installing Operations Console:

Completing prerequisite checklist for Windows 2000: Local console directly attached to the server:

You need to complete this checklist to set up a local console directly attached to the server on Windows 2000.

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Meet Operations Console cable requirements.
__ 4. Verify available communications port.
__ 5. Install iSeries Access for Windows.
__ 6. Apply iSeries Access for Windows service packs.
__ 7. Install Operations Console Connection Modem.
__ 8. Install Operations Console cables.
__ 9. Configure Operations Console on the PC.

Completing prerequisite checklist for Windows XP: Local console directly attached to the server:

You need to complete this checklist to set up a local console directly attached to the server on Windows XP.

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Meet Operations Console cable requirements.
__ 4. Verify available communications port.
__ 5. Install iSeries Access for Windows.
__ 6. Apply iSeries Access for Windows service packs.
__ 7. Install Operations Console Connection Modem.
__ 8. Install Operations Console cables.
__ 9. Configure Operations Console on the PC.

Setting up a local console directly attached to the server with remote access allowed

You need to complete the unique setup prerequisites checklist based on the configuration and the operating system you are using.

Select the operating system on which you are installing Operations Console:

Completing prerequisite checklist for Windows 2000: Local console directly attached to the server with remote access allowed:

You need to complete this checklist to set up a local console directly attached to the server with remote access allowed on Windows 2000.

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Meet Operations Console cable requirements.
__ 4. Verify available communications port.
__ 5. Install iSeries Access for Windows.
__ 6. Apply iSeries Access for Windows service packs.
__ 7. Install Operations Console Connection Modem.
__ 8. Install PC modem.
__ 9. Create and configure incoming connections.
__ 10. Grant remote access.
__ 11. Install Operations Console cables.
__ 12. Configure Operations Console on the PC.

Completing prerequisite checklist for Windows XP: Local console directly attached to the server with remote access allowed:

You need to complete this checklist to set up a local console directly attached to the server with remote access allowed on Windows XP.

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Meet Operations Console cable requirements.
__ 4. Verify available communications port.
__ 5. Install iSeries Access for Windows.
__ 6. Apply iSeries Access for Windows service packs.
__ 7. Install Operations Console Connection Modem.
__ 8. Install PC modem.
__ 9. Create and configure incoming connections.
__ 10. Grant remote access.
__ 11. Install Operations Console cables.
__ 12. Configure Operations Console on the PC.

Setting up a local console on a network

You need to complete the unique setup prerequisites checklist based on the configuration and the operating system you are using.

Select the operating system on which you are installing Operations Console on:

Completing prerequisite checklist for Windows 2000: Local console on a network:

You need to complete this checklist to set up a local console on a network on Windows 2000.

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Install iSeries Access for Windows.
__ 4. Apply iSeries Access for Windows service packs.
__ 5. Configure a service host name (interface name) on the server.
__ 6. Create service tools device IDs on the server.
__ 7. Configure Operations Console on the PC.

Completing prerequisite checklist for Windows XP: Local console on a network:

You need to complete this checklist to set up a local console on a network on Windows XP.

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Install iSeries Access for Windows.
__ 4. Apply iSeries Access for Windows service packs.
__ 5. Configure a service host name (interface name) on the server.
__ 6. Create service tools device IDs on the server.
__ 7. Configure Operations Console on the PC.

Setting up a remote console through dial-up support

You need to complete the unique setup prerequisites checklist based on the configuration and the operating system you are using.

Select the operating system on which you are installing Operations Console:

Completing prerequisite checklist for Windows 2000: Remote console through dial-up support:

You need to complete this checklist to set up a remote console through dial-up on Windows 2000.

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Install iSeries Access for Windows.
__ 4. Apply iSeries Access for Windows service packs.
__ 5. Install PC modem.
__ 6. Configure Operations Console on the PC.

Completing prerequisite checklist for Windows XP: Remote console through dial-up support:

You need to complete this checklist to set up a remote console through dial-up on Windows XP.

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Install iSeries Access for Windows.
__ 4. Apply iSeries Access for Windows service packs.
__ 5. Install PC modem.
__ 6. Configure Operations Console on the PC.

Completing required prerequisite tasks

Before you configure Operations Console, you need to complete each prerequisite task for your configuration and operating system.

Use your checklist that you created that lists the specific tasks that you need to complete. Your checklist lists only the tasks that you need based on your operating system and configuration type. If you have not created a checklist yet, see “PC preparations for Operations Console” on page 30.

View the entire prerequisite checklist:

Installing iSeries Access for Windows

Before you use Operations Console, you must install iSeries Access for Windows.

During the installation of iSeries Access for Windows, you are going to install a 5250 emulator or IBM Personal Communications V5.8 (V5.7 CSD 1 minimum) and Operations Console support. See the iSeries Access Web site for updated PC requirements.

To check whether you have iSeries Access for Windows installed:

1. Click **Start** and select **Settings**.
2. Click **Control Panel**.
3. Double-click **Add/Remove Programs**.
4. Look for IBM iSeries Access for Windows.
5. To close Add/Remove Programs, click **Cancel**.
6. Close the Control Panel.

If you do not have iSeries Access for Windows installed, use the *iSeries Setup and Operations* CD-ROM to install it:

1. Insert the *iSeries Setup and Operations* CD-ROM in the CD-ROM drive.
2. Select the **iSeries Access for Windows** option to start the installation.
3. Wait until the **IBM iSeries Access for Windows** window appears.
4. To continue with the setup program, click **Next** and follow the prompts.

   Refer to the iSeries Access for Windows topic for further installation assistance.
5. If you are installing iSeries Access for Windows for the first time, you have to ensure that you have at least a minimum configuration for running Operations Console. If you are only adding the Operations Console component, add only the components necessary to meet this minimum configuration.
6. To ensure the minimum configuration takes place, select **Custom** or **Full** install and select at least the following components:

   Note: The Operations Console component is not available using the **Typical** or **PC5250 User** options.

   a. **Required Programs**
   b. **5250 Display and Printer Emulator** (if IBM Personal Communications (V5.8 or V5.7 CSD 1 minimum) is not installed)

      You do not need a license to use 5250 Display Emulation just for Operations Console, even though the window says that you do.

      Important: If your Operations Console configuration is going to support only the remote control panel, you do not need to install an emulator.
   c. **Operations Console**.
7. Click **Next** and follow the prompts.
8. Apply the latest service pack (program temporary fix (PTF)) for iSeries Access for Windows.

Related reference

"Planning considerations for your Operations Console installation or upgrade" on page 23
To plan for your Operations Console installation or upgrade, you need to know this information.

"Applying iSeries Access for Windows service packs"
You need to have the latest Service Pack program temporary fix (PTF) for iSeries Access for Windows and the latest level of iSeries Access for Windows on your PC.

Related information

iSeries Access Web site

iSeries Access for Windows

Applying iSeries Access for Windows service packs:

You need to have the latest Service Pack program temporary fix (PTF) for iSeries Access for Windows and the latest level of iSeries Access for Windows on your PC.

Service packs are available in a PC-executable form at the following Web sites:

- The iSeries Access for Windows Service Packs Web site.
- The IBM FTP site: ftp://ftp.software.ibm.com Navigate down to the directory path: as400/products/clientaccess/win32/v5r4m0/servicepack.

Related reference

"Troubleshooting status message" on page 97
If you encounter connection problems when connecting a console, Operations Console provides status messages to assist you in troubleshooting the connections.

Related information

iSeries Access Service Packs Web site

Installing Operations Console connection modem

Depending on your console configuration, you might need to install the Operations Console connection modem.

If you are configuring a local console directly attached to the server or a local console directly attached with remote access allowed, you will need to install the Operations Console connection modem.

Note: The Operations Console connection modem is not a physical modem, but a logical device driver that is included with the Operations Console and allows a local console to connect to a system. When the Operations Console connection modem is present, it is listed as Operations Console connection.

Installing Operations Console connection modem for Windows 2000:

For a local console to communicate with the system, you must install the Operations Console connection modem that is included with Operations Console. Use these instructions only if you are configuring a local console that is directly attached to the system or a local console that is directly attached with remote access allowed.

To install the modem, follow these steps:

1. Click **Start** → **Settings** → **Control Panel.**
2. Double-click **Phone and Modem Options** and click on the **Modem** tab to display the **Install New Modem** panel. If you have other modems installed, the **Modems Properties** panel will display, and you need to click **Add**.
3. Click the **Modems** tab.
4. Click **Add.**
5. Select **Don't detect my modem; I will select it from a list**, and then click **Next**.
6. Click **Have Disk...**

   Note: If you know the full path to the Operations Console Connection driver (cwbopaoc.inf), enter it here. Then, go to step 8. If you do not know the path, continue with step 7.
7. Click **Browse...**

   Navigate to *drive:*\path\Client Access\Aoc\Inf\ cwbopaoc.inf where *drive:* is the drive where iSeries Access for Windows is installed.

   Note: The default installation path C:\Program Files\Ibm\Client Access\Aoc\Inf\cwbopaoc.inf).

   Click **Open**.
8. Click **OK**. **Operations Console Connection** should be listed.
9. Click **Next**.
10. Select the communications port where you are going to install the Operations Console cable (for example, COM1).

11. Click **Next**.
12. If the Digital Signature Not Found window appears, click **Yes**.
13. Click **Finish**. You should be back in the **Modems** tab of the **Phone and Modem Options** folder.
14. Click **OK**.

Installing Operations Console connection modem for Windows XP:

For a local console to communicate with the system, you must install the Operations Console connection modem that is included with Operations Console. Use these instructions only if you are configuring a local console that is directly attached to the system or a local console that is directly attached with remote access allowed.

To install, follow these steps:

1. Click **Start** → **Settings** → **Control Panel.**
2. Double-click **Phone and Modem Options** and click on the **Modem** tab to display the **Install New Modem** panel. If you have other modems installed, the **Modems Properties** panel will display, and you need to click **Add**.
3. Select **Don't detect my modem; I will select it from a list.**
4. Click **Next**.
5. Click **Have Disk...**

   Note: If you know the full path to the Operations Console Connection driver (cwbopaoc.inf), enter it here. Then, go to step 7. If you do not know the path, continue with step 6.
6. Click **Browse...**

   Navigate to *drive:*\path\Client Access\Aoc\Inf\ cwbopaoc.inf where *drive:* is the drive where iSeries Access for Windows is installed.

   Note: The default install path is: C:\Program Files\Ibm\Client Access\Aoc\Inf\cwbopaoc.inf
7. Click **Open**, then click **OK**.
8. Click **Next**.
9. Select the communications port where the Operations Console cable is attached, and click **Next**.
10. If prompted, select **Continue Anyway** to continue the installation.
11. Click **Finish** and then click **OK**.

Installing PC modem

Your PC requires a PC modem.

Installing PC modem for Windows 2000:

To install the PC modem on your system running Windows 2000, follow these steps.

If you are installing a PC modem that requires specific drivers, use the instructions that the modem manufacturer provides. Otherwise, follow these instructions:

1. Click **Start** → **Settings** → **Control Panel** → **Phone and Modem Options**.
2. If you are currently in the **Modems** tab of the **Phone and Modem Options** folder, click **Add** and then click **Next**. Otherwise, if you are at the Install New Modem window, click **Next**. The PC should find the new modem and report its location.
3. When the window shows the modem it found, click **Next** to accept it. The PC will now load the driver code to support it.
4. Click **Finish** to return you to the **Phone and Modem Options** folder.
5. Close the **Phone and Modem Options** folder.

6. If you get a message that indicates that you need to restart the PC before you can use the modem, click **OK**. Then, perform a shutdown and restart your PC. Otherwise, you may be prompted to restart the PC. If that is the case, click **Yes** or **OK** to perform the shutdown.

   Note: If you were not prompted to restart the PC, restart the PC to force a rewrite of changed data.

Installing PC modem for Windows XP:

To install the PC modem on your system running Windows XP, follow these steps.

If you are installing a PC modem that requires specific drivers, use the instructions that the modem manufacturer provides. Otherwise, follow these steps:

1. Click **Start** → **Settings** → **Control Panel** → **Phone and Modem Options**.
2. If you are currently in the **Modems** tab of the **Phone and Modem Options** folder, click **Add** and then click **Next**. Otherwise, if you are at the Install New Modem window, click **Next**. The PC should find the new modem and report its location.
3. When the window shows the modem it found, click **Next** to accept it. The PC will now load the driver code to support it.
4. Click **Finish** to return you to the **Phone and Modem Options** folder.
5. Close the **Phone and Modem Options** folder.
6. If you get a message that indicates that you need to restart the PC before you can use the modem, click **OK**. Then, perform a shutdown and restart your PC. Otherwise, you may be prompted to restart the PC. If that is the case, click **Yes** or **OK** to perform the shutdown.

   Note: If you were not prompted to restart the PC, restart the PC to force a rewrite of changed data.

Granting remote access

You need to grant remote access in order for a remote console to have access to the local console.

Select the following instructions based on your operating system:

Related tasks

"Creating and configuring incoming connections for Windows 2000" on page 38
You need to complete these steps to create and configure incoming connections for Windows 2000.

Granting remote access for Windows 2000:

To grant remote access using the Windows 2000 Incoming Connections, follow these steps.

1. Click **Start**.
2. Select **Settings**.
3. Select **Control Panel**.
4. Select **Network and Dial-up Connections**.

   Note: If Incoming Connections does not exist, you have to install it. To install Incoming Connections, refer to: Create and configure incoming connections .
5. Click **Incoming Connections**.
6. Click the **Users** tab
7. In the **Users allowed to connect** field, select the check box next to the user ID for which you want to grant remote access.

Related tasks

"Creating and configuring incoming connections for Windows 2000" on page 38
You need to complete these steps to create and configure incoming connections for Windows 2000.

Granting remote access for Windows XP:

To grant remote access using Windows XP Incoming Connections Properties, follow these steps.

1. Click **Start**.
2. Select **Settings**.
3. Select **Control Panel**.
4. Select **Network and Dial-up Connections**.

   Note: If Incoming Connections does not exist, you must install it.
5. Click **Incoming Connection Properties**.
6. In the **Users allowed to connect** field, select the check box next to the user ID for which you want to grant remote access.

Related tasks

"Creating and configuring incoming connections for Windows XP" on page 39
You need to complete these steps to create and configure incoming connections for Windows 2000.

Creating and configuring incoming connections

Here is how to create and configure incoming connections for Operations Console.

Creating and configuring incoming connections for Windows 2000:

You need to complete these steps to create and configure incoming connections for Windows 2000.

1. Click **Start** → **Settings** → **Control Panel**.
2. Select **Network and Dial-up Connections**.
3. Click **Make New Connection**. The Welcome to the Network Connection Wizard window appears.
4. Click **Next**.
5. Click **Accept incoming connections**. Then, click **Next**.
6. Select the check box for the PC modem that is going to receive the calls from the remote console.

   Make sure that the Operations Console Connection check box is not selected. If other check boxes are selected, do not change them.

   Then, click **Next**.
7. Click **Do not allow virtual private connections**. Then, click **Next**.

   Note: If you have a virtual private network (VPN), leave this check box unchecked.
8. Select or add any users to dial into the local console. Then, click **Next**.
9. Select the **Internet Protocol (TCP/IP)** check box (if needed). Then, click **Properties**.
10. Make sure that the **Allow callers to access my local area network** check box is selected.
11. If your network uses Dynamic Host Configuration Protocol (DHCP), click **Specify TCP/IP addresses automatically using DHCP**. Then, go to the next step. If your network does not use DHCP, click **Specify TCP/IP addresses**. Then, do the following to specify the addresses:
    a. In the **From** field, type the address `192.168.0.5`
    b. In the **To** field, type the address `192.168.0.24`
    c. The **Total** field shows 20
12. Select the **Allow calling computer to specify its own IP address** check box. Then, click **OK**.
13. Click **Next**.
14. Click **Finish** to save Incoming Connections.

Related tasks

"Granting remote access for Windows 2000" on page 37
To grant remote access using the Windows 2000 Incoming Connections, follow these steps.

Related reference

"Granting remote access" on page 37
You need to grant remote access in order for a remote console to have access to the local console.

Creating and configuring incoming connections for Windows XP:

You need to complete these steps to create and configure incoming connections for Windows 2000.

1. Click **Start** → **Settings** → **Network Connections**.
2. Click **New Connection Wizard**. The Welcome to the Network Connection Wizard window appears.
3. Click **Next**.
4. Click **Set up an advanced connection**. Then, click **Next**.
5. Click **Accept incoming connections**. Then, click **Next**.
6. Select the check box for the PC modem that is going to receive the calls from the remote console.

   Make sure that the Operations Console Connection check box is not selected. If other check boxes are selected, do not change them.

   Then, click **Next**.
7. Click **Do not allow virtual private connections**. Then, click **Next**.

   Note: If you have a virtual private network (VPN), leave this check box unchecked.
8. Select or add any users who are going to dial into the local console. Then, click **Next**.
9. Select the **Internet Protocol (TCP/IP)** check box (if needed). Then, click **Properties**.
10. Make sure that the **Allow callers to access my local area network** check box is selected.
11. If your network uses Dynamic Host Configuration Protocol (DHCP), click **Assign TCP/IP addresses automatically using DHCP**. Then, go to the next step. If your network does not use DHCP, click **Specify TCP/IP addresses**. Then, do the following to specify the addresses:
    a. In the **From** field, type the address `192.168.0.5`
    b. In the **To** field, type the address `192.168.0.24`
    c. The **Total** field shows 20
12. Select the **Allow calling computer to specify its own IP address** check box. Then, click **OK**.
13. Click **Next**.
14. Click **Finish** to save Incoming Connections.

Related tasks

"Granting remote access for Windows XP" on page 38
To grant remote access using Windows XP Incoming Connections Properties, follow these steps.

Installing an Operations Console cable

You need to install an Operations Console cable when your configurations have a local console that is directly attached to the system or a local console that is directly attached with remote access allowed.

| You might need to install or remove the Operations Console cable depending on your system and
| configuration.

If you are changing the console device, the system value QAUTOCFG must be set to on. Use one of the following methods to verify or set this system value:

- Use the WRKSYSVAL QAUTOCFG command.
- During a manual IPL, in the IPL Options window, for **Set major system options**, select **Y**. Then for **Enable automatic configuration**, select **Y**.

Before making changes to the product, be sure to read the information in the Danger Notice.

Important: It is assumed the system is turned off. Do not turn on the system until you are instructed to do so.

Note: You can use the following instructions if you are removing one or more cables from your PC, system, or both.

If you ***have set up*** any personal computers that will be connected to the system unit:

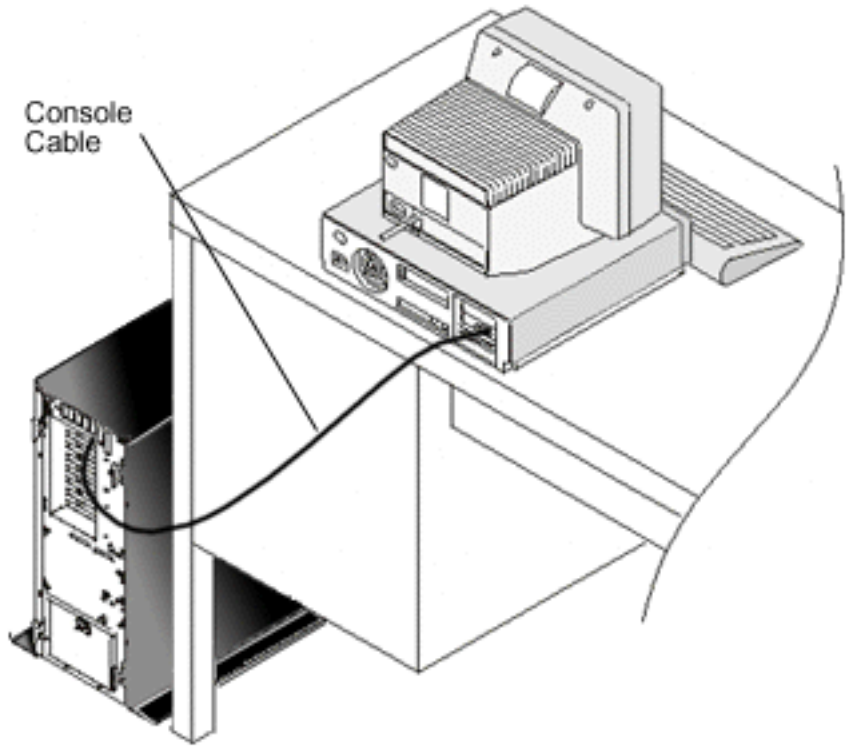
1. Turn off all PCs.
2. Unplug all PC power cords from the electrical outlets.

If you ***have not set up*** the PC that will be used as your system console:

1. Place the PC not more than 6 meters (20 feet) from the system unit.
2. Follow the instructions that came with the PC to set it up.
3. Turn off all PCs.
4. Unplug all PC power cords from the electrical outlets.

You need to install the Operations Console cable if you want to use the console function (5250 emulation or command interface to the system).

This graphic is an overview of your system unit, console (PC) and Operations Console cable. This overview is intended to show you a general setup. The port location and part numbers could be different depending on the system and configuration that you have.



Cabling information is available with instructions and graphics to install your cables for each model. Follow the instructions appropriate to your model.

Related reference

"Operations Console cable requirements" on page 21
You need to meet these cable requirements for supported models, cables and card locations.

"Planning considerations for your Operations Console installation or upgrade" on page 23
To plan for your Operations Console installation or upgrade, you need to know this information.

Cabling a model 830 or a model 840 Operations Console:

These diagrams illustrate how to cable a model 830 or model 840 Operations Console.

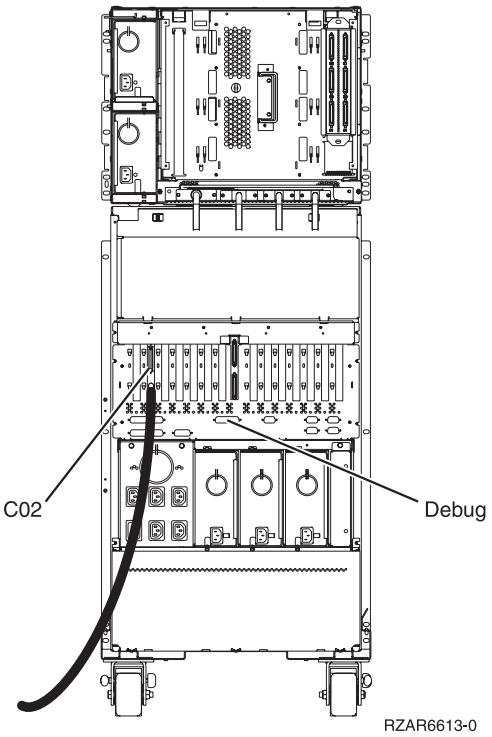


Figure 5. Model 830

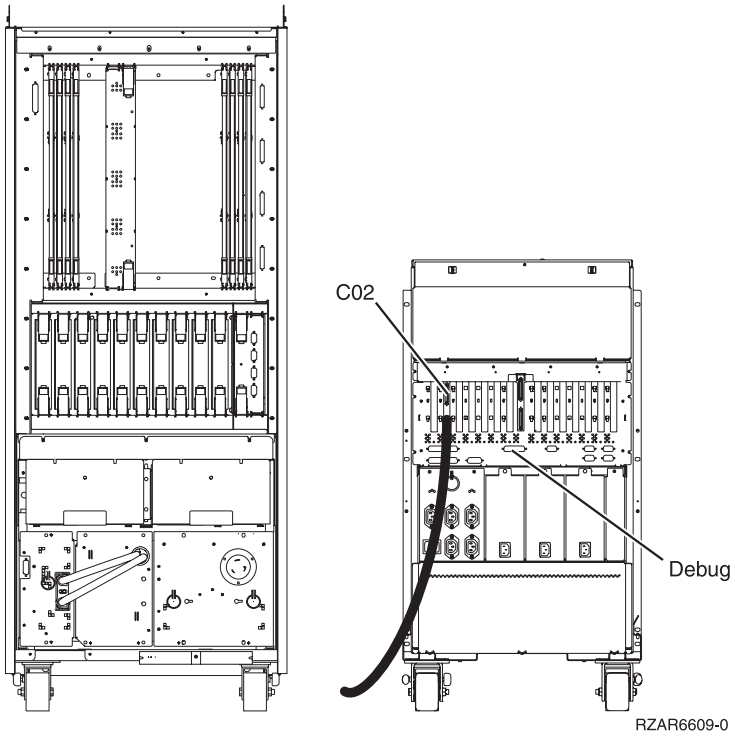


Figure 6. Model 840

Configuring Operations Console on the PC

When you have completed your Operations Console planning and your Set up Operations Console checklist, you are ready to begin the Operations Console configuration wizard.

Note: You must have Administrator rights to create or alter a configuration.

To access the configuration wizard, follow these steps:

1. Click **Start**.
2. Select **Programs**.
3. Select **iSeries Access for Windows**.
4. Select **Operations Console**.

   Note: If Operations Console did not appear, you need to complete an iSeries Access for Windows selective setup. Click **Start** → **Programs** → **IBM iSeries Access for Windows** → **Selective Setup**.

The configuration wizard and Operations Console window starts. Follow the steps through the wizard and enter any required data.

Important: IBM System i and eServer i5 models start counting logical partitions with the number 1 (even if it is the only partition) instead of a 0. iSeries 270 and 8xx models start counting logical partitions with the number 0. For the console to connect properly, your logical partitions must also begin numbering at 1 instead of 0. This is especially true if you rely on the BOOTP process to configure the server with its network data.

Click **Finish** to save the configuration and exit the configuration wizard. It is important that each configured connection has a unique name or unpredictable results may occur.

Note: The configuration wizard automatically configures the connection to use the console and remote control panel for some configurations. If you do not want to use one of these functions, use the connection's **Properties → Configuration tab** to deselect the function you do not want started for this connection. You also can use **Properties** to add any of these functions.

Highlight the connection name then use one of these methods to start your connection.

1. Right-click the connection name and select **Connect**.
2. Click the connection icon in the toolbar.
3. Click the connection drop-down and select **Connect**.

Note: The system needs to be turned on for the console to connect.

View the online help associated with using Operations Console by selecting **Help** from the Operations Console window Help menu.

Related concepts

"Planning considerations for Operations Console" on page 3
Before you begin setting up your Operations Console, determine how to best configure it.

"PC preparations for Operations Console" on page 30
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

Managing Operations Console

You can manage your Operation Console by performing tasks such as changing the console configuration, switching between different console types, and changing passwords.

After you complete your Operations Console planning and set up your connection, you have several options to help you manage your local and remote console connections.

Related concepts

"Planning considerations for Operations Console" on page 3
Before you begin setting up your Operations Console, determine how to best configure it.

"PC preparations for Operations Console" on page 30
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

Managing your console configuration

You can manage your local and remote console configurations with these tasks.

Changing a console configuration

You might need to change an existing local console or remote console to meet your needs while using Operations Console.

To accomplish this, you must be a member of the Administrators group to change or create a local console. If you are changing a system name, you must delete the configuration and re-create it with the new name.

Related tasks

"Deleting a console configuration" on page 44
You might need to delete an existing local console or remote console to meet your specific needs while using Operations Console. You must be a member of the Administrators group to delete a console.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

Changing a local console:

To change an existing local console, follow these steps:

1. If your local console is connected to a system, disconnect it as follows; otherwise, go to step 2:
   a. If the local console does not have control, do the following to request control; otherwise, go to step 1b:
      1) Select the configuration name from the Operations Console window.
      2) From the **Connection** menu, click **Request Control**.
      3) If the Service Device Sign-on window appears, click **Cancel**.
   b. Select the configuration name.
   c. From the **Connection** menu, click **Disconnect**. The connection status shows `Disconnecting`.
   d. Wait until the status shows `Disconnected` at the local console.
2. Select the configuration name.
3. From the **Connection** menu, click **Properties**.
4. Select the **Configuration** tab.
5. Make your changes and click **OK**.

Changing a remote console:

To change an existing remote console, you must delete and re-create the connection configuration.

Changing a local console on a network (LAN):

Important: If network data will be changed, you need to delete and re-create the connection configuration. Also, Operations Console should be closed and restarted before attempting to connect a new configuration. This action will remove all cached values associated with any old configurations.

1. Select the configuration name.
2. Click **Disconnect**. Wait until the status shows `Disconnected` at the remote console.
3. Select the configuration name.
4. From the **Connection** menu, click **Properties**.
5. Select the **Configuration** tab.
6. Make your changes and click **OK**.

Deleting a console configuration

You might need to delete an existing local console or remote console to meet your specific needs while using Operations Console. You must be a member of the Administrators group to delete a console.

Note: You may also use the Delete key on the keyboard. Just highlight the configuration you want to delete and press the Delete key.

Related tasks

"Changing a console configuration" on page 43
You might need to change an existing local console or remote console to meet your needs while using Operations Console.

"Releasing control at the remote console" on page 54
Releasing System i control at the remote console allows control to go back to the state that the local console was in when the first remote console requested control.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

Deleting a local console:

To delete an existing local console, follow these steps:

1. If your local console is connected to a system, disconnect it as follows; otherwise, go to step 2:
   a. If the local console does not have control, do the following to request control; otherwise, go to step 1b:
      1) Select the configuration name from the Operations Console window.
      2) From the **Connection** menu, click **Request Control**.
      3) If the Service Device Sign-on window appears, click **Cancel**.
   b. Select the configuration name from the Operations Console window.
   c. From the **Connection** menu, click **Disconnect**. The connection status shows `Disconnecting`.
   d. Wait until the connection status shows `Disconnected` at the local console.
2. Select the configuration name from the Operations Console window.
3. From the **Connection** menu, click **Delete**.
4. Click **Yes** to confirm the deletion.

Deleting remote console:

To delete an existing remote console, follow these steps:

1. If your remote console is connected to a local console, disconnect as follows:
   a. If the remote console has control, release control.
   b. Select the configuration name.
   c. From the **Connection** menu, click **Disconnect**. The connection status shows `Disconnecting`.
   d. Wait until the status shows `Not connected to local console` at the remote console.
2. Select the configuration name.
3. From the **Connection** menu, click **Delete**.
4. Click **Yes** to confirm the deletion.

Windows 2000/XP users:

You may need to delete the network object each time you delete a configuration entry in Operations Console. Do the following to verify that the network object does not exist:

1. Open the **Network and Dial-up Connections** folder in the Control Panel.
2. If you deleted a local console configuration, look for an icon that has the name of the system to which the local console connects.

   Otherwise, if you deleted a remote console configuration, look for an icon that has the computer name of the remote console that you used to connect to the system.
3. If the icon exists, you need to delete the network object as follows:
   a. Right-click the icon.
   b. Select **Delete**.

Connecting a local console to a system

You can connect a local console on a network to a system or directly connect a local console to a system. After you create a connection, you can connect to another system.

Connecting a local console on a network to a system:

Connecting a local console on a network (LAN) to a system enables you to have an active console and a functional remote control panel (if configured).

An active console is a command interface to a System i platform (5250 emulation) that is currently interacting with the system. You can use a functional remote control panel to perform most control panel functions (depending on the partition to which you are connected) as if you were at the system.

If you have problems when performing some of these steps, see the Network connection errors topic for possible solutions.

Perform the following steps to connect a local console on a network to a system:

1. Open Operations Console to start the connection:
   a. Click **Start** and select **Programs**.
   b. Select **IBM iSeries Access for Windows**.
   c. Click **Operations Console**.

   By default, Operations Console does not automatically attempt to connect a local console on a network to a system. If you selected **Start connection when Operations Console starts** in Properties, the local console connects to the system automatically. The connection status shows **Connecting** first, before changing to **Connecting Console**.
2. If you did not select **Start connection when Operations Console starts** in Properties, you need to connect to the system as follows:
   a. Select the configuration name.
   b. From the **Connection** menu, click **Connect**.
3. In the LAN Service Device Sign-on window, sign on using the access password that allows the system to access your service device information. You must also provide your assigned service tools user ID and password. Operations Console needs a valid access password, service tools user ID, and service tools password to authorize the connection between the local console and system.

   After you sign on successfully, the connection status shows **Connected**.
4. Confirm that the console and remote control panel, if configured, appears.

To use your PC to access another system, you need to connect to another system.

Related tasks

"Connecting to another system"
After another connection is created, you can perform these steps to connect Operations Console to another system.

Related reference

"Network connection errors" on page 100
These are solutions to problems that occur when a local console fails to connect to a system over a network.

"Security of your Operations Console configuration" on page 13
Operations Console security consists of service device authentication, user authentication, data privacy, and data integrity.

"Troubleshooting status message" on page 97
If you encounter connection problems when connecting a console, Operations Console provides status messages to assist you in troubleshooting the connections.

Related information

Service tools user IDs and passwords

Connecting to another system:

After another connection is created, you can perform these steps to connect Operations Console to another system.

When using Operations Console, you can have multiple configurations and connect to several systems at the same time. By connecting to another system as a local console on a network (LAN), a local console directly attached, or a remote console using dial-up support, you can work with another system in your network or at a remote location. Operations Console allows only one directly attached local console configuration, but it allows more than one network or remote configuration.

It is assumed that the additional connection has been created already.

Follow these steps to connect to another system:

1. On the **Operations Console Connection** window, select the configuration name that you want to connect.
2. From the **Connection** menu, click **Connect**.

Notes:

1. If you have a local console that is directly attached to the system and one or more remote consoles configured, you must disconnect the currently connected local console configuration to make the remote connection to another system's local console directly attached with remote access allowed. Operations Console does not support a local console that is directly attached to the system and an outgoing remote console connection to be active at the same time.
2. If the PC you are using has multiple remote console configurations only one can be connected at a time.
3. All supported PC operating systems can connect multiple network configurations at the same time allowing a single PC to be the console for multiple systems or partitions.

Connecting a local console directly attached to the system:

Connecting a local console directly attached with remote access allowed enables remote consoles to connect to the system. It also allows System i control to be automatically granted to the first requester, or allows you to have control at the local console to handle incoming control requests.

Perform the following steps to connect a local console directly attached to the server (with or without remote access allowed):

1. Open Operations Console to start the connection:
   a. Click **Start** and select **Programs**.
   b. Select **IBM iSeries Access for Windows**.
   c. Click **Operations Console**.

   By default, Operations Console does not automatically try to connect a local console directly attached to a system. However, a local console directly attached with remote support running unattended mode will automatically connect. If you selected Start connection when Operations Console starts in Properties, the local console connects to the system automatically. The connection status shows `Connecting` before changing to `Connecting Console`.
2. If you set up your local console configuration to start in Attended mode, complete the following steps:
   a. In the Service Device Sign-on window, sign on using your assigned service tools user ID and password. Operations Console needs a valid service tools user ID and password to authorize the connection between the system and the PC. After you sign on successfully, the status changes from Pending Authorization to Connected.
   b. Confirm that the console appears.
   c. If you installed and configured the virtual control panel, confirm that it appears.

3. If you set up your local console configuration to start in Unattended mode, complete the following steps:
   a. Verify that the **Connecting Console** status does not remain for more than a couple of minutes. If it does not change, there is a connection problem.
   b. Verify that the status shows Pending Authorization and that **SERVER** appears in the **Current User** field. Incoming control requests will be automatically granted.

If you encounter other status messages, see the Troubleshooting status messages topic for their descriptions and possible solutions to the problems they describe.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

"Default user (SERVER)" on page 51
SERVER is an identification name that Operations Console assigns when there is no user in control of a system.

"Remote control panel fails to start" on page 108
If your remote control panel fails to start, verify these items.

"Troubleshooting authentication problems" on page 104
When setting up your initial connection, you might encounter authentication problems.

"Troubleshooting emulator problems" on page 104
When setting up your initial connection you may encounter emulator problems.

"System i control" on page 50
Control of your system means having an active console at a PC.

"Troubleshooting status message" on page 97
If you encounter connection problems when connecting a console, Operations Console provides status messages to assist you in troubleshooting the connections.

Connecting a remote console to a local console by modem

Connecting a remote console to a local console with remote support allows the remote console to communicate to a system through the local console.

The remote console user must have dial-in authority at the local console. You need this authority so the operating system at the local console allows the dial-in connection between the PCs.

Perform the following steps to connect the remote console to the local console directly attached with remote access allowed:

1. Open Operations Console to start the connection:
   a. Click **Start** and select **Programs**.
   b. Select **IBM iSeries Access for Windows**.
   c. Click **Operations Console**. By default, Operations Console does not automatically try to connect a remote console to the local console directly attached.
   - If you selected **Start connection when Operations Console starts** in Properties, the local console connects to the system automatically. The connection status shows `Connecting` before changing to `Connecting Console`.
   - If you selected **Start connection when Operations Console starts** when you configured the remote console, the remote console starts the connection to the local console automatically.
2. If you did not select **Start connection when Operations Console starts**, you need to start the connection to the local console as follows:
   a. Select the configuration name.
   b. From the **Connection** menu, click **Connect**.

3. If the User Logon window appears, sign on so the operating system at the local console checks whether you are a user with dial-in authority. After you sign on successfully, the connection status shows `Connected`.

   Note: If you do not sign on to the remote console connection in approximately a minute, Dial-up Networking ends the connection.
4. If the Service Device Sign-on window appears, sign on using your service tools user ID and password.

Related tasks

"Requesting control at the remote console" on page 54
To get an active console at the remote console, you must request control from the local console. An active console is a command interface that is currently interacting with a system through 5250 emulation.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

"Remote console through dial-up fails to connect to local console" on page 104
Here are the solutions to a problem that occurs when a remote console modem fails to establish a connection with a local console.

"Troubleshooting Operations Console connection" on page 96
Problems can occur during an Operations Console session. The following topics are some solutions to common problems that are encountered during your initial setup and management of your configurations.

Control tasks between users

If you have a local console directly attached with remote access allowed or a remote console through dial-up support, you can perform control tasks.

For example, you can grant or refuse control of the console, request control of the console, and determine which user is in control of the console.

Both directly attached local consoles and LAN-attached local consoles can have data on the display at the same time. This is not associated with the console option **Allow console recovery and console can be taken over by another console**. Regardless of console connectivity, all console-capable devices are presented with display data. The following information covers the relationship between the local console directly attached with remote access and a remote console.

Related reference

"Takeover or recovery of an Operations Console connection" on page 60
You can use these functions to take control of another console device.

Granting or refusing control to a remote console:

Granting control allows another user to work with the system. Refusing control denies a requesting user access to the system and allows the current user to continue to have control. When you grant control to another user, your console session and the remote control panel window close.

When a remote console requests control, and the local console has control, the Operations Console Request window appears at the local console. The window shows the service tools user ID with which the requesting remote console user signed on to the operating system of the remote console (PC). The default is set to grant control.

Note: If the local console is not in control at the time the remote user requests control there is no dialog presented at the local console. The remote user is automatically granted control.

Granting control:

To grant control to a remote console, in the Operations Console Request window, click **OK**.

Refusing control:

To refuse control to a remote console, follow these steps:

1. In the Operations Console Request window, click **Reject request**.
2. In the **Message** field, you may type an explanation for the refusal.
3. Click **OK**.

System i control:

Control of your system means having an active console at a PC.

An active console is a command interface that is currently interacting with a system through 5250 emulation. Thus, the PC in control becomes the console and can perform console functions. Only one PC can have control at a time.

If your local console starts in **attended mode**, you have control immediately after you Connect a local console directly attached to the server. When you have control at this local console, you need to be present to grant or refuse control to requesting remote consoles.

If your local console starts in **unattended mode**, SERVER appears in the **Current User** field after you Connect a local console directly attached to the server. Operations Console automatically grants control to the first requester (local console or remote console).

Related tasks

"Changing a console configuration" on page 43
You might need to change an existing local console or remote console to meet your needs while using Operations Console.

"Deleting a console configuration" on page 44
You might need to delete an existing local console or remote console to meet your specific needs while using Operations Console. You must be a member of the Administrators group to delete a console.

"Connecting a local console directly attached to the system" on page 47
Connecting a local console directly attached with remote access allowed enables remote consoles to connect to the system. It also allows System i control to be automatically granted to the first requester, or allows you to have control at the local console to handle incoming control requests.

"Connecting a remote console to a local console by modem" on page 48
Connecting a remote console to a local console with remote support allows the remote console to communicate to a system through the local console.

"Requesting and releasing control at the local console" on page 52
When your local console with remote support does not have System i control, you must request control at the local console to work with a system.

"Sending a message to a controlling remote console" on page 53
When using Operations Console, you might need to communicate with the user who has System i control. Operations Console allows a local console and a remote console to exchange messages when connected. Only the user that does not have control can initiate a message.

"Requesting control at the remote console" on page 54
To get an active console at the remote console, you must request control from the local console. An active console is a command interface that is currently interacting with a system through 5250 emulation.

"Releasing control at the remote console" on page 54
Releasing System i control at the remote console allows control to go back to the state that the local console was in when the first remote console requested control.

"Sending a message to a controlling local console or remote console" on page 55
While using Operations Console, you might need to communicate with the user who has control.

Related reference

"Default user (SERVER)"
SERVER is an identification name that Operations Console assigns when there is no user in control of a system.

"Transferring control between users" on page 55
These examples show interactions between a local console directly attached with remote access allowed and a remote console. They illustrate how System i control is transferred between PCs after beginning an Operations Console configuration.

Default user (SERVER):

SERVER is an identification name that Operations Console assigns when there is no user in control of a system.

When no user has System i control, SERVER appears in the **Current User** field. Operations Console automatically grants control to the first requester (local console or remote console).

Operations Console automatically grants control to the first requester in the following cases:

- Immediately after you release control at a local console with remote support.
- Immediately after connecting a local console directly attached with remote access allowed, if it started in unattended mode.
- When SERVER appears in the **Current User** field.

Related tasks

"Connecting a local console directly attached to the system" on page 47
Connecting a local console directly attached with remote access allowed enables remote consoles to connect to the system. It also allows System i control to be automatically granted to the first requester, or allows you to have control at the local console to handle incoming control requests.

"Requesting and releasing control at the local console" on page 52
When your local console with remote support does not have System i control, you must request control at the local console to work with a system.

"Requesting control at the remote console" on page 54
To get an active console at the remote console, you must request control from the local console. An active console is a command interface that is currently interacting with a system through 5250 emulation.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

Identifying user in control of a system:

Identifying the user who has System i control at a given time can help you determine how to proceed when you want to obtain control. This information applies to a local console directly attached with remote support and a remote console.

Perform the following steps to identify the user who has control:

1. In the **iSeries Operations Console Connection** Window, look for the row that shows the connection details for the configuration in question.

2. Identify the **Current User/System Name** values. These values belong to the user who has control. **Current User** shows the user ID with which the user in control signed on to the operating system of the PC in control or completed the connection. **System Name** shows the PC name where the user is in control.
3. Identify the **Local Console** value. It is the name of the PC that is directly attached to the system.
4. Compare the **System Name** and **Local Console** values as follows:
   - The local console has control if the **System Name** and **Local Console** values are the same. This comparison is useful to the connected remote console user.
   - A remote console has control if the **System Name** and **Local Console** values are different. This comparison is useful to the local console user.
   - No user has control if SERVER appears as the **Current User/System Name** values. This is useful to either the local console or the remote console user. A request for control will automatically be granted.

Displaying the remote control panel in read-only mode:

If you have the remote control panel installed and configured at the local console, you can display the remote control panel in read-only mode. This allows you to see the remote control panel when you do not have System i control.

For example, you can see the progress of an initial program load (IPL) at a system in a remote location. You can display the remote control panel in read-only mode in the following cases:

- At a local console if the local console user is not in control.
- At a remote console after the remote console connects to a local console or a local console requests control.
- At a remote console after the remote console releases control to a local console.

To display the remote control panel, from the **Connection** menu, click **Remote Control Panel**.

Displaying the remote control panel in read-only mode allows you to see the remote control panel when you do not have System i control.

Requesting and releasing control at the local console:

When your local console with remote support does not have System i control, you must request control at the local console to work with a system.

Requesting control at the local console forces control back from a remote console if the remote console has control. After finishing your work, you must release control to allow Operations Console to automatically grant control to a requester.

Related tasks

"Identifying user in control of a system" on page 51
Identifying the user who has System i control at a given time can help you determine how to proceed when you want to obtain control. This information applies to a local console directly attached with remote support and a remote console.

"Sending a message to a controlling remote console" on page 53
When using Operations Console, you might need to communicate with the user who has System i control. Operations Console allows a local console and a remote console to exchange messages when connected. Only the user that does not have control can initiate a message.

"Releasing control at the remote console" on page 54
Releasing System i control at the remote console allows control to go back to the state that the local console was in when the first remote console requested control.

Related reference

"Default user (SERVER)" on page 51
SERVER is an identification name that Operations Console assigns when there is no user in control of a system.

"System i control" on page 50
Control of your system means having an active console at a PC.

"Troubleshooting authentication problems" on page 104
When setting up your initial connection, you might encounter authentication problems.

"Local console connection problems" on page 99
When setting up your local console, you might encounter problems connecting. Failure to connect is defined as problems resulting in the status not going to **Connected** and the emulator did not start.

Requesting control at the local console:

Perform the following steps to request control at the local console:

1. Identify the user who has control.
2. If no user has control (SERVER appears in the **Current User** field), do the following:
   a. Select the configuration name.
   b. From the **Connection** menu, click **Request Control**.
   c. If you installed and configured the remote control panel, confirm that it appears. After the remote control panel appears, a sign-on window may appear.
   d. If the Service Device Sign-on window appears, sign on using your service tools user ID and password. Operations Console needs a valid service tools user ID and password to authorize the connection between the system and the PC.
   e. Confirm that the console appears.

   If a remote console user has control and you **do not** want to force control back from the remote console, send a message to the remote console asking the user to release control. To request control at the local console, after the remote console releases control and control did not return to the local console, do the substeps in step 2.

   If a remote console user has control and you **do** want to force control back from the remote console, do the substeps in step 2. At the remote console, the console closes and a message appears indicating that the local console has taken control.

Releasing control at the local console:

To release control, follow these steps:

1. Select the configuration name.
2. From the **Connection** menu, click **Release Control**.

At this time, SERVER appears in the **Current User** field. The console disappears. Control is automatically granted to the first requester.

Sending a message to a controlling remote console:

When using Operations Console, you might need to communicate with the user who has System i control. Operations Console allows a local console and a remote console to exchange messages when connected. Only the user that does not have control can initiate a message.

Perform the following steps to send a message to the user who has control:

1. Select the configuration name from the Operations Console Connection Window.
2. From the **Connection** menu, click **Send Message**.
3. Type the message.

4. Click **Send**.

   At this time, the receiver may reply as follows:

   a. Type the reply.
   b. Click **Reply**.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

Requesting control at the remote console:

To get an active console at the remote console, you must request control from the local console. An active console is a command interface that is currently interacting with a system through 5250 emulation.

You must have connected the remote console to a local console by modem.

Perform the following steps to request control at the remote console:

1. Identify the user who has control.
2. If SERVER appears in the **Current User** field, do the following:
   a. Select the configuration name from the Operations Console Connection Window.
   b. From the **Connection** menu, click **Request Control**. If no user has an active console, a sign-on window opens.
   c. If the Service Device Sign-on window opens, sign on using your service tools user ID and password. Operations Console needs a valid user ID and password to authorize the connection between the system and the PC. After you sign on successfully, the console appears.
3. If the local user has control, do the following:
   a. Send a message to the local console explaining why you need to have control.

      Important: It is not necessary to send a message before requesting control.
   b. From the **Connection** menu, click **Request Control**. If the local user grants control to the remote console, the console appears. If the local user refuses giving control to the remote console, a window opens indicating the refusal.

Related tasks

"Connecting a remote console to a local console by modem" on page 48
Connecting a remote console to a local console with remote support allows the remote console to communicate to a system through the local console.

"Identifying user in control of a system" on page 51
Identifying the user who has System i control at a given time can help you determine how to proceed when you want to obtain control. This information applies to a local console directly attached with remote support and a remote console.

"Sending a message to a controlling local console or remote console" on page 55
While using Operations Console, you might need to communicate with the user who has control.

Related reference

"Default user (SERVER)" on page 51
SERVER is an identification name that Operations Console assigns when there is no user in control of a system.

"System i control" on page 50
Control of your system means having an active console at a PC.

"Troubleshooting authentication problems" on page 104
When setting up your initial connection, you might encounter authentication problems.

Releasing control at the remote console:

Releasing System i control at the remote console allows control to go back to the state that the local console was in when the first remote console requested control.

For example, if the local console granted control to the first requesting remote console, releasing control at the remote console allows the local console to regain control. However, if control was automatically granted to the first requesting remote console, releasing control at the remote console allows the next requester to automatically be granted control.

To release control at the remote console, do the following:

1. Select the configuration name from the Operations Console Connection Window.
2. From the **Connection** menu, click **Release Control**. The remote control panel window (if present) and the console close.

After you release control at the remote console, you can end the remote console connection to the local console. To end the connection, follow these steps:

a. Select the configuration name.
b. From the **Connection** menu, click **Disconnect**. The connection status shows `Disconnecting`.
c. Wait until the status shows `Not connected to local console`.

Related tasks

"Deleting a console configuration" on page 44
You might need to delete an existing local console or remote console to meet your specific needs while using Operations Console. You must be a member of the Administrators group to delete a console.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

Sending a message to a controlling local console or remote console:

While using Operations Console, you might need to communicate with the user who has control.

Operations Console allows a local console and a remote console to exchange messages when connected. Only the user that does not have control can initiate a message.

Perform the following steps to send a message to the user who has control:

1. Select the configuration name from the Operations Console Connection Window.
2. From the **Connection** menu, click **Send Message**.
3. Type the message.
4. Click **Send**.

   At this time, the receiver may reply as follows:

   a. Type the reply.
   b. Click **Reply**.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

Transferring control between users:

These examples show interactions between a local console directly attached with remote access allowed and a remote console. They illustrate how System i control is transferred between PCs after beginning an Operations Console configuration.

Transferring control between a local console in control and a remote console

This example shows interactions between a local console directly attached with remote access allowed that has System i control and a remote console. It illustrates how control is transferred between the local console and the remote console when the remote console requests control.

These interactions show the expected behavior from the local console and remote console users:

1. The local console user has control of a system. At this time, the local console user must handle all incoming control requests.
2. When a remote console requests control, the local console user decides whether he grants or refuses control to the requester. If the local console user grants control, control is granted to the requester.

   If the local console user refuses control to the requester, the local console user continues to have control.

Transferring control between a local console not in control and remote consoles

This example shows interactions between a local console directly attached with remote access allowed that does not have System i control and remote consoles requesting control. It illustrates how control transfer occurs when no user has control and a remote console requests control.

These interactions show the expected behavior from the local console and remote console users:

- No user has control of a system. Therefore, SERVER appears in the **Current User** field, and incoming control requests are automatically granted.
- When a remote console requests control, control will be granted to the remote console.

Related reference

"System i control" on page 50
Control of your system means having an active console at a PC.

Using the Properties page

On the Properties page, you can find information about the system associated with the connected configuration and make changes to an existing configuration.

If the partition number is showing **** then there is a configuration error associated with the configured connection. The error may be wrong partition ID or possibly even wrong service host name IP address.

The **General** tab contains information about the system that you are connected to. The **Log Directory** field shows the path to the Operations Console data logs and is the only field that you are allowed to edit.

The **Configuration** tab will contain options that actually change what functions are used and how the configuration connects. Options not available for the associated configuration will be greyed out. The remote console does not have a **Configuration** tab. To make changes to the remote console, you must first delete and then re-create the remote console connection.

Answer BOOTP is the option that allows the system administrator to determine which configuration for a given PC supplies the IP data to the system. New systems or logical partitions that attempt to use a local console on a network might be using BOOTP. If more than one PC or configuration is allowed to supply the data, the first PC to respond to the broadcast packet supplies this data. Controlling which PC supplies this data might allow the administrator additional flexibility.

An IP address may be supplied for the console when using a directly attached local console and directly attached local console with remote support. This is to provide the user with a convenient method when the default address is already in use on the PC.

Note: An initial local console on a network configuration will configure both the console and remote control panel. This is where you would turn off one of the functions if you did not want to use it.

The **Device ID** tab has been changed to allow a single button to reset the service tools device ID password on the PC. The system's service tools device ID must be reset separately. The associated service tools device ID for the configuration cannot be changed from this page. To use a different service tools device ID, you must delete this configuration and create a new configuration using the new device ID.

The **Access Password** tab is where you can change the access password. The access password is used, in part, to authenticate the device making the connection.

While in Properties, you can use the **?** help for more information. Click on **?**, the **?** is now attached to your cursor. Move the **?** to the field you want more information on and click again. A context sensitive help dialog window will appear containing information regarding just that field.

Related reference

"Preparation for your network environment" on page 11
To prepare for your network environment, you need to identify and comply with the minimum network configuration required to set up an Operations Console local console on a network (LAN) configuration.

Customizing the Operations Console window

Operations Console provides more flexibility when you interact with it through its graphical user interface (GUI). You can customize the Operations Console window to view and interact with information that is most important to you.

On the initial startup of Operations Console you may notice some small changes. The first change is that there is a new drop-down menu item available, **Options**. The changes made in V5R3 also are listed here to assist the new user with some of the capabilities of the Operations Console window.

- **Show Warnings** This option can be used to prevent many of the common dialog windows from showing. For example, the confirming a delete function dialog window will not be displayed if this is not selected.
- **Prerequisite Warning** The dialog presented during the configuration wizard concerning the requirements can be turned off using this option.
- **Use Single Sign-on** This option provides the ability to share common signon data when connecting multiple configurations at the same time. This allows the use of a single signon dialog window instead of one for each connection.
- **Double-Click** This option has two items associated with it. The first is for expanding or collapsing the tree structure, the + (plus sign) control. Instead of a single click to expand or collapse you can change the function to use a double-click. The second item requires the user to use another method for starting a connection instead of double-clicking on the configuration name.

The second button on the toolbar has changed functionality. If you are familiar with the older releases of Operations Console, you might have used the second button to change a configuration. Now, the second button takes you to the **Properties** page of the selected configuration. All changes to the configuration of Operations Console are now made through the **Properties** page.

You may notice that the icon for configured connections is different. The use of a red or a green indicator makes it easier for you to see which configurations are connected and which are not connected. Another visible change made to Operations Console is that each configured connection has a + (plus sign) to the left of the icon. The + is a standard Windows expand and collapse function. Each configured connection expands out into separate functions associated with that connection. If, for example, the connections to the first partition of an LPAR multi-partitioned system you might also see separate entries for a remote control panel for each partition. This should added functionality should make it easier to administer your connections.

When you expand the configured connection and right-click on a remote control panel configuration, you can see the system reference code (SRC) history option. The SRC history option allows you to retrieve all or part of the recorded SRCs issued by the system. This information can be useful when you debug certain problems from IPLs to control panel activity.

Drag and Drop functions have been added to configured connections to facilitate ease of management. You now have the ability to customize the list to appear the way you want it to appear. This will allow you to group configurations together so a common function can be performed on multiple connections at the same time. In addition to drag and drop, the standard Windows tagging methods for selecting more than one connection apply here. Connections most likely to share functions can be grouped at the top of the list, for example.

Additional functions now allow you to place selected data columns in the order in which you want them to appear. Using the drag and drop method, you can place any column in the position most useful to you. You even have the ability to select which columns appear in the display. The exception to this is the iSeries Connection column which maintains its fixed position. From the **View** menu, select the **Choose Columns** pull-down menu. Then, select the columns you would like to appear and click on the column title to include it or not include it. A check next to the column title includes it on the display. Only one column can be selected or deselected each time. Repeat this procedure to add or delete additional columns.

Management of multiple consoles

If you have more than one workstation that is capable of being the console to the same system or partition, there might be more than one way of using those devices as the console, depending on your configuration and circumstances.

For example, if the console type is set for Operations Console (LAN), which has a value of 3, a local console directly attached, value of 2, will not be able to become the console when a connection is attempted.

Related reference

"Planning considerations for your backup console" on page 6
Most system plans include a level of redundancy to allow for the event of hardware failures; however, many people do not consider the console in their plans. To recover quickly from an unexpected loss of your console, you need to plan for a backup console.

Multiple local PC consoles on a network

When a workstation is already a console and another local console on a network attempts to become the console, the connection will be successful and the user will be presented with the Console Information Status screen.

This screen will inform the user which device is currently the console based on the last successful connection. Many connections of this type can be connected but only one can be the active console. Also, leaving the newly connected PC in this state will not allow the console activities to be automatically transferred to this PC. In this case you have two choices.

- Disconnect the connection using the Operations Console window. To disconnect the connection, follow these steps:
  1. Select the connection name you want to disconnect.
  2. Click **Connection** → **Disconnect**.
- Disconnect the emulator session. To disconnect the emulator, follow these steps:
  1. In the emulator window, click **Communication**.
  2. Select **Disconnect**.

If no device is acting as the console the next time a connection is made, either through Operations Console or the emulator, this PC will become the console. It is up to the users to determine whether or not this method is the correct way to manage console activities.

Multiple remote consoles through dial-up support connecting to the same local console directly attached to the system

In this environment, only one remote console is allowed to connect to the local console at a time.

The users are left to work out an arrangement in which another remote console can access the local console. If this is needed on a regular basis it might be as easy as assigning a time period in which each remote console would access the local console. When the time is up for the first remote, it would release control and disconnect. The next remote would then connect at its assigned time and request control. This assumes that the local console did not have control when the first remote got control.

Switching from one console type to another when a console is currently available

If you know in advance that you will need a different console type, you can use the current console to make the changes necessary for use with a different console.

If the hardware resources for the targeted console type have already been specified and configured for use as a console, making the change may be as simple as specifying the new console type and activating the associated hardware resource. However, if hardware used for the targeted console type will require allocation or configuration, you will need to use the appropriate information in **Change from one console type to another**.

An example would be the planned loss of the network used by your LAN-connected console. You will be doing some infrastructure changes requiring more than a day. You also have the console cable already installed between the server's asynchronous communications adapter and the PC. You can use either DST or SST to change the console type to a 2 for Operations Console (direct). The asynchronous communications adapter will not be active at this time since the console type is set for LAN so you would have to manually start the asynchronous card with a function 66 on the control panel or remote control panel. Once the communications line is active you can disconnect the LAN-connected console and create a configuration for the directly attached local console, if a configuration doesn't already exist, and start a connection. To switch back to the LAN-connected console you would only have to use the directly attached console to enter either DST or SST and change the console type to a 3, disconnect the existing console and restart the LAN-connected console. Since the hardware resource configuration didn't change, there isn't a need for further changes. You could deactivate the asynchronous communications adapter manually or just wait until the next IPL. The IPL will not start the asynchronous communications adapter because the console type is now set for LAN.

Note: To activate the new console without an IPL, you could perform the console service function of 65+21+21. Once the console type has been updated, performing the console service function will disconnect the current console and restart the console type you just specified.

Related tasks

"Activating the asynchronous communications line on the system" on page 91
These instructions apply only to local console directly attached and local console directly attached with remote-support-enabled configurations. Use these instructions to manually activate the asynchronous communications line on the system.

"Deactivating the asynchronous communications line on the system" on page 92
These instructions apply only to local consoles directly attached and local consoles directly attached with remote support enabled. Use these instructions to manually deactivate the asynchronous communications line on the system.

Related reference

"Changing from one console type to another" on page 66
Depending on how your console connection is set up, you can change to a different console type.

Switching from one console type to another when the current console is not operational

If you develop a problem with the current console, you can use one of these methods to change the console type.

- If you are using a LAN-connected PC for the console and have another PC set up to be the console, you might be able to use the other PC for the console until the problem with the first console is fixed.
- Use SST from another workstation.
- Use the console service functions (65+21).
- Use the appropriate native macro from another workstation.

Note: Any hardware allocations or configurations will have to be accomplished before connecting with another connectivity. For example, if you are using a shared IOP in an LPAR environment you can deallocate and allocate the resource from one partition to another, if your hardware supports this method. If you planned for a backup console some or all of this work may already be done. If you do not have a backup console in place, some tasks may require one or more IPLs to get the system into a state where you can use the new console.

Using the same configuration example above (LAN to direct) and assuming all hardware and configurations have been done, you would disconnect the existing console (LAN-connected); use the console service functions (65+21), native macro, or SST from another workstation to set the console type to a 2 for directly attached consoles; then connect the local console directly attached. However, if you used the native macro or SST from another workstation, you may also have to activate the asynchronous communications adapter. Using the console service functions (65+21) or native macro OPSCONSOLE RESTART automatically activates the adapter.

Note: There are several console service functions (65+21) that might be needed to recover or debug an Operations Console problem depending on the problem, the connectivity used for the current console, the target console type, and the current state of the system. If you are unsure of any function or recovery action, contact your service provider for assistance.

Related reference

"Using the console service functions (65+21)" on page 92
Console service functions (65+21) are the emergency console recovery functions.

Takeover or recovery of an Operations Console connection

You can use these functions to take control of another console device.

A special set of functions included in i5/OS allow an Operations Console to take control from another console device. The two main actions that you can do are:

- **Takeover** is the process used for a LAN-connected console-capable device to take control from the current LAN-connected console device. This take over action can not be used with directly attached consoles.
- **Recovery** is the process of regaining control of the job running on the console after a problem with the console was encountered. The recovery process may be to the same console device or a different console device and may be facilitated by additional work to enable a device using a different connectivity. The exception is twinaxial console which does not use the same type of 5250 emulation and thus cannot recover the console.

Every console-capable device running 5250 emulation, regardless of connectivity, will be presented a window of data regardless of whether it is the console when it successfully connects. This means that more than one device will have data on the window after the console has been established. A console device will not have a blank window showing `Disconnected`. This action allows the job at the console to be "transferred" to another device without causing loss of data. When the console option for takeover is enabled, the system also has enhanced recoverability from loss of the console.

The recovery action is accomplished by suspending the data stream to a console that loses a connection, or is being taken over, saving further data and then sending that data to the next device to become the console, even if the device is the same former console. Recoverability is essentially just taking over the console from the same or different qualified device regardless of what the former console was doing.

The default setting for the console take over and recovery function is **disabled**. If this function is disabled, all console-capable devices will open the `Console Information Status` window whenever they are not the active console.

Benefits of these functions include convenience and redundancy. Console-capable devices can be placed around a site, or multiple sites, allowing users to move around and gain control of the system from any of these devices. Whatever the previous console's activity was, the new console is at the exact same place, even during the process of restarting the system or installing the i5/OS operating system. When the console option for takeover is enabled, the system also has enhanced recoverability from the loss of the console.

Related reference

"Console planning considerations" on page 4
When you plan for Operations Console for one or more of your systems, consider these points.

"Planning considerations for your backup console" on page 6
Most system plans include a level of redundancy to allow for the event of hardware failures; however, many people do not consider the console in their plans. To recover quickly from an unexpected loss of your console, you need to plan for a backup console.

"Control tasks between users" on page 49
If you have a local console directly attached with remote access allowed or a remote console through dial-up support, you can perform control tasks.

Takeover details:

Here is the additional information about the console takeover function.

- This function must be enabled if you want to take over the console or be protected from the loss of the console using the recovery function.
- The option **Allow console recovery and console can be taken over by another console** is enabled on the Select Console window in DST or SST.
- This function does not include support for twinaxial consoles. Only Operations Console workstations, which use 5250 emulation, can use this function.
- Since there can be only one Operations Console directly attached device, the takeover function cannot be used. However, any 5250 emulation-based console device can be used to recover a loss of the console by changing the console type. This may require a reallocation of hardware to support the new console type.
- The DST user ID used to sign on at an eligible device must also have the user privilege of take over console, a new feature for V5R4.
- Only devices with the same attributes (for example: 24x80 or 27x132) can perform a take over. For example, if device LAN1 is running in 24x80 mode and LAN2 is running in 27x132 mode, and LAN1 is the console, LAN2 will see **NO** in the **Take over the console** field.
- Data on the Console Information Status screen does not change. Currently, there is no method to automatically refresh the data. You can manually cause a refresh of all fields except the Take over the console field by pressing Enter. The user would have to exit this screen and sign on again to see a change to that field.
- Beginning in this release, takeover is supported in a D-mode IPL. Two devices can be connected, with data, at the same time during a D-mode IPL.
- Console type respectability is still honored when take over is enabled. However, each console-capable workstation will present either a DST signon or the Console Information Status window. If the console type is set to LAN, for example, a local console directly attached, if connected, will present the `Console`

Information Status window without displaying the DST signon window but the Take over the console field will show **NO** to indicate it cannot take over the existing console. However, it could be used for a recovery action.

Related reference

"Recovery details"
Here is the additional information about the console recovery function.

Recovery details:

Here is the additional information about the console recovery function.

- The recovery of the console using a device with the same console connectivity is directly tied to the take over option. If you do not want take over capability but do want recovery from loss of the console, you must still enable the take over option.
- Console recovery utilizes the take over function. Recovery can be from the same device or another device of the same connectivity. For example, if you are using Operations Console LAN and have multiple PCs set up to be the console and the existing console fails you can use the take over function from the same PC, after correcting the reason for the failure, or from another PC. Regardless of what the former console was doing, the new console will be in the same job, at the same step, as the original console would have been. The job continues even though the console was not operational. Using a directly attached console to recover a loss of a LAN-connected console doesn't fit this scenario
- The recoverability of the console using a different console connectivity provides additional options for the user. If you have a backup console plan that involves the need for a change in the console type, consider the following:
  - For ease of adapting recovery, you can place all console supporting adapters for use by the same IOP. This reduces the number of steps necessary to accomplish a recovery.
  - The console type change can be immediate depending on the method used to make the change. Examples would be:
    - Using DST or SST to change the console type would allow the console to change only at the next IPL. Following this action with a force DST (function 21) using the control panel or LPAR menu may not always work either.
    - Changing tags in the LPAR environment will also require an IPL to cause a change of the console.
    - However, using the console service functions (65+21), forces the system to do this search and activates the appropriate hardware and tasks immediately.
  - Supporting hardware for each console type you want to use for recovery must be available at the time of recovery. For example, if you want a local console directly attached to be able to recover a local console on a network, both adapter cards must be located in their respective locations or be properly tagged for logical partitions. For this to be completed, you also need to change the console type, either using an available menu or using the console service functions (65+21).

    In order to accomplish a recovery using a different console type, you must set the new console type **before** attempting the takeover. This means that either the supporting hardware must already be available, including any logical partition tagging, or you have to move supporting hardware, physically or logically, before attempting the recovery. Then, you will have to use one of the methods to change the console type to the desired setting. You can use an existing workstation and SST, if available, the native macro, or the console service functions (65+21).
  - In V5R4, a D-mode IPL with the take over function, one console device taking over for another, is supported.

    If you change the console mode value during a D-mode IPL, for example using 65+21, you should be able to connect another device as long as the new console type has supporting hardware and a device.

Related reference

"Takeover details" on page 61
Here is the additional information about the console takeover function.

"Using the console service functions (65+21)" on page 92
Console service functions (65+21) are the emergency console recovery functions.

Enabling console takeover:

Before you can enable console takeover, you must have the Take over console privilege.

Use the procedure following to grant Take over console privilege and then continue with the next procedure to enable console takeover.

To add the Take over console privilege to a user, perform the following steps:

Note: To perform any of the following procedures using SST, select the option Work with service tools user IDs and Devices everywhere it says select Work with DST environment and skip the step Select **System Devices**.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST).
2. Select **Work with DST environment**.
3. Select **Service tools user IDs**.
4. Type a 7 on the line in front of the desired user ID and press Enter.
5. Scroll down until you find the option **Take over console** and place a 2 on that line to grant the user this privilege and press Enter.

   To repeat this procedure for additional user IDs, repeat steps 4 and 5.

   This privilege will be used the next time the user ID signs on.

   Note: When a user signs on at a device capable of taking over the console the status of the Take over the console field is updated. In order to reflect a change, such as a user being granted the Take over console privilege, the user would have to exit the Console Information Status window, using F3 or F12 and sign on again.

   To enable the console takeover and recovery, perform the following:

   a. Access Dedicated Service Tools (DST) or System Service Tools (SST).
   b. Select **Work with DST environment**.
   c. Select **System devices** (skip this step if using SST).
   d. Select **Select Console**.
   e. Type a 1 in the option column for **Allow console recovery and console can be taken over by another console** and press Enter.

The console takeover option will take effect immediately.

Scenarios: Takeover and recovery:

These scenarios can help you understand the takeover and recovery options.

Scenario: LAN connected devices only with takeover enabled:

This scenario describes what happens during an IPL when console takeover is enabled and more than one LAN-connected device is available.

The LAN devices are called LAN1, LAN2, and LAN3. The IPL is being performed in unattended (Normal) mode.

At the point in an IPL when the console device is being determined, it is more or less a race condition if more than one device is connecting at a time. The first device to connect, of the type specified by the console type setting (LAN in our example), becomes the console and will be presented with the usual console screens.

For our example let's say LAN1 is the first device connected. During the IPL this device will show the IPL status changes just like any other console and eventually the i5/OS sign on window. LAN2 and LAN3 will show a special DST signon screen with a new line of data stating `ATTENTION: This device can become the console`. The rest of the window will be the same as any other DST signon window. At LAN2 a user with the user privilege of take over console signs on. This user will now be presented the same `Console Information Status` screen and the take over the console field will show a `YES` indicating that takeover is possible. At LAN3 a user without the take over console privilege signs on. The take over the console field will show as `NO` since the user does not have the correct authority for takeover.

At this point, only one device has met all the conditions for a console takeover. At the bottom of the window is F10 (Take over console connection). Pressing F10 presents the user with the Take over Console Connection From Another User window. This is a confirmation window that gives the user a last chance to cancel the takeover. Selecting 1 and then pressing Enter at this point causes the takeover to occur. Almost immediately, LAN1 gets the special DST sign-on window and LAN2, the device that initiated the takeover, has the exact same window that LAN1 had when the transfer took place. The job, if something was running, does not know that this action took place. In fact, the original console could have been installing Licensed Internal Code or the i5/OS operating system, or it could have been running a complete system save in restricted state and the system does not know it. You can even disconnect the console connection and come back later, reconnect, and you can still get the current job's window data. If a large amount of window data was sent by the job and could not be delivered, the data will be stored until later. When a console is reconnected by an authorized user (has the takeover console privilege) from an eligible device, the user might see fast window refreshes until all the stored data has been delivered. Actually, doing a disconnection and a reconnection is considered a recovery (not a takeover).

The data present at LAN3 will not change after the takeover. Currently, there is no method to automatically refresh the data. However, if the user at LAN3 pressed Enter, a manual refresh of all fields except the Take over the console field would occur. The user would have to exit this screen and sign on again to see the change to that field.

Scenario: A normal IPL and dual-connectivity configurations with take over enabled:

This is a description of what happens during an IPL when console take over is enabled and more than one Operations Console connectivity is being used. That is, a directly attached console device, of which there can only be one, is connected and three Operations Console LAN devices are connected.

The console type is set to Operations Console LAN (3). The directly attached PC will be known as CABLED and the LAN PCs will be labeled LAN1, LAN2, and LAN3. The IPL is being performed in unattended mode.

At the point in an IPL when the console device is being determined, it is more or less a race condition if more than one device is connecting at a time. The first device to connect, of the type specified by the console mode setting (LAN in our example), becomes the console and will be presented with the usual console screens. Each additional device that connects will be presented with one of two screens.

For our example let's say LAN1 is the first device connected. During the IPL, this device will show the IPL status changes just like any other console and eventually the i5/OS sign-on window. LAN2 and LAN3 will present a special DST sign-on with a new line of data stating "ATTENTION: This device can become the console". The rest of the window will be the same as any other DST sign-on window. The device known as CABLED will not initially connect because it doesn't meet the console mode of LAN. If the asynchronous communications line were to be activated with a function 66 however, it would be taken directly to the new Console Information Status screen where the user can see data related to the

current console. The field Take over the console will show NO since it is not of the correct type (the console type is set to LAN). At LAN2, a user with the user privilege of take over console signs on. This user will now be presented the same Console Information Status screen but the Take over the console field will show a YES indicating that take over is possible. At LAN3, a user without the take over console privilege signs on. The Take over the console field will show as NO since the user does not have the correct authority for take over.

At this point only one device has met all the conditions for a console take over. At the bottom of the screen is F10 = Take over console connection. Pressing F10 will present the user with the Take over Console Connection From Another User screen. This is a confirmation screen that gives the user a last chance to cancel the take over. Selecting 1 and pressing Enter at this point will cause the take over to occur. Almost immediately, LAN1 will get the special DST signon screen and LAN2, the device that initiated the take over, will have the exact same screen LAN1 had when the transfer took place. The job, if something was running, does not even know this action took place. In fact the original console could have been installing Licensed Internal Code or i5/OS or even running a complete system save in restricted state and the server would not know it. You could even disconnect the console connection and come back later, reconnect, and you will get the current job's screen data and the job would never miss a beat. If a large amount of screen data was sent by the job and couldn't be delivered the data will be stored until later. When a console reconnects, by an authorized user and device, the user may see fast screen refreshes until all the stored data has been delivered. Actually, doing a disconnect and a reconnect is considered a recovery (not a take over).

Scenario: Recovery of a console requiring a new console type setting:

Sometimes you might have to change the console type to recover from a console error. An example of this might be the loss of your network during normal operations.

The console type could be changed using one of the following methods:

- DST or SST menus (delayed)
- Native macros (delayed)
- Console Service Functions (65+21) (Immediate)

Only the console service functions (65+21) method will automatically take down the old connection and activate all the resources for the new choice. The other methods might require manual steps to activate the appropriate resources for the new console. These changes also require that the associated resources be available in a state where they can be used. For example, assume that you are using Operations Console LAN and the network fails, that the console was in use by your logical partition, and that you do not have an asynchronous communications card on the IOP tagged for the console. You have to either move a card or change the IOP tagging to allow a directly attached console to work. If the change is not required immediately, you can also wait for the change to take effect during the next IPL, in which case a newly tagged IOP allows the directly attached console to connect. In this example, however, we are attempting to change the console's connectivity and use another device right now. The recommended method for immediate change is the console service functions (65+21) method. After this has been successfully performed, the user must sign on again. Because this scenario is from LAN to the directly attached console, the new console cannot get the special sign-on window or the Console Information Status window. It is the only valid console after the console type change. When the network problem is fixed, the LAN-connected devices go directly to the Console Information Status window and cannot take control as the console without changing the console type back to LAN. Takeover is not available when a device is directly connected as the console because only one connection of this type is allowed by the system.

Another consideration for choosing the method to change the console mode will be the availability of another workstation. If you are installing using the console then the only method available to you is the console service functions (65+21).

Scenario: How to recover the console during a D-mode IPL with take over enabled:

In this scenario you might be installing Licensed Internal Code as part of a system recovery action and the configured console was a local console on a network. However, the device did not become active and you have an A6005008 SRC code. The system is large and it takes a long time to get to this point and you do not want to start over.

The proper asynchronous communications adapter is available without further configuration changes, so you can use the console service functions (65+21) to change the console type. This automatically starts the communications adapter associated with the local console directly attached to the system. If you want to use the PC that you were using for the network-attached console, you simply disconnect the network configuration and create (or use a previously created configuration) a local console directly attached to the system configuration. After the console service functions (65+21) have successfully completed, you connect the directly attached configured connection. This device should become the console automatically and you will be at the step originally expected. If the network failure preceded the old console getting the language screen, the new console will present that screen. If the failure happened after you started an action, the new console will either be running that action or the action might be complete, in which case you will see the results of that action.

Changing from one console type to another

Depending on how your console connection is set up, you can change to a different console type.

Electronic customer support

If you are currently using electronic customer support (ECS) and you need to directly attach your console, you must move the electronic customer support cabling to another communications port before trying to install an Operations Console local console directly attached to the server.

Note: This may require you to change the resource information used for electronic customer support. Also, as part of your migration, you may need to deallocate the LAN adapter from use by the Operations Console. For instructions on deallocating or moving the LAN adapter, see the Deallocating or moving the LAN adapter card topic.

For more information about ECS, refer to the Electronic customer support topic.

Related tasks

"Deallocating or moving the LAN adapter card from use by Operations Console" on page 86
During a migration, you might need to deallocate the LAN card from use by Operations Console. You need to deallocate the LAN card if you are not planning on using an Operations Console local console on a network configuration or the service tools server.

Related reference

"Switching from one console type to another when a console is currently available" on page 59
If you know in advance that you will need a different console type, you can use the current console to make the changes necessary for use with a different console.

Related information

Electronic customer support

Changing from a local console directly attached to a local console on a network (LAN)

To change from an Operations Console with a local console directly attached to a local console on a network (LAN), you must change settings on both the PC and the system.

Before you begin, ensure that you have satisfied all the Operations Console hardware requirements for the PC and system.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

Changing the console from a local console directly attached to a local console on a network (LAN) in a non-partitioned or primary partitioned system:

To change from an Operations Console with local console directly attached to a local console on a network (LAN), follow these steps on the system, using the existing console.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST).
2. Select **Work with DST environment**. You must unlock the SST option **Service tools device IDs** before it is usable.
3. Select **System Devices** (skip this step if using SST).
4. Select **Select Console**.
5. Select **Operations Console (LAN)**. The Verify Operations Console Adapters window. This is the resource found by the system to be used for your LAN connection. If you get a message stating that the LAN adapter was not found, you have not satisfied the hardware requirements for Operations Console.
6. Press F11 to configure the adapter.
7. Enter the appropriate network data.
8. Press F7 to store the data.
9. Press F14 to activate the adapter for use by Operations Console.
10. Press F3 to return to the DST main menu.

The system is now configured for use by Operations Console local console on a network when an action is taken to search for a new console. This could include an IPL, the native macro, or the console service function (65+21). Do NOT take an action to switch to the new console until you have satisfied any necessary PC configurations.

The system value QAUTOCFG must be set to on. Use one of the following methods to verify or set this system value:

- Use the WRKSYSVAL QAUTOCFG command.
- During a manual IPL, in the IPL Options window, select **Y** for **Set major system options**. Then, for **Enable automatic configuration**, select **Y**.

| Continue with Configure the PC to use the new console type.

Related tasks

"Configuring the PC to use the new console type when changing from a local console directly attached to a local console on a network" on page 69
To change from an Operations Console with local console directly attached to a local console on a network (LAN), you must configure the PC to use the new console type.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

Related information

Access service tools

Changing the console from a local console directly attached to a local console on a network in a logical partition:

To change from an Operations Console with a local console directly attached to a local console on a network (LAN), follow these steps on the system using the existing console.

Note: If you need to add or move adapters to satisfy the hardware requirements for Operations Console, do this work prior to starting these steps.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST). You must unlock the SST option ″Service tools device IDs″ before it is usable.
2. Select **Work with System Partitions**.
3. Select **Work with partition configuration**.
4. Choose **Select Console Resource** on the logical partition.
5. Press F9 to **Change capability filter**.
6. Select **Any Console**.
7. To select the IOP that will support your intended console, do one of the following:
   - If the adapter to be used for the intended console is under the same IOP as the previous console's adapter, the console IOP is already correctly tagged. Go to step 8.
   - If the adapter to be used for the intended console is under a different IOP than the currently configured console, place a 1 in front of the IOP to select it as the console IOP.
8. Verify an adapter for Electronic Customer Support (ECS) and an optional alternate console (twinaxial console only).

   Note: The selection of an alternate console only pertains when twinaxial workstations are to be the alternate console and the console type is also twinaxial console. The alternate console must be under a different IOP than the IOP tagged for use by Operations Console. Operations Console cannot be used as an alternate console.

   - To verify the console IOP for ECS, perform the following steps:

   Note: If you use Operations Console as your console type, you must also tag the same IOP used for the console as the IOP for ECS.

   a. Press F12 until you arrive at the **Work with Partition Configuration** window.
   b. Enter a **9** in front of the partition to be tagged for ECS.
   c. Look at the symbols on the same line as the tagged console IOP (the console tag is the < symbol) for the ECS symbol, which is the + (the plus sign). If the + symbol is shown, the IOP is correctly tagged for ECS. Go to step 9.
   d. To tag the console IOP for ECS, enter a **1** in front of the IOP to be tagged for ECS.

      Note: If you will be using Operation Console as the intended console you should now see both a < and a + associated with the console IOP.
9. Press F3 to exit to the DST main menu.
10. Select **Work with DST environment**.
11. Select **System Devices**(skip this step if using SST).
12. Select **Select Console**.
13. Select **Operations Console (LAN)**:
    a. The Verify Operations Console Adapters window appears. This is the resource found by the system to be used for your LAN connections. If you receive the message **No valid LAN adapter available** you did not satisfy the hardware requirements for Operations Console. If so, use F3 to exit to the DST main menu, then, start this topic again at step 1.
    b. Press F11 to configure the adapter.
    c. Enter the appropriate network data.
    d. Press F7 to store the data.
    e. Press F14 to activate the adapter for use by Operations Console.

14. Press F3 until you return to the DST main menu.

The system is now configured for use by Operations Console local console on a network when an action is taken to search for a new console. This could include an IPL, the native macro, or the console service function (65+21). Do NOT take an action to switch to the new console until you have satisfied any necessary PC configurations. If you do not plan to use the local console directly attached configuration as a backup console, you do not need to remove or move its adapter at this time. You may need it to debug problems.

The system value QAUTOCFG must be set to on. Use one of the following methods to verify or set this system value:

- Use the WRKSYSVAL QAUTOCFG command.
- During a manual IPL, in the IPL Options window, select **Y** for **Set major system options.** Then, for **Enable automatic configuration**, select **Y**.

Related tasks

"Configuring the PC to use the new console type when changing from a local console directly attached to a local console on a network"
To change from an Operations Console with local console directly attached to a local console on a network (LAN), you must configure the PC to use the new console type.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

Related information

Access service tools

Configuring the PC to use the new console type when changing from a local console directly attached to a local console on a network:

To change from an Operations Console with local console directly attached to a local console on a network (LAN), you must configure the PC to use the new console type.

Follow these steps on the PC:

1. Disconnect the current console connection. To disconnect, do the following:
   a. Select the configuration name (under iSeries Connection). This is the name that Operations Console uses to refer to a specific system.
   b. From the Connection menu, click **Disconnect**. The connection status shows **Disconnecting**.
   c. Wait for the status to show **Disconnected**.
2. Configure the new console type. It is preferred that you perform an initial program load (IPL) to be certain there are no errors.

   Once you are satisfied that the new console is working correctly, you can proceed with any plans to move or remove any adapter or configurations.

   If you do not use the cabled connection as a backup console, you can remove the console cable, the remote control panel cable, or both cables from the PC at this time. To avoid potential errors, turn off the system before removing or adding cables from the system.

   To delete the current configuration if you will not be using the cabled connection as a backup console, do the following:

   a. Select the configuration name (under iSeries Connection).
   b. From the **Connection** menu, click **Delete**.
   c. Click **Yes** to confirm the deletion.

Note: It is preferred that you turn off the system when removing adapter cards or cables.

Related concepts

"PC preparations for Operations Console" on page 30
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

Changing from a local console on a network (LAN) to a local console directly attached

You can use one of the procedures in these topics to change from a local console on a network (LAN) to a local console directly attached to the server.

Changing the console from local console on a network (LAN) to a local console directly attached for a non-partitioned system or a primary partition:

To migrate an Operations Console local console on a network (LAN) to a local console directly attached, you need to follow these steps on the system using the existing console.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST). You must unlock the SST option ″Service tools device IDs″ before it is usable.
2. Select **Work with DST environment**.
3. Select **System Devices** (skip this step if using SST).
4. Select**Select Console**.
5. Select **Operations console (LAN)**. The Verify Operations Console Adapters window appears. This is the resource found by the system to be used for your LAN connection.

   Note: If this resource will be used for the service tools server (iSeries Navigator connections) or you plan to use the local console on a network (LAN) as a backup console then you do not need to do the clear. If either of these choices is true, continue with step 12.
6. Press F11 to configure the adapter.
7. Press F6 to perform a clear.
8. Press F7 to store the new values.
9. If you are not currently using this resource for the console connection, press F13 to deactivate the adapter. You will be required to use another console type or resource on the next IPL.

   Note: If you are doing this work from a local console on a network connection this deactivation will cause your console connection to close and you may not be able to restart it without an IPL.
10. Press F12 twice to exit this window. You should have returned to the **Work with System Devices** window. If you're using SST, this returns you to Work with Service Tools User IDs and Devices.
11. Select **Select Console**.
12. Select **Operations console (direct)**.

    Important: You must change the console type to something other than Operations Console (LAN) or the adapter will get reallocated on the next IPL.
13. Press F3 to return to the DST main menu.

The system is now configured for use by your intended console type.

If you do not plan to use the local console on a network (LAN) configuration as a backup console, you do not need to remove or move the LAN adapter at this time. If you encounter a problem with your new console choice, you might need this resource to debug the problem. When you get your new console choice working, you can remove the LAN adapter from the system or move it to another location.

The system value QAUTOCFG must be set to on. Use one of the following methods to verify or set this system value:

- Use the WRKSYSVAL QAUTOCFG command.
- During a manual IPL, in the IPL Options window, select **Y** for **Set major system options.** Then, for **Enable automatic configuration**, select **Y**.

Continue with Configure the PC to use the new console type.

Related tasks

"Configuring the PC to use the new console type" on page 73
After changing from a local console on a network to a local console directly attached, you must configure the PC to use the new console type.

Related information

Access service tools

Changing the console from local console on a network (LAN) to a local console directly attached for a logical partition:

To migrate Operations Console with a local console on a network (LAN) to a local console directly attached, follow these steps on the system using the existing console.

Note: If you need to add or move adapters to satisfy the hardware requirements for Operations Console, do this work prior to starting these migration steps.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST).
2. Select **Work with System Partitions**.
3. Select **Work with partition configuration**.
4. Choose **Select Console Resource** on the logical partition.
5. Press F9 to **Change capability filter**.
6. Select **Any Console** (option 4).
7. To select the IOP that will support your intended console, do one of the following:
   - If the adapter to be used for the intended console is under the same IOP as the previous console's adapter, the console IOP is already correctly tagged. Go to step 8.
   - If the adapter to be used for the intended console is under a different IOP than the currently configured console, place a **1** in front of the IOP to select it as the console IOP.
8. Verify an adapter for Electronic Customer Support (ECS) and an optional alternate console.
   - To verify the tagging for an alternate console, find the IOP with the twinaxial adapter that will be used for the alternate console. It is properly tagged if you see a **>** (greater than) symbol on the same line. If the **>** is not on this line, enter an option **2** in front of the IOP being selected as the alternate console.

     Note: The selection of an alternate console only pertains when twinaxial workstations are to be the alternate console and the console type is also twinaxial console. The alternate console must be under a different IOP than the IOP tagged for use by Operations Console. Operations Console cannot be used as an alternate console.
   - To verify the console IOP for ECS, perform the following steps:

     Note: If you use Operations Console as your console type, you must also tag the same IOP used for the console as the IOP for ECS even if you do not use ECS.

     a. Press F12 until you arrive at the **Work with Partition Configuration** window.
     b. Enter a 9 in front of the partition to be tagged for ECS.

c. Look at the symbols on the same line as the tagged console IOP (the console tag is the < symbol), for the ECS symbol which is the + (the plus sign). If the + symbol is shown, the IOP is correctly tagged for ECS. Go to step 9.

d. To tag the console IOP for ECS, enter a 1 in front of the IOP to be tagged for ECS.

Note: If you will be using Operation Console as the intended console you should now see both a < and a + associated with the console IOP.

9. Press F3 to return to the DST main menu.
10. Select **Work with DST environment** (skip this step if using SST).
11. Select **System Devices**(skip this step if using SST).
12. Select **Select Console**.
13. Select **Operations Console (LAN)**: The Verify Operations Console Adapters window appears. This is the resource found by the system to be used for your LAN connections.

    Note: If this resource will be used for the service tools server (iSeries Navigator connections) or you plan to use the local console on a network (LAN) as a backup console then you won't need to do the clear. If either of these choices is true, continue with step 17.
14. Press F6 to perform a clear.
15. Press F7 to store the new values.
16. If you are not currently using this resource for the console connection, press F13 to deactivate the adapter. You will be required to use another console type or resource on the next IPL.

    Note: If you are doing this work from a local console on a network connection, this deactivation will cause your console connection to close and you may not be able to restart it without an IPL.
17. Press F12 twice to exit this window. You should return to the **Work with System Devices** window. If you're using SST, this returns you to Work with Service Tools User IDs and Devices.
18. Select **Select Console**.
19. Select **Operations console (direct)**.

    Important: You must change the console type to something other than Operations Console (LAN) or the adapter will get reallocated on the next IPL.
20. Press F3 until you return to the DST main menu.

The system is now configured for use by your intended console type.

If you do not plan to use the local console on a network (LAN) configuration as a backup console, do not remove or move the LAN adapter at this time. If you encounter a problem with your new console choice, you might need this resource to debug the problem. When you get your new console choice working, you can remove it from the system or move it to another location.

The system value QAUTOCFG must be set to on. Use one of the following methods to verify or set this system value:

- Use the WRKSYSVAL QAUTOCFG command.
- During a manual IPL, in the IPL Options window, select **Y** for **Set major system options.** Then, for **Enable automatic configuration**, select **Y**.

Related tasks

"Configuring the PC to use the new console type" on page 73
After changing from a local console on a network to a local console directly attached, you must configure the PC to use the new console type.

Related information

Access service tools

Configuring the PC to use the new console type:

After changing from a local console on a network to a local console directly attached, you must configure the PC to use the new console type.

Perform the following steps on the PC:

Note: If you have not connected the cables for this connection type, connect the cables now.

It is preferred that you turn off the system when removing adapter cards or cables.

1. Disconnect the current console connection. To disconnect, do the following:
   a. Select the configuration name (under iSeries Connection). This is the name that Operations Console uses to refer to a specific system.
   b. From the Connection menu, click **Disconnect**. The connection status shows **Disconnecting**.
   c. Wait for the status to show **Disconnected**.
2. To configure the new console type, see the Set up a local console directly attached to the server topic. It is recommended that you perform an attended initial program load (IPL) to be certain there are no errors. Also, you may not want to delete your old configuration until you have a successful connection using the new configuration.

   Once you are satisfied that the new console is working correctly you can proceed with any plans to move or remove any adapter or configurations.

   To delete the current configuration if you will not be using the cabled connection as a backup console do the following:
   a. Select the configuration name (under iSeries Connection).
   b. From the Connection menu, click **Delete**.
   c. Click **Yes** to confirm the deletion.

Related reference

"Setting up a local console directly attached to the server" on page 31
You need to complete the unique setup prerequisites checklist based on the configuration and the operating system you are using.

Changing from a twinaxial console to an Operations Console

To change from a twinaxial console to an Operations Console, you need to perform a set of steps on both the PC and the system.

Before you begin, ensure that you have satisfied all the Operations Console hardware requirements for the PC and the system.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

Changing the console from a twinaxial console to an Operations Console in a non-partitioned or primary partitioned system:

To change from a twinaxial console to an Operations Console, you must use the existing console to perform these steps on the system.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST). You must unlock the SST option "Service tools device IDs" before it is usable.
2. Select **Work with DST environment**.
3. Select **System Devices** (skip this step if using SST).
4. Select **Select Console**.

5. Select the new console type.
   - If you selected an Operations Console (LAN), do the following:
   a. The Verify Operations Console Adapters window appears. This is the resource found by the system to be used for your LAN connection. If you receive a message stating that the LAN adapter was not found, you need to satisfy the hardware requirements for Operations Console.
   b. Press F11 to configure the adapter.
   c. Enter the appropriate network data.
   d. Press F7 to store the data.
   e. Press F14 to activate the adapter for use by Operations Console.
   - If you selected an Operations Console (direct), continue with step 6.
6. Press F3 until you return to the DST main menu.

The system is now configured for use by your intended console type.

If you do not plan to use the twinaxial device as a backup console do not remove it or its adapter at this time. You may need it to debug a problem.

The system value QAUTOCFG must be set to on. Use one of the following to verify or set this system value:

- Use the WRKSYSVAL QAUTOCFG command.
- During a manual IPL, in the IPL Options window, select **Y** for **Set major system options.** Then, for **Enable automatic configuration**, select **Y**.

Continue with Configure the PC.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

"Configuring the PC to use the new console type after changing from a twinaxial console to an Operations Console" on page 76
To change from a twinaxial console to an Operations Console, you must configure the PC to use the new console type.

Related information

Access service tools

Changing the console from a twinaxial console to an Operations Console in a logical partition:

To change from a twinaxial console to an Operations Console, you must perform these steps on the system using the existing console before turning off the system or performing an initial program load (IPL).

Note: If you need to add or move adapters to satisfy the hardware requirements for Operations Console, do this work before starting these migration steps. Do not move or remove the twinaxial adapter from its current input and output processor (IOP) at this time.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST). You must unlock the SST option "Service tools device IDs" before it is usable.
2. Select **Work with System Partitions**.
3. Select **Work with partition configuration**.
4. Choose **Select Console Resource** on the logical partition.
5. Press F9 to **Change capability filter.**
6. Select **Any Console**.

7. To select the IOP that will support your intended console, do one of the following:
   - If the adapter to be used for the intended console is under the same IOP as the previous console's adapter, the console IOP is already correctly tagged. Go to step 8.
   - If the adapter to be used for intended console is under a different IOP than the currently configured console, place a 1 in front of the IOP to select it as the console IOP.
8. Verify the adapter for Electronic Customer Support (ECS) and an optional alternate console (twinaxial console only).

   Note: The selection of an alternate console only pertains when twinaxial workstations are to be the alternate console and the console is also twinaxial console. The alternate console **must** be under a different IOP than the IOP tagged for use by Operations Console. Operations Console cannot be used as an alternate console.

   - To verify the console IOP for ECS, perform the following steps:

   Note: If you use Operations Console as your console type, you must also tag the same IOP used for the console as the IOP for ECS even if you do not use ECS.

   a. Press F12 until you arrive at the **Work with Partition Configuration** window.
   b. Enter a 9 in front of the partition to be tagged for ECS.
   c. Look at the symbols on the same line as the tagged console IOP (the console tag is the < symbol) for the ECS symbol which is the + (the plus sign). If the + symbol is shown, the IOP is correctly tagged for ECS. Go to step 9.
   d. To tag the console IOP for ECS, enter a 1 in front of the IOP to be tagged for ECS.

   Note: If you will be using Operation Console as the intended console you should now see both a < and a + associated with the console IOP.
9. Press F3 to exit to the DST main menu.
10. Select **Work with DST environment**.
11. Select **System Devices** (skip this step if using SST).
12. Select **Select Console**.
13. Use one of the following console choices to select the new console type.
    - If you select Operations Console (direct), option 2, continue with step 14.
    - If you select Operations Console (LAN), option 3, do the following:
    a. The Verify Operations Console Adapters window appears. This is the resource found by the system to be used for your LAN connection. If you receive the message **No valid LAN adapter available** you did not satisfy the hardware requirements for Operations Console. If so, use F3 to exit to the DST main menu, then, start this topic again at step 1 above.
    b. Press F11 to configure the adapter.
    c. Enter the appropriate network data.
    d. Press F7 to store the data.
    e. Press F14 to activate the adapter for use by Operations Console.
14. Press F3 until you return to the DST main menu.

The system is now configured for use by your intended console type.

If you do not plan to use the twinaxial device as an backup console do not remove it or its adapter at this time. You may need it to debug a problem.

The system value QAUTOCFG must be set to **ON**. Use one of the following methods to verify or set this system value:

- Use the WRKSYSVAL QAUTOCFG command.

- During a manual IPL, in the IPL Options window, select **Y** for **Set major system options.** Then, for **Enable automatic configuration**, select **Y**.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

"Configuring the PC to use the new console type after changing from a twinaxial console to an Operations Console"
To change from a twinaxial console to an Operations Console, you must configure the PC to use the new console type.

Related information

Access service tools

Configuring the PC to use the new console type after changing from a twinaxial console to an Operations Console:

To change from a twinaxial console to an Operations Console, you must configure the PC to use the new console type.

It is preferred that you perform an initial program load (IPL) to ensure there are no errors. Then, at a later time, remove or move any hardware you planned for.

It is perferred that you turn off the iSeries when removing adapter cards or cables.

Note: If the new console fails to work in i5/OS you may need to use another workstation to manually delete the controller and device description associated with the old console device.

Related concepts

"PC preparations for Operations Console" on page 30
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can create and go through a checklist for setting up Operations Console.

Changing from an Operations Console to a twinaxial console

To change from an Operations Console to a twinaxial console, you must perform steps on the system and, optionally, on the PC.

Before you begin, make sure that you have satisfied all the Operations Console hardware requirements for the PC and the system.

Related reference

"Operations Console hardware requirements" on page 18
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

Changing the console from an Operations Console to a twinaxial console in a non-partitioned or primary partitioned system:

To change from an Operations Console to a twinaxial console, follow these steps on the system using the existing console.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST).
2. Select **Work with DST environment**.
3. Select **System Devices** (skip this step if using SST).
4. Select **Select Console** .

5. If you are currently using Operations Console local console on a network (LAN), select Operations Console (LAN) and follow these steps to deallocate the network adapter:

   Note: If this resource will be used for the service tools server (iSeries Navigator connections) or you plan to use the local console on a network (LAN) as a backup console then you won't need to do the clear. If either of these choices is true, continue with step 5e.

   a. Select **Operations Console (LAN)**. The LAN adapter currently in use should be shown.
   b. Press F11.
   c. Press F6 to clear the configuration data.
   d. Press F7 to store this new value. **Optionally**, you can deactivate the network card by pressing F13.
   e. Press F12 twice to exit this window.
   f. Select **Select Console**.
6. Select **Twinaxial**.
7. Press F3 to return to the DST main menu.

The system is now configured for use by your intended console type.

If you do not plan to use the local console directly attached configuration as a backup console, do not remove or move it or its adapter at this time. You may need it to debug a problem.

The iSeries system value QAUTOCFG must be set to on. Use one of the following to verify or set this system value on the system:

- Use the WRKSYSVAL QAUTOCFG command.
- During a manual IPL, in the IPL Options window, select **Y** for **Set major system options.** Then, for **Enable automatic configuration**, select **Y**.

Continue with Performing optional steps on the PC.

Related tasks

"Deallocating or moving the LAN adapter card from use by Operations Console" on page 86
During a migration, you might need to deallocate the LAN card from use by Operations Console. You need to deallocate the LAN card if you are not planning on using an Operations Console local console on a network configuration or the service tools server.

"Performing optional steps on the PC when changing from an Operations Console to a twinaxial console" on page 79
If the PC will not be used for Operations Console, follow these steps:

Related information

Access service tools

Changing the console from an Operations Console to a twinaxial console in a logical partition:

To change from an Operations Console to a twinaxial cable, you need to follow these steps on the system using the existing console.

Note: If you need to add or move adapters to satisfy the hardware requirements for the twinaxial console, do this work before starting these steps. Do not move or remove the twinaxial adapter from it's current input and output processor (IOP) at this time.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST). You must unlock the SST option "Service tools device IDs" before it is usable.
2. Select **Work with System Partitions**.
3. Select **Work with partition configuration**.
4. Choose **Select Console Resource** on the logical partition.

5. Press F9 to **Change capability filter.**
6. Select **Any Console**.
7. To select the IOP that will support your intended console, do one of the following:
   - If the adapter to be used for the intended console is under the same IOP as the previous console's adapter, the console IOP is already correctly tagged. Go to step 8.
   - If the adapter to be used for intended console is under a different IOP than the currently configured console, place a **1** in front of the IOP to select it as the console IOP.
8. Verify an adapter for use as an optional alternate console. To verify the tagging for an alternate console, find the IOP with the twinaxial adapter that will be used for the alternate console. It is properly tagged if you see a > (greater than) symbol on the same line. If the > is not on this line, enter an option 2 in front of the IOP being selected as the alternate console.

   Note: The selection of an alternate console only pertains when twinaxial workstations are to be the alternate console and the console type is also twinaxial console. The alternate console **must** be under a different IOP than the IOP tagged for use by Operations Console. Operations Console cannot be used as an alternate console. Do **not** tag the same IOP for the console and the alternate console.
9. Press F3 to exit to the DST main menu.
10. Select **Work with DST environment**.
11. Select **System Devices** (skip this step if using SST).
12. Select **Select Console**.
13. If you are currently using Operations Console local console on a network (LAN), select Operations Console local console on a network (LAN) and follow these steps to deallocate the network adapter:

    Note: If this resource will be used for the service tools server (iSeries Navigator connections) or you plan to use the local console on a network (LAN) as a backup console then you won't need to do the clear. If either of these choices is true, continue with step 13e.

    a. Select **Operations Console (LAN)**. The LAN adapter currently in use should be shown.
    b. Press F11.
    c. Press F6 to clear the configuration data.
    d. Press F7 to store this new value.
    e. Press F12 twice to exit this window.
    f. Select **Console**.
14. Select **Twinaxial**.
15. Press F3 to return to the DST main menu.

The system is now configured for use by your intended console type.

If you do not plan to use Operations Console as a backup console, do not remove or move it or its adapter at this time. You may need it to debug problems.

The system value QAUTOCFG must be set to **ON**. Use one of the following methods to verify or set this system value on the system:

- Use the WRKSYSVAL QAUTOCFG command.
- During a manual IPL, in the IPL Options window, select **Y** for **Set major system options.** Then, for **Enable automatic configuration**, select **Y**.

Continue with Performing optional steps on the PC when changing from an Operations console to a twinaxial console.

Related tasks

"Performing optional steps on the PC when changing from an Operations Console to a twinaxial console"
If the PC will not be used for Operations Console, follow these steps:

Related information

Access service tools

Performing optional steps on the PC when changing from an Operations Console to a twinaxial console:

If the PC will not be used for Operations Console, follow these steps:

Important: Perform these steps only after you are sure there are no problems with the twinaxial console.

1. Disconnect the current console connection. To disconnect, do the following:
   a. Select the configuration name (under iSeries Connection). This is the name that Operations Console uses to refer to a specific system.
   b. From the Connection menu, click **Disconnect**. The connection status shows **Disconnecting**.
   c. Wait for the status to show **Disconnected**.
2. Cable the twinaxial console to the system and power on the twinaxial console and the system.
3. Perform an initial program load (IPL) to ensure there are no errors. Then, at a later time, remove or move any hardware you planned for. When you are satisfied with your new console delete the current configuration if you will not be using the cabled connection as a backup console. To delete the configuration, do the following:
   a. Select the configuration name (under iSeries Connection).
   b. From the Connection menu, click **Delete**.
   c. Click **Yes** to confirm the deletion.
   d. Uninstall iSeries Access for Windows.

Turn off the PC and remove any hardware and cables that are no longer needed at this time. It is recommended that you turn off the system before removing any cables or adapters from the system.

Note: If the new console fails to work in i5/OS you may need to use another workstation to manually delete the controller and device description associated with the old console device.

Related tasks

"Changing the console from an Operations Console to a twinaxial console in a non-partitioned or primary partitioned system" on page 76
To change from an Operations Console to a twinaxial console, follow these steps on the system using the existing console.

"Changing the console from an Operations Console to a twinaxial console in a logical partition" on page 77
To change from an Operations Console to a twinaxial cable, you need to follow these steps on the system using the existing console.

Managing your local console on a network

After you configure a local console on a network, you can manage your console by performing tasks such as managing the service tools device ID password and access password, creating service tools device ID, and configuring a service host name.

Considerations for changing the service tools device ID passwords

You need to review these considerations before you reset the service tools device ID password.

Note: You must unlock the SST option before the option is usable.

- The service tools device ID password on the PC must be the same as the service tools device ID password on the system. If you change one, you have to change the other.
- Operations Console encrypts the service tools device ID password when you click **Next** in the **Access Password** window.
- If you are creating a new local console on a network configuration (you have not connected yet) and click **Cancel** after the Access Password window, you can re-create the configuration with the same service tools device ID.
- Operations Console changes and re-encrypts the service tools device ID password during each successful connection.
- If you delete the local console on a network configuration after making at least one successful connection, you need to reset the service tools device ID password on the system before you reuse the profile for a new local console on a network configuration.

Related tasks

"Using service tools device IDs in system service tools" on page 96
With the Work with service tools user IDs and Devices option, you can change Operations Console configuration data from system service tools (SST) .

Related reference

"Resynchronizing the PC and service tools device ID password" on page 81
When a mismatch occurs in the service tools device ID password between the system and the Operations Console PC, you need to resynchronize the password by performing recovery steps on both the PC and the system.

"Changing the service tools device ID password on the PC and system"
There is no advantage of changing the service tools device ID password unless the passwords on the PC and system are out of synchronization.

Changing the service tools device ID password on the PC and system

There is no advantage of changing the service tools device ID password unless the passwords on the PC and system are out of synchronization.

If this is the case, see the Resynchronize the PC and service tools device ID password topic for how to make them both the same again. Since this password is actually changed at each successful connection, manually changing the password, except for synchronization, is not recommended.

Related reference

"Considerations for changing the service tools device ID passwords" on page 79
You need to review these considerations before you reset the service tools device ID password.

"Resynchronizing the PC and service tools device ID password" on page 81
When a mismatch occurs in the service tools device ID password between the system and the Operations Console PC, you need to resynchronize the password by performing recovery steps on both the PC and the system.

Changing the access password

You can change the password used to access the service tools device ID information at any time after the creation of a new local console on a network configuration. If you are working with partitions, you can change this password for the corresponding partition.

Note: The password is case sensitive and can be a maximum of 128 characters of mixed case. It is important that you remember this password. You will use this password during the connection process to sign on through the**LAN Service Device Sign-on** window.

To use the connection properties to change the access password, follow these steps:

1. Select the connection name for which you will be changing the access password.
2. Click **Connection** → **Properties**.

3. Select the **Access Password** tab.
4. For **Current Password** enter what you currently use for the access password.
5. Enter the new password into the **New Password** and **Confirm password** fields, and then click **OK**.

Resynchronizing the PC and service tools device ID password

When a mismatch occurs in the service tools device ID password between the system and the Operations Console PC, you need to resynchronize the password by performing recovery steps on both the PC and the system.

Note: You need to access Dedicated Service Tools (DST) or System Service Tools (SST) to reset using the service tool device. If there is already a console device present, you can use it. Otherwise, you might need to temporarily attach another console such as:

- Using a different local console on a network (LAN), if available.
- Reconfigure the same local console on a network (LAN) using an unused emergency service tools device ID.
- Using an Operations Console local console directly attached to the server (if an Operations Console cable is available).
- Using a twinaxial-attached console.
- Use the control panel or remote control panel to reset QCONSOLE.

Related tasks

"Creating service tools device IDs on the system" on page 84
You will need to set up service tools device IDs on the system for a local console on a network configuration.

Related reference

"Considerations for changing the service tools device ID passwords" on page 79
You need to review these considerations before you reset the service tools device ID password.

Resetting the service tools device ID password on the system:

To reset the service tools device ID password on the system, you need to perform these steps.

Note: To perform the following procedure using SST, select the option **Work with service tools user IDs and Devices** everywhere it says select **Work with DST environment** and skip the step **Select System devices**. You must unlock the SST option before the option is usable.

Related tasks

"Using service tools device IDs in system service tools" on page 96
With the Work with service tools user IDs and Devices option, you can change Operations Console configuration data from system service tools (SST) .

"Resetting the service tools device ID password on the PC" on page 83
You no longer need to manually reset a connections service tools device ID password on the client PC.

Related information

Control panel

Access service tools

Using a console session with another device:

If you can obtain a console session or access SST using another device, reset the service tools device ID password.

By doing this, the service tools device ID password becomes the service tools device ID name, in uppercase. To reset the service tools device ID, follow these steps:

1. Access Dedicated Service Tools (DST) or System Service Tools (SST).

2. From the DST main menu, do the following steps:
   a. Select **Work with DST environment**.
   b. Select **Service tools device IDs**.
3. Type 2 in front of the service tools device ID to be reset, and then press Enter.
4. Press Enter again to confirm the reset.

   Note: When you reset the password in DST, the service tools device ID password becomes the service tools device ID name in uppercase. If you delete and create a device ID, you also need to delete and create the connection on the PC.

Using unused service tools device ID:
If you do not have another device (PC or other terminal) to sign on to the system, but do have an unused service tools device ID, do the following on the PC.

1. Delete the current configuration as follows:
   a. Select the configuration name (under iSeries connection).
   b. From the **Connection** menu, click **Delete**.
   c. Click **Yes** to confirm the deletion if prompted.
2. Use the unused service tool device ID to create a new configuration.
3. Use one of the previous methods to reset the failing service tools device ID after connecting.

Using the control panel or the remote control panel to reset the QCONSOLE service device ID password:
If you cannot use another service tools device (PC or other terminal) or service tools device ID to sign on and you are using the QCONSOLE service tools device ID, you need to use the control panel or the remote control panel to reset the service tools device ID password by following these steps.

1. Place the system in Manual mode. Systems without a keystick shows 01 B in the Function/Data display.

   Note: Systems with a keystick should show the mode as Manual and 01 B in the Function/Data display.
2. Use the following information to help determine your progress and success of the reset:

   Note: If your system uses the new double-row Function/Data display control panel, you might need to perform a function 11 to display the results (D1008065). Allow at least 15 seconds for the initial function 65 to complete before doing a function 11 if the display does not respond with the D1008065.

   The double-row display control panel presents data like this (models 270 and 8xx):

   xxxxxxxxxxxxxxxx
   xxxxxxxxxxxxxxxx

   Each word is 8 characters but 4 words are displayed at a time for words 12 through 19. For example, requesting word 12 will provide you:

   word__12word__13
   word__14word__15

   Requesting word 13 will provide you:

   word__16word__17
   word__18word__19

   The single-row display control panel and the remote control panel presents data like this:

xxxxxxxx

Each word is 8 characters only and displayed individually. If you want word 17, you have to request function 17.

The data provided in the words can be accessed using many different methods.

Important: In order to know where you are in the process the following information is provided:

- Word 17 of the SRC D1008065 will contain the the number of function 65s you have done. When it reaches a count of 7, the reset of the service tools device ID password will take place. Word 18 will then be set to `00000000`.
- Word 18 will show 00000001 until you have entered the seventh function 65. When the reset has completed, this word will be set to `00000000` unless more than five minutes have elapsed.

  Note: If you enter function 65 more than seven times, the count will start over.

3. Use one of the following methods to reset the QCONSOLE service tools device ID depending on the partition type:
   - For independent systems or primary partitions, follow these steps:
   a. From the control panel, use the Up or Down buttons so that Function/Data display shows **25**. Then press the Enter button. The Function/Data display should show **25 00**.
   b. Use the Up button once to increment the data to **26**. Then, press the Enter button. The system will most likely respond with **01 B** in the Function/Data display.

      Note: If the system responds with **65 FF** repeat steps a and b again.
   c. Using the Down button, decrement the data to **65**, and then press the Enter button. The system will respond with **65 00**. After processing the function the system will respond with a D1008065. Repeat this step so that you have entered 7 function 65s. You will have five minutes to complete this task. When the seventh 65 is entered and if it is found that greater than five minutes have elapsed, the reset will not be processed and the count will return to zero. Check WORD17 to verify that the system handled each request. Entering the 65s quickly may cause the system to miss the entries.
   - For secondary partitions, follow these steps using the console on the primary partition:
   a. Access Dedicated Service Tools (DST) or System Service Tools (SST).

      Note: You must unlock the SST option before the option is usable.
   b. Select **Work with system partitions**.
   c. Select **Work with partition status**.

      Note: If the partition on which the reset will be performed is not in manual mode, you need to force the partition into manual mode by placing a `10` on the line for the partition selection area before continuing.
   d. Enter a `65` on the line for the partition to be reset, then press Enter.
   e. Repeat this step so that you have entered 7 function 65s. You will have five minutes to complete this task. When the seventh 65 is entered and more than five minutes have elapsed, the reset will not be processed and the count will return to zero.

Proceed to reset the service tools device ID password on the PC.

Resetting the service tools device ID password on the PC:

You no longer need to manually reset a connections service tools device ID password on the client PC.

If the password is reset on the system, the next connection made by the client automatically tries the reset password if using the current value fails. If successful, the newly generated password is saved for the next connection.

If you suspect that the automatic process failed and you want to manually reset the password, complete one of the tasks described in the subtopics.

Related tasks

"Resetting the service tools device ID password on the system" on page 81
To reset the service tools device ID password on the system, you need to perform these steps.

Deleting the configuration and re-creating it:
To delete the configuration and re-create it, follow these steps.

1. If the console is connected, disconnect it by following these steps:
   a. Select the configuration name (under iSeries Connection). This is the name that Operations Console uses to refer to a specific system.
   b. From the **Connection** menu, click **Disconnect**. The connection status shows `Disconnecting`.
   c. Wait for the status to show `Disconnected`.
2. Delete the configuration:
   a. Select the configuration name (under iSeries Connection) that you want to delete.
   b. From the **Connection** menu, click **Delete**.
   c. Click **Yes** to confirm the deletion if prompted.
3. Re-create the configuration with the service tools device ID you previously reset or with the new service tools device ID.

Resetting the password:
To reset the password for the same service tools device ID, follow these steps.

1. Select the connection name that you will be making the change for, and then select **Connection** → **Properties**.
2. Select the **Device ID** tab.
3. Click the **Reset** button, and then click **OK**.
4. The **Access Password** window opens. Enter the current access password, and then click **OK**.

Creating service tools device IDs on the system

You will need to set up service tools device IDs on the system for a local console on a network configuration.

Note: To perform the following procedure using system service tools (SST), select the option **Work with service tools user IDs and Devices** everywhere it says select **Work with DST environment** and skip Step 3. You must unlock the SST option before the option is usable.

1. Access dedicated service tools (DST) or system service tools (SST).
2. Select **Work with DST environment**.
3. Select **Service tools device IDs**.
4. Use option 1 to create a new service tools device ID and enter the new service tools device ID name in the first blank name field. Press Enter.
5. You can enter a description. Press Enter. You have finished creating a service tools device ID.

   Note: The device ID and the service tools user ID must have the proper authorities granted before the remote control panel and all it's functions are available for the associated partition. To verify or change the service tools device ID attributes you can press F5 (change attributes on the ″Create Service Tools Device ID″ screen or enter a **7** in front of the device ID on the ″Work with Service Tools Device IDs″ screen.

6. To create additional service tools device IDs, repeat the steps starting at step 4.
7. Press F3 when you finish creating your service tools device IDs.

Notes:

1. If you reset a service tools device ID, the password becomes the name of your service tools device ID in uppercase.
2. If you have more than one PC connected to your console, you need to create several service tools device IDs.
3. Sometimes the service tools device ID password has to be changed, such as when the password has to be resynchronized between the PC and the system. When a mismatch occurs in the service tools device ID password between the system and the Operations Console PC, you need to resynchronize the password by performing recovery steps on both the PC and the system.
4. QCONSOLE cannot be left in a reset state on the system. This is considered a security exposure.

Related reference

"Resynchronizing the PC and service tools device ID password" on page 81
When a mismatch occurs in the service tools device ID password between the system and the Operations Console PC, you need to resynchronize the password by performing recovery steps on both the PC and the system.

Related information

Service tools user IDs and passwords

Access service tools

Configuring a service host name (interface name)

The service host name (interface name) is the name that identifies the System i service connection on your network that is used for service tools, which includes an Operations Console local console on a network (LAN) configuration.

You need a service host name (interface name) any time a console or remote control panel is being connected using a network connection. One reason to add this function is when a system has been logically partitioned. Although the primary partition can have a non-networked console, a remote control panel to a secondary partition might be desirable.

Regardless of which method you use to implement the configuration data, the actual name and associated address used for the service host name depends on the network environment in which the system will be placed. The implementation method has no bearing on whether the configured connection is the first connection. Follow these guidelines when entering the name for the service host:

- For small network infrastructures in which only a few devices are connected, you can typically specify anything you want for the name and associated address. When you set up a small network, you can specify the name and an address range.
- For large network infrastructures managed by IT personnel, a specific name might be required. This avoids confusion with other devices on the same network, and might be used to allow the network infrastructure's equipment to know in advance what the connection name is and what address the connection will use to communicate on the network. Alternatively, you might be able to specify an original name, but the address might be given to you by the network administrator.

There are two methods to create a service host name (interface name):

- A service host name (interface name) cannot be created during the manufacturing process for a system that has Operations Console local console on a network (LAN) configuration ordered. The LAN adapter is installed and the correct console type is specified. Then, when the user gets the system, the Operations Console configuration wizard, when completed, supplies the system with the customer

network parameters, including the service host name (interface name). During the initial connection, this data finishes the system configuration for the network. This process is also known as *BOOTP*.

- The second method to create a service host name (interface name) is by using an existing console. This method could be used during a migration or an upgrade before disconnecting your old console. When using the following procedure, you can either verify or create the configuration for the System i service connection. You can find the service host name (interface name) by going into Dedicated Service Tools (DST), or System Service Tools (SST) on the partition that you are configuring and use the Configure Service Tools Adapter display. Enter the same name on the PC as the existing service host name (interface name) defined in DST or SST.

Note: You might need to temporarily change the console type to complete this work. You can also use any option pertaining to the service tools LAN adapter to verify the service host name or data.

To create a service host name (interface name):

Note: To perform the following procedure using SST, select the option **Work with service tools user IDs and Devices** everywhere it says select **Work with DST environment**. Also note that if you are using a console mode other than Operations Console (LAN), you can use the option **Configure service tools LAN adapter** to create or change the service host name or its data.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST).
2. Select **Work with DST environment**.
3. Select **System devices** (skip this step if using SST).
4. Select **Select Console**.
5. Select **Operations Console (LAN)** and press Enter. This should show Verify Operations Console Adapters.
6. Press F11 to configure.
7. The service host name (interface name) field contains the name. If you are creating a new service connection follow these steps:
   a. Enter the network data in the appropriate fields.
   b. Store your configuration by pressing F7.
   c. Activate the LAN adapter by pressing F14.
   d. Press F3 to exit.

Related reference

"Preparation for your network environment" on page 11
To prepare for your network environment, you need to identify and comply with the minimum network configuration required to set up an Operations Console local console on a network (LAN) configuration.

Related information

Service tools user IDs and passwords

Access service tools

Deallocating or moving the LAN adapter card from use by Operations Console

During a migration, you might need to deallocate the LAN card from use by Operations Console. You need to deallocate the LAN card if you are not planning on using an Operations Console local console on a network configuration or the service tools server.

After the LAN card is deallocated, you can move it or use it for another purpose. You must also be using a console type other than an Operations Console local console on a network (LAN) or the following steps will cause the console to disconnect. Follow these steps to deallocate the LAN adapter currently associated with an Operations Console local console on a network (LAN):

Note: To perform the following procedure using SST, select the option **Work with service tools user IDs and Devices** everywhere it says select **Work with DST environment**.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST).
2. Select **Work with DST environment**.
3. Select **System devices** (skip this step if using SST).
4. Select **Select Console**.
5. Select **Operations Console (LAN)**. The LAN adapter currently in use need to be shown.
6. Press F11.
7. Press F6 to perform a clear.
8. Press F7 to store the new values.
9. If you are not using this resource for the console, press F13 to deallocate the adapter. You will be required to use another console type or resource on the next IPL.

   Note: After you exit this window, do not enter the configuration again. Entering the configuration again will reallocate the LAN adapter resource to Operations Console.
10. Press F12 twice to exit this window. You should have returned to the **Work with System Devices** window. If you are using SST, this returns you to Work With Service Tools User IDs and Devices.
11. Select **Select Console**.
12. Select the console type you want to use.

Important: You must change the console type to something other than Operations Console (LAN) or the adapter will get reallocated on the next IPL.

Related tasks

"Changing the console from an Operations Console to a twinaxial console in a non-partitioned or primary partitioned system" on page 76
To change from an Operations Console to a twinaxial console, follow these steps on the system using the existing console.

Related reference

"Planning considerations for your Operations Console installation or upgrade" on page 23
To plan for your Operations Console installation or upgrade, you need to know this information.

"Changing from one console type to another" on page 66
Depending on how your console connection is set up, you can change to a different console type.

Related information

Access service tools

Changing network values for Operations Console (LAN)

If you need to make a change to the network adapter used for Operations Console (LAN), such as a new IP address, use these instructions.

Note: To perform the following procedure using SST, select the option **Work with service tools user IDs and Devices** everywhere it says select **Work with DST environment**.

1. Access Dedicated Service Tools (DST) or System Service Tools (SST).
2. Select **Work with DST environment**.
3. Select **System Devices** (skip this step if using SST).
4. Select **Select Console**.
5. Select **Operations Console (LAN)**. The LAN adapter currently in use should be shown.
6. Press F11.
7. Use one of the following methods to make your change:

- If you are making a simple change, such as the IP address, enter in the new values and continue with step 8.
- If you will be changing the adapter card press F6 to perform a clear. Continue with step 8.

8. Press F7 to store the new values.
9. Press F3 until the DST main menu appears.

   Important: If the change did not affect the network IP address or the service host name (interface name) you can exit these instructions now.

   If you made a change that caused the network IP address or service host name (interface name) to be different for the currently configured connections, this change must be reflected on all PCs that connect to this service host name (interface name). Since you cannot modify the network IP address or service host name (interface name) of an existing connection's configuration on the client you will have to delete the current connection and re-create a new connection using the new network IP address. Continue with the next step.
10. Reset the service tools device ID password on the system. To do this, follow these steps:

    Note: You must unlock the SST option before the option is usable.

    a. Select **Work with DST environment**.
    b. Select **Service tools device IDs**.
    c. Type 2 in front of the service tools device ID to be reset, and press Enter.
    d. Press Enter again to confirm the reset.

       Note: When you reset the password in DST, the device ID password becomes the device ID name in uppercase.

       Important: If more than one PC connects to this service host name (interface name) using a network connection you will have to delete the configurations and therefore reset the service tools device IDs of those PCs as well. To reset another service tools device ID, repeat this step.
    e. Press F3 until the DST main menu appears.
11. There are two methods for completing the necessary work in order to allow a new IP address or service host name (interface name). The first is using an IPL. This is the recommended method because you will have more control over when you do the remaining work on the PC. The system will continue to use the old values until an IPL or manual intervention. The second method is to perform the manual intervention, at this time. Perform one of the sets of steps below to complete the network changes.

    - **Using an IPL**

    This method requires that the client reconfiguration be complete prior to establishing the next connection using Operations Console on a network. If you are currently using the console connected via LAN you would normally start an IPL, it is recommended that the IPL be an attended IPL, and you can reconfigure the client during the initial stages of the IPL. You could, for example, use a different PC as the console instead of the one you currently have connected. You could do the configuration on that PC using the steps here, then after the IPL has been started you could disconnect the current console PC's connection and start a connection on the other PC with the newly created configuration. In this manner you could reconfigure the existing client at your leisure, before the next connection to the system.

    a. Start an attended IPL on the system.
    b. Continue with completing the PC changes.

    - **Perform the manual intervention**

    Perform these steps from the DST or SST main menu.

Note:

a. To perform the following procedure using SST, select the option **Work with service tools user IDs and Devices** everywhere it says select **Work with DST environment** and skip the step Select **System Devices**.

a. Select **Work with DST environment**.

b. Select **System Devices** (skip this step if using SST).

c. Select **Select Console**.

d. Select **Operations Console (LAN)**. The LAN adapter currently in use should be shown.

e. Press F11.

f. Press F17 to deactivate and reactivate the LAN adapter card.

Note: This will cause all LAN connected console PCs to go to `Connecting console` as a status. Also, if more than one LAN connected console PC is connected, the selection of the next console device is unpredictable.

g. Continue with completing the PC changes

The PC is now ready to make a connection. If you have already performed an IPL on the system, you are now ready to reconnect using the new network data.

Related tasks

"Using service tools device IDs in system service tools" on page 96
With the Work with service tools user IDs and Devices option, you can change Operations Console configuration data from system service tools (SST) .

"Starting the system using a manual IPL" on page 90
You can start your system by performing a manual initial program load (IPL).

"Completing the PC changes"
After making changes to the network values for Operations Console (LAN), you need to complete the changes to the PC.

Related information

Access service tools

Completing the PC changes:

After making changes to the network values for Operations Console (LAN), you need to complete the changes to the PC.

1. To delete the old configuration, perform these steps:
   a. Select the configuration name (under iSeries Connection). This is the name that Operations Console uses to refer to a specific system.
   b. From the Connection menu, click **Disconnect**. The connection status shows `Disconnecting`.
   c. Wait for the status to show `Disconnected`.
   d. Select the configuration name (under iSeries Connection).
   e. From the Connection menu, click **Delete**.
   f. Click **Yes** to confirm the deletion if prompted.
2. Close and reopen Operations Console in order to purge the PC of network data associated with the configuration you are changing.

   Note: It is also suggested that you remove or alter the old entry in the **hosts** file on the PC. You can do a search or find for **hosts** then double-click the file when it is found to start the default editor.
3. Create a new configuration using the following steps:
   a. From the Connection menu, select **New configuration**.

b. Continue the configuration and enter the new IP data or service host name at the appropriate time.
c. Complete the rest of the new configuration.

Common tasks

With Operations Console, you can perform many tasks such as changing keyboard definitions, starting the system using a manual IPL, and activating or deactivating the asynchronous communications line. These management tasks do not depend on a specific connectivity.

Changing keyboard definitions

If you change your keyboard definitions, the system can perform an action that is different from the default setting when you press a key.

To change your keyboard definitions, follow these steps:

1. In the emulator window, using the drop-down menu, do the following:
   a. Click **Edit**.
   b. Click **preferences**.
   c. Click **keyboard**.
2. Click **User-Defined**.
3. Click **Browse**, and then navigate to where iSeries Access for Windows was installed. Then, under the **Client Access** folder, navigate to the **Emulator** folder, followed by the **Private** folder.

   Note: If you are using IBM Personal Communications the default path would be: **Documents and Settings → User Name → Application Data → IBM → Personal Communications**
4. Select your choice.
5. Click **OK**.
6. Click **OK** again.

Starting the system using a manual IPL

You can start your system by performing a manual initial program load (IPL).

These instructions assume the system is powered off. If the system is powered on, use one of the various methods available to start the manual IPL.

To perform a manual IPL, follow these steps:

1. Look at the Function/Data display on the control panel. Systems with a keystick should show the mode as `Manual` and `01 B` in the Function/Data display.

   Systems without a keystick should show as `01 BM` in the Function/Data display.
2. If the system is in `Manual` mode and will IPL on the B side, then go to step 8. If the system is not in Manual mode or not set to IPL on the B side, then continue with step 3.
3. If the Function/Data display is lit, then, continue with step 4. If the Function/Data display is not lit, do the following before calling your hardware service representative:
   - Confirm that the electrical outlet is functioning by plugging in a suitable device for the voltage.
   - Ensure that the power cord is securely plugged into the system unit and electrical outlet.
4. Press **Up** or **Down** until `02` appears in the Function/Data display.

   Note: If your system uses a keystick, insert it now and select **Manual** by using the **Mode** button.
5. Press Enter on the control panel.
6. Press Up or Down until `B M` appears in the Function/Data display. If your system uses a keystick, select **B**. The Function/Data display should show `02 B`.
7. Press Enter on the control panel.

8. Press **Power** on the control panel. The system takes approximately 10 to 45 minutes to power on and progress through an IPL far enough to continue with these instructions. You should see that the data changes in the Function/Data display. The last step of the IPL may take up to 30 minutes to complete or the **Attention** light may turn on.
9. Reference code x6004031 or x6004508 (where x can be any letter) will appear in the Function/Data display and remain for up to 30 minutes.
10. When the system has completed the initial phase of the manual IPL it should show `01 B` and you have a console.

    Note: Some system reference codes (SRCs) can be displayed without the attention light being on. One example is *x6xx450x* (where the *x* can be any letter or number). These SRC codes typically indicate that the system detected an unexpected condition, and the console might have data indicating this condition. This condition and the resulting console data precede the IPL or Install the System window.

    If the **Attention** light is lit, then go to step 11.

    If the **Attention** light is not lit and you do not have a console, then, consider the following:

    - Your system may not have progressed through an IPL far enough to continue with these instructions. Wait at least 30 minutes before going any further.
    - If, after 30 minutes, you do not see any system activity and the Attention light did not light: See the information about handling and reporting system problems in the Troubleshooting and service topic.
    - When the problem has been resolved, start at the beginning of this section again.
11. If you see System Reference Code (SRC) x6xx500x (where the x can be any letter or number) in the Function/Data display, then, go to the Troubleshoot system reference code (SRC) data topic for details. If you do not see System Reference Code (SRC) x6xx500x (where the x can be any letter or number) in the Function/Data display, then, see the information about handling and reporting system problems in the Troubleshooting and service topic.

    Note: If you are working with a console related problem the most common SRC code reported would be A6005008. If you see any reference code of A600500x (where x can be any number) then you can proceed with any console service functions (65+21) to debug or make changes.

Related reference

"Troubleshooting system reference code data" on page 105
If you receive any of these system reference codes (SRCs), you might have some problems in your Operations Console configuration.

Related information

Service and support

Activating the asynchronous communications line on the system

These instructions apply only to local console directly attached and local console directly attached with remote-support-enabled configurations. Use these instructions to manually activate the asynchronous communications line on the system.

1. If your system uses a keystick, insert it in the key slot now.
2. Place the system into manual mode by using the system's control panel.
3. Using **Up** and **Down**, select function `25` and press Enter.
4. Use the **Up** to select function `26` and press Enter .
5. Use the **Down** to select function `66` and press Enter .

The system attempts to initialize the attached modem. If it is successful, the Function/Data window displays `D1008066`. If the system could not initialize the modem, it displays `D1008065`.

Related tasks

"Failure to display D1008065 and D1008066 automatically after calling the function" on page 108
When working with models that have a double row for the **Function/Data** display portion of the control panel, calling the function 65 or 66, the control panel might not automatically display the resulting system reference code (SRC).

Related reference

"Switching from one console type to another when a console is currently available" on page 59
If you know in advance that you will need a different console type, you can use the current console to make the changes necessary for use with a different console.

Deactivating the asynchronous communications line on the system

These instructions apply only to local consoles directly attached and local consoles directly attached with remote support enabled. Use these instructions to manually deactivate the asynchronous communications line on the system.

1. If your system is not in manual mode, if the extended functions are not activated, or both, follow these steps:
   a. If your system uses a keystick, insert it in the key slot.
   b. Place the system into manual mode by using the system's control panel.
   c. Using **Up** and **Down**, select function **25**. Press Enter.
   d. Use **Up** to select function **26**. Press Enter.
2. Use **Down** to select function **65**. Press Enter.

If the deactivation is successful, the Function/Data window displays `D1008065`.

Related tasks

"Failure to display D1008065 and D1008066 automatically after calling the function" on page 108
When working with models that have a double row for the **Function/Data** display portion of the control panel, calling the function 65 or 66, the control panel might not automatically display the resulting system reference code (SRC).

Related reference

"Switching from one console type to another when a console is currently available" on page 59
If you know in advance that you will need a different console type, you can use the current console to make the changes necessary for use with a different console.

Using the console service functions (65+21)

Console service functions (65+21) are the emergency console recovery functions.

This function-set should be used only in circumstances where an unexpected console failure has occurred and there are no other workstations available for recovery or debugging. Improper use may result in the inability to use the intended console. Any hardware allocations or configurations will have to be accomplished before using the console service functions (65+21). For example, if you are using a shared IOP in an LPAR environment you can deallocate and allocate the resource from one partition to another, if your hardware supports this method.

The console service functions (65+21) are standard control panel functions. They can be entered at the physical control panel, any of the remote control panel connectivity types providing a graphical user interface in Operations Console or using the LPAR menus on a primary partition. Since the first function is a 65, which is the deactivation of the communications line used by the local console directly attached, you may see the status of a connection using a serial cable go to `Connecting console`.

Important: To use these functions, the system must be far enough through the IPL for the code to run properly. If a console device is available, you should use that console to perform any console service functions, if possible. If a console device is not available, then perform these functions only after a failing system reference code (SRC) has been displayed. This SRC typically is A6005008.

The following functions are available using the console service functions (65+21):

- Change the console type value (01-03)

  You can use the console service functions (65+21) to change the console type from its current value to another. For example, assume that you ordered your system with Operations Console LAN, but you are having trouble getting it to work. If you have received the console cable for a directly attached console, you might want to change the value from a 3 (LAN) to a 2 (direct).

- Clear the resource and configuration for the LAN adapter used by Operations Console (C3)

  With this option, you can disassociate the current LAN adapter used for Operations Console. You might use this option to overcome a mistake in the configuration. For example, assume that you made a typing error and entered another device's IP address. At connection time, the client configured the system's LAN adapter for use by the console, but the console fails to connect because the other device is active. This option clears the system's network data for the console and allows you to delete the client's configuration so that you can start over and make the BOOTP work again.

  Depending on your intent to clear the LAN adapter configuration you might also want to stop and restart the LAN adapter. The example here would benefit from following the clear function with a deactivate and activate (A3) function to save time from having to do an IPL.

- Deactivate followed by an activate of the LAN adapter used by Operations Console (A3)

  With this option, you can reset the LAN adapter used by Operations Console, when some network problem causes the system to get into a bad state and the console cannot become active. This forces the LAN adapter to deactivate, and then start back up again. This might clear up the problem, providing the original problem that caused the connection failure has been solved.

  This option may be used in place of an IPL for some circumstances, such as after a clear of the LAN adapter configuration.

- Dump Operations Console flight recorders to vlogs (DD)

  Note: This option will not work if the system performs IPL in D-mode.

  This option will allow you to capture valuable debug information regarding a console connection failure for support personnel. This method is less intrusive than performing a main storage dump which would force an IPL. By using the console service functions (65+21) an attempt is made to gather all the flight recorder logs from the many parts of the code used by Operations Console. A set of vlogs is created for major code 4A00 and minor code 0500. These vlogs can then be sent to your service provider for analysis.

  Note: When possible, perform an IPL on the system to guarantee all vlogs get created even if the IPL will fail. The intent is that LIC has started the vlog tasks prior to performing the dump of flight recorders.

The following is an overview of how this function works:

Note: If your system is not in manual mode, and the extended functions are not activated, or both, follow these steps:

1. If your system uses a keystick, insert it in the key slot.
2. Place the system into manual mode by using the system's control panel.
3. Using **Up** and **Down**, select function **25**. Press Enter.
4. Use **Up** to select function **26**. Press Enter.

A function 65 is performed from one of the input methods. You have approximately 45 seconds to enter a function 21 for the system to pair the two functions together. If not, the function 21 is a force of DST to the console. Depending on the state of the current IPL you may or may not see a change at the console, assuming the console is still present after the 65. If the 65 and 21 are entered in less than 45 seconds, a system reference code (SRC) of A6*nn*500A should appear on the control panel. The value of *nn* is dependent upon the console type currently being used, 01 thru 03. Repeating the 65 and 21 puts the

system into an edit mode in which you can make a change or cause an action to be performed. After the second 65+21 pair is entered, the control panel will respond with the SRC of A6*nn*500B to indicate you are in edit mode. Each repeated 65+21 within edit mode will increment *nn* of the SRC until you reach the value representing what action you intend to perform. At this time, you enter just a single 21, which will cause the selected function to be performed. The SRC should then become A6*nn*500C to indicate the function was successfully submitted. If at any time you exceed 45 seconds between the 65 and 21 or between succeeding 21s, SRC A6*nn*500D may be presented indicating a timeout condition and the system is no longer in edit mode. If you were intending to make a change, you will need to restart the operations. This SRC will be reset in approximately 3 minutes. You can quit the edit mode by using function 66. The function 66 does not have to complete successfully.

The following codes will allow you to track your progress:

A6*nn* 500x

Where *nn* means:

00 = No console defined
01 = Twinax console
02 = Direct attached Operations Console
03 = LAN Operations Console
C3 = Clear LAN configuration
A3 = Deactivate followed by an activate of the LAN Operations Console adapter
DD = Dump all console related flight recorder into a set of vlogs

Notes:

1. Selecting 02 will automatically activate the asynchronous communications adapter used for Operations Console direct attached.
2. Selecting 03 may also require a function A3 to activate the LAN adapter in rare cases. Also, if a LAN connected console is connected, the emulator may go to a Disconnected state. If so, you can start it again by clicking **Communication** and selecting **Connect**.

Where x means:

A6nn 500A
You are displaying the current console type setting.

A6nn 500B
You did a second 65+21 pair so you are in edit mode.

A6nn 500C
You executed a second 21 to cause an action, such as setting the console to another value.

A6nn 500D
You waited too long after entering edit mode to cause an action so you will have to enter edit mode again if you intended to make a change. A 21 at this time will force the console to DST, not cause an action.

If you do not want to make a change after entering edit mode you can wait 3 minutes and this completion code should show up indicating a change is no longer pending or you do a function 66 to cancel any pending changes and exit.

Note: You have 45 seconds between a 65 and the 21 to start display mode or edit mode changes. If the time between these codes exceeds this limit the 21 will become a `force DST console` request.

An example of a console change would be:

The console type is 01 (twinaxial) and you want to use LAN (03).

```
65 - 21 = A601 500A  You are in display mode and the console type is 01
65 - 21 = A602 500B  You entered edit mode and incremented the counter
65 - 21 = A603 500B  You incremented the counter again
      21 = A603 500C  You invoked the action (set the console type to 03)
```

If the LAN adapter already had a valid configuration, for example you previously configured the LAN adapter for use with the service tool server, then you would be ready to create a local console on a network configuration on the client, if one didn't already exist. You could then turn off the twinaxial device and connect the Operations Console LAN configuration.

Note: To reset the console without changing the console type value, you can do a 65 - 21 - 21. The system should respond with A6*nn*500A after the first 21 and A6*nn*500C after the second 21. This causes the connection to the console to be dropped during the reset process. It is suggested that this function not be used when you already have a working console. This function does not correct all errors associated with a console failure, but rather resets the hardware associated with the configured console connection.

Related reference

"Preparation for your network environment" on page 11
To prepare for your network environment, you need to identify and comply with the minimum network configuration required to set up an Operations Console local console on a network (LAN) configuration.

Using the OPSCONSOLE macro

OPSCONSOLE macro is the system-side debugging and analysis tool for collecting data for or managing console-related work.

IBM-supplied macros are advanced debug and analysis tools resident on the system. These tools are intended to be used only with the direction of support personnel, because inappropriate use of these tools can cause unpredictable problems with your system. If you are not comfortable in the service tools area, you should call your service provider for assistance before using these tools. These instructions assume you do not have a console device but do have another workstation capable of using the system service tools (SST).

Note: Improper use of IBM-supplied macros could result in a change requiring a complete system reload. It is strongly suggested that you use these IBM-supplied macros only at the request of a support representative.

To use the Operations Console IBM-supplied macro support, follow these steps:

1. Access **System Service Tools** (SST).
2. Select **Start a service tool**.
3. Select **Display/Alter/Dump**.
4. Select **Display/Alter storage**.
5. Select **Licensed Internal Code (LIC) data**.
6. Select **Advanced analysis**. (You will have to page down to see this option.)
7. Page down until you find the **OPSCONSOLE** option. Then, place a 1 next to the option and press Enter. You should be on the **Specify Advanced Analysis Options** window. The command should show as **OPSCONSOLE**.
8. Enter the appropriate option and any required parameters in the Options field. Use the following options based on the function you are running:
   - Deactivate the communications adapter for a local console (directly attached) = **deactdirect**
   - Activate the communications adapter for a local console (directly attached) = **actdirect**

- Deactivate the LAN adapter for a local console on a network (LAN) = **deactlan**
- Activate the LAN adapter for a local console on a network (LAN) = **actlan**
- Restart the console device (any console) = **restart**

Note: Use the **restart** option when you need to take down the current console and allow the system to determine whether to start or restart a console. You can use the **restart** option to correct a problem with the original console or when switching from one console type to another.

Using service tools device IDs in system service tools

With the Work with service tools user IDs and Devices option, you can change Operations Console configuration data from system service tools (SST) .

From the Work with Service Tools User IDs And Devices display, select the Service tools device IDs option. By default, this option is locked to prevent unauthorized changes to existing service tools device IDs, the creation of new IDs, or the deletion of IDs. To unlock this SST option, you must use a native macro in dedicated service tools (DST). To unlock the service tools device IDs menu option, complete the following tasks:

Note: By default, the service tools device IDs option is locked. If you receive the message `The user can not perform the option selected`, it indicates that the option has not been unlocked.

1. Access **Dedicated Service Tools (DST)**.
2. Select **Start a service tool**.
3. Select **Display/Alter/Dump**.
4. Select **Display/Alter storage**.
5. Select **Licensed Internal Code (LIC) data**.
6. Select **Advanced analysis**.
7. Page down until you find the **FLIGHTLOG** option. Place a 1 next to the option and press Enter. You should be on the Specify Advanced Analysis Options display. The command should show as **FLIGHTLOG**.
8. Enter the option **SEC UNLOCKDEVID** in the Options field.

Note: If you want to lock this option to prevent later use, enter the option SEC LOCKDEVID.

Related tasks

"Resetting the service tools device ID password on the system" on page 81
To reset the service tools device ID password on the system, you need to perform these steps.

"Changing network values for Operations Console (LAN)" on page 87
If you need to make a change to the network adapter used for Operations Console (LAN), such as a new IP address, use these instructions.

Related reference

"Considerations for changing the service tools device ID passwords" on page 79
You need to review these considerations before you reset the service tools device ID password.

"Unable to sign on because of a lost or expired password or disabled user ID" on page 111
You can use this information to correct a problem when the takeover function isn't working.

Troubleshooting Operations Console connection

Problems can occur during an Operations Console session. The following topics are some solutions to common problems that are encountered during your initial setup and management of your configurations.

Settings dialog window

Operations Console has a built-in, hot-key-activated, settings dialog window that has special options used to help troubleshoot problems. The Settings window is activated by pressing and holding the **Alt** and **shift** keys then, press the **s** key before releasing all three keys (**ALT+Shift+s**). The options to split the log files can be very helpful to your service provider, especially if you have many connection configurations. Splitting the logs so each configuration has its own log makes it easier to find problems. When only one connection has a problem, activity in other connections aren't seen in the log.

It is highly suggested that the user not make any other changes or turn on any other functions without advice from your service provider. Improper use of the options on this window may cause unpredictable behavior on any or all configured connections.

There is also a hot-key-activated function to capture the screen data when the connection is not responding correctly. To capture the screen data, select the configuration and press **Ctrl+C**. This will dump the contents of the last ten screen buffers (three screens of data) and the timestamp they were received into the connection log. This log can be used by support or development to see what the last updates to the emulator were. Activating this process a second time without changes to the screen will not produce any more data to the connection log.

Troubleshooting status message

If you encounter connection problems when connecting a console, Operations Console provides status messages to assist you in troubleshooting the connections.

A status message indicates whether or not you have a connection problem. It is displayed under `Status` in the Connection details area of the Operations Console window.

Do the following before you start troubleshooting the connection:

- Make sure that you have the latest Service pack for iSeries Access for Windows.
- If your local console allows remote consoles to connect to it, make sure that you have the same service packs at the local console and remote console.

Related reference

"Applying iSeries Access for Windows service packs" on page 34
You need to have the latest Service Pack program temporary fix (PTF) for iSeries Access for Windows and the latest level of iSeries Access for Windows on your PC.

Status messages when configuration is running normally

These status messages help you identify whether you have connection problems.

These status messages indicate that you do not have connection problems:

Connecting
: This appears at the remote console during an initial connection to the local console.

Connecting console or Connecting remote control panel
: This status message is the normal status while the console is making the initial connection to a system. If it shows for more than a couple of minutes, see `Connecting console` in the list of status messages that indicate connection problems.

Pending authorization
: This appears during an initial connection to a system when the Service Device sign-on window appears. This status remains until the first user signs on successfully, either at a local console or remote console. After the user signs on successfully, the sign-on window and this status do not appear to other dial-in users as long as the local console remains connected to the system. A local

console over a network (LAN) always shows the LAN Service Device Sign-on window the first time a connection is made. Subsequent connections to the same system do not prompt the user again.

Connected
This appears at the local console after an initial connection to the system is completed (the user signed on successfully to Operations Console). This status also appears at the remote console when a connection to the local console is completed.

Disconnecting
This appears at the local console when the local console user disconnects from a system and the PC is disconnecting the connection. This status would appear at the remote console when the remote console user disconnects from the local console and the PC is disconnecting the connection.

Disconnected
This appears at the local console after the local console user disconnects from a system and the PC is no longer communicating with the system.

Not connected to local console
This appears at the remote console when the PC is not connected to the local console.

If the status message you received is not listed, see the Status messages when you have connection problems topic.

Related reference

"Status messages when you have connection problems"
These status messages help you identify whether you have connection problems.

Status messages when you have connection problems

These status messages help you identify whether you have connection problems.

These status messages indicate that you do have connection problems:

Remote control panel unavailable
This appears during an initial connection to a system. It shows when there is a problem with the remote control panel cable and the connection, and you choose not to retry the connection.

Connecting remote control panel
This appears when the connection fails during the initial connection or stops working after the initial connection. Possibly, the remote control panel cable is disconnected. This status disappears when you solve the problem.

Connecting console
This is the normal status while the console is making the initial connection to a system. If it shows for more than a couple of minutes, the connection failed. It also shows when the connection stops working after the initial connection, possibly because the cable is disconnected.

Connecting console or Connecting remote control panel
This appears when the console and remote control panel connections fail or stop working, possibly because the Operations Console cable and remote control panel cable are disconnected. This status disappears when you solve the problem.

Console unavailable
This appears when there is a problem during an initial connection to a system, and you choose not to retry the connection. It typically shows when the Operations Console connection modem is not available, but the Operations Console cable is attached. The Operations Console connection modem is not a physical modem but a logical device driver that comes with Operations Console and allows a local console to connect to a system.

Console unavailable or Remote control panel unavailable
This appears when there is a problem during an initial connection to a system, and you choose

not to retry the connection for the console and remote control panel. It indicates that there is a problem with the console connection, possibly because the Operations Console connection modem is not available or the console cable is disconnected. Operations Console connection modem is not a physical modem but a logical device driver that comes with Operations Console and allows a local console to connect to a system. It also indicates that there is a problem with the remote control panel connection, possibly because the remote control panel cable is disconnected.

Note: If the local console is configured to start in unattended mode, the local console is not in control and cannot disconnect normally.

If the status message you received is not listed here, see the Status messages when configuration is running normally topic.

Related reference

"Remote control panel fails to start" on page 108
If your remote control panel fails to start, verify these items.

"Troubleshooting connection problems"
When setting up your initial connection, you might encounter problems connecting your Operations Console configuration.

"Local console does not detect console cable" on page 110
These are solutions to problems that occur when the local console does not detect the presence of the Operations Console cable.

"Status messages when configuration is running normally" on page 97
These status messages help you identify whether you have connection problems.

Troubleshooting connection problems

When setting up your initial connection, you might encounter problems connecting your Operations Console configuration.

Local console connection problems

When setting up your local console, you might encounter problems connecting. Failure to connect is defined as problems resulting in the status not going to **Connected** and the emulator did not start.

Related reference

"Troubleshooting emulator problems" on page 104
When setting up your initial connection you may encounter emulator problems.

Console fails to connect:

Under certain circumstances, a directly attached console will fail to connect.

This might be the result of the system's communications adapter being deactivated for some reason, such as an exception that took place. This most likely will appear during an IPL and might have an associated system reference code (SRC) on the control panel along with the attention light. You can reset the communications line by performing a function **65** followed by a function **66** on the control panel or remote control panel. To reset the asynchronous communications adapter, you should first deactivate the asynchronous communications line and then activate it again.

To deactivate the asynchronous communications line on the system, follow these steps:

1. If your system is not in manual mode, if the extended functions are not activated, or both, follow these steps:
   a. If your system uses a keystick, insert it in the key slot.
   b. Place the system into manual mode by using the system's control panel.
   c. Using **Up** and **Down**, select function **25**.

d. Press Enter.
e. Use **Up** to select function **26**.
f. Press Enter.
2. Use **Down** to select function **65**.
3. Press Enter. If the deactivation is successful, the Function/Data window displays `D1008065`.

To activate the communications line on the system, follow these steps:
1. Use **Down** to select function **66**.
2. Press Enter.

The system attempts to initialize the line. If it is successful, the Function/Data window displays `D1008066`. If it could not initialize the line, it displays `D1008065`.

Related tasks

"Failure to display D1008065 and D1008066 automatically after calling the function" on page 108
When working with models that have a double row for the **Function/Data** display portion of the control panel, calling the function 65 or 66, the control panel might not automatically display the resulting system reference code (SRC).

Network connection errors:

These are solutions to problems that occur when a local console fails to connect to a system over a network.

Try these possible solutions:
- Make sure the network is working.
- Verify that you provide the correct password that allows the system to access your service device information during the configuration wizard. Also, verify that you provide the correct service tools user ID and password.
- If you are using Ethernet for your network, you can use a crossover cable to directly connect the PC to the adapter temporarily. This will isolate the PC and system from any potential problems on your network that might interfere with proper operations.

  Note: A *crossover cable* is a standard network cable but has the transmit and receive signal wires reversed. This virtually allows each end to act as if a hub, switch, or router is between them.

Error message: The connection to the system is not a secure connection:

You may receive this error message: `The connection to the system is not a secure connection`.

These messages appropriately appear during a D-mode (installation) IPL. Authentication is not performed and the remote control panel (LAN) is not supported for this IPL type.

Related reference

"Authentication errors" on page 104
While you are connecting a local console to a system, you may encounter local console connection problems. These are solutions to errors that occur when Operations Console cannot complete a connection between a system and a local console (PC). The errors consist of software configuration problems or unrecognizable service tool user IDs.

Local or remote console status remains Connecting:

These are solutions to problems that prevent the local console from connecting to the system or prevent the remote console from connecting to a local console due to improper hardware or software configurations.

- Verify that the resources of the PC are free of address or interrupt request (IRQ) conflicts. Operations Console uses addresses in the range of 192.168.0.0 to 192.168.0.255. If you run any software that makes your PC SOCKS-enabled, check your SOCKS configuration and make sure that the entry is:

  ```
  Direct     192.168.0.0     255.255.255.0
  ```

  A **SOCKS-enabled PC** accesses the Internet through a firewall, such as Microsoft Proxy Client, Hummingbird SOCKS Client, or others.
- Verify that the system name and the local console name are correct.
- If you are using Ethernet for your network, you can use a crossover cable to directly connect the PC to the adapter temporarily. This will isolate the PC and system from any potential problems on your network that might interfere with proper operations.

  Note: A *crossover cable* is a standard network cable but has the transmit and receive signal wires reversed. This virtually allows each end to act as if a hub, switch, or router is between them.

Console fails to connect and port detection fails:

If your console fails to connect and your port detection fails, here are some possible reasons.
- Sometimes RealPlayer or RealJukebox interferes with port detection and usage.
- Some PDA drivers or software may also prevent connections or port detection.

Performance degradation on local console:

The most likely reason for performance degradation is that the communication port is not running a buffered UART (Universal Asynchronous Receive/Transmit serial port chip).

Go to **Advanced** settings for the serial port and verify the check mark is checked to use a buffered UART. Make sure the Receive Buffer setting is not set to the right-most setting.

If that does not help and you suspect that the PC might not have the buffered UART, you can try slowing down the connection between the PC and system. Depending on the operating system, you may have to change the registry, the DUN object, the phone book entry, or all three.

The problem when the UART is not buffered is that the high speed inputs data to the UART faster than it can handle, which causes a missed packet of data resulting in a 30-second retry. This can occur randomly, but will be persistent. The slower speed reduces the exposure to an overrun of data and therefore no more 30-second retries.

Unable to make a connection when infrared devices are installed:

If the PC having connection problems has infrared devices, you may need to disable infrared in some cases.

Most of these devices work from **COM1** but fail to show up as using the associated hardware resources. Some experimentation may need to be performed to isolate the problem during configuration of Operations Console.

Unexpected disconnections:

If the PC, local or remote console, or both, have power management capabilities, it should have this function disabled.

Most PCs, and especially notebooks, reset the communications ports when starting power management after the specified time. This can potentially disconnect the established connection. Therefore, a local console that goes into power saver mode might disconnect from the system and disconnect an active remote console.

Using HyperTerminal to validate connectivity between client and the system:

HyperTerminal is a Windows application used for connecting to various sources and is supplied by all Windows operating systems on the install media, though may not be automatically installed. When the local console directly attached to the server does not connect, you can use HyperTerminal to determine if the PC has connectivity to the system.

Note:

1. The data is slow to appear so be certain to allow a 15 - 20 seconds for an action to complete before moving to the next step. Also keep in mind that some steps may not provide data to the window. Wait a little time and then continue.
2. The following example was performed on a Windows 2000 PC. Other operating systems may have slight differences in the presentation of options. The important part of this test is getting a response back from the NEGOTIATE at the end of the document.

Installing HyperTerminal:

To install HyperTerminal, follow these steps.

1. Click your path.
   - **Start** → **Programs** → **Accessories** → **Communications** → **HyperTerminal**
   - **Start** → **Programs** → **Communications** → **HyperTermiAccessoriesnal**

   Note: You want the executable and not one of the predefined connections or the folder.
2. If it is not found, use these instructions to install it:
   a. Place the installation media, if CD-ROM, into the CD—ROM drive and wait for the program to begin. Then, close the window. If the program did not automatically start, or the installation media is not a CD-ROM, continue with the next step.
   b. Click **Start** → **Settings** → **Control Panel**.
   c. Double-click **Add/Remove Programs**.
   d. Click **Windows Setup**.
   e. Select **Communications**.
   f. Click **Details**.
   g. Place a check mark in the box preceding HyperTerminal by clicking on the box.
   h. Click **OK**.
   i. Click **Apply**.
   j. Follow the instructions in any prompts that may show up. If you are presented a window in which you might replace a newer file with an older one, click **Yes** to keep the newer file.

   Related tasks

   "Using HyperTerminal"
   To use HyperTerminal, follow these steps.

Using HyperTerminal:

To use HyperTerminal, follow these steps.

If you have not installed HyperTerminal, see the Install HyperTerminal topic.

1. Click your path:
   - **Start** → **Programs** → **Accessories** → **HypertTerminal**
   - **Start** → **Programs** → **Accessories** → **Communications** → **HypertTerminal**
2. In the Connect To window, enter a name, select an icon, and then click **OK**.

3. A new Connect To window will appear. Click the little arrow at the end of line for **Connect using:**
4. Select the communications port being used for the console. It might also be listed as **direct to COMn** (where n is 1 to 4). Click **OK**.
5. A COMn Properties window will appear. Change the speed to `9600`. Click **OK**.

   Note: Failure to set the speed to 9600 will result in all unintelligible text and you will not see the desired results.
6. The HyperTerminal window will open. In the lower-left corner the status should report as **Connected** and the time will be incrementing.
7. In the data window you may get:
   - Nothing
   - Unintelligible
   - +++ATH0
8. Do a **Disconnect**.
9. Select **File → Properties**.
10. You should be in the **Properties** for the connection you just created. Select the **Settings** tab.
11. Click **ASCII Setup**.
12. Change the following settings so there is a check mark in the check box:
    - **Send line ends with line feeds**
    - **Echo typed characters locally**
    - **Append line feeds to incoming line ends**
    - **Wrap lines that exceed terminal width**
13. Click **OK**. Click **OK**.
14. Do a **Connect**.
15. At the system's control panel, enter function **65** (you need to take the system to a known state).

    Note: You may need to enter function **25** and **26** in order to have access to the upper functions.
16. The system's control panel might display `D1008065` after a while. Also, in the HyperTerminal window, you might receive some data.
17. At the system's control panel, enter function **66**. You might see `D1008066`. Also, in the HyperTerminal window, you might receive some data.
18. Using uppercase, type `NEGOTIATE 1` in the HyperTerminal window. Press Enter. The HyperTerminal data window displays `115200`.

    Note: If nothing is returned, repeat `NEGOTIATE 1`.

    If a speed value is returned, you had data exchanged in both directions and have full connectivity. If Operations Console will not connect, more than likely you have a setup problem on the client side.

    If a speed value is not returned, you might try turning off the PC, turn it back on, and repeat the test. Alternatively, you can try connecting to the console again. In rare cases, the system might need an IPL. For the best results, it is suggested that you follow these steps:

    a. Turn off the system.
    b. Turn off the PC.
    c. Turn on the PC.
    d. Start a connection for the console.
    e. Turn on the system.

    If the above process fails to solve your connection problem, you need to contact your service provider for further assistance.

Related tasks

"Installing HyperTerminal" on page 102
To install HyperTerminal, follow these steps.

Remote console connection problems

When setting up your remote console, you might encounter problems connecting. Possible troubleshooting solutions include these topics.

Remote console through dial-up fails to connect to local console:

Here are the solutions to a problem that occurs when a remote console modem fails to establish a connection with a local console.

While you are connecting a remote console to a local console, you may encounter remote console connection problems. These are solutions to a problem that occurs when a remote console modem fails to establish a connection with a local console:

- If your PC modem is listed as a **Standard Modem** option in the **Modems** folder, configure it with a different manufacturer and model.
- If you have an original equipment manufacturer (OEM) modem, your OEM modem may not be configured correctly. If that is the case, try to configure it using some similar modem setups.

Local console name mismatch when remote console connects to the local console:

Here are some reasons for a possible console name mismatch when the remote console connects to the local console.

It is important that the user at both ends check the **Local Console** column in the Operations Console window. The names must be the same.

What TCP/IP uses for a name is retrieved and placed there. When the remote console is then configured, make sure the name of the local console is the same. It is possible to have two different system names on the same PC. The name used for Operations Console is taken from the DNS entry in the TCP/IP service.

Troubleshooting authentication problems

When setting up your initial connection, you might encounter authentication problems.

Authentication errors

While you are connecting a local console to a system, you may encounter local console connection problems. These are solutions to errors that occur when Operations Console cannot complete a connection between a system and a local console (PC). The errors consist of software configuration problems or unrecognizable service tool user IDs.

Tip: Verify that you are entering a valid service tools user ID and password during the configuration wizard.

You might also receive an error message regarding a secure connection.

Related reference

"Error message: The connection to the system is not a secure connection" on page 100
You may receive this error message: `The connection to the system is not a secure connection`.

Troubleshooting emulator problems

When setting up your initial connection you may encounter emulator problems.

If the emulator window did not start and the connection status is not Connected, refer to the Local console connection problems topic.

Related reference

"Local console connection problems" on page 99
When setting up your local console, you might encounter problems connecting. Failure to connect is defined as problems resulting in the status not going to **Connected** and the emulator did not start.

PC5250 window does not display user data

This can be caused by a non-buffered UART for the serial connection in the PC.

See the Performance degradation on local console topic. This problem only affects a direct attach local console.

Related reference

"Performance degradation on local console" on page 101
The most likely reason for performance degradation is that the communication port is not running a buffered UART (Universal Asynchronous Receive/Transmit serial port chip).

Troubleshooting system reference code data

If you receive any of these system reference codes (SRCs), you might have some problems in your Operations Console configuration.

Refer to the sections below to find information about specific system reference codes and troubleshooting options.

System reference code A6nn500x

These are the system reference codes (SRCs) used to access console types and console tasks.

These SRCs are associated with the operation of the control panel method to change the console type or accomplish a console task when the console or other workstation is not available.

Remember: nn can be any alphanumeric designation.

- `A6nn 500A` - You are displaying the current console type setting.
- `A6nn 500B` - You did a second `65+21` so you are in edit mode.
- `A6nn 500C` - You executed a second `21` to cause an action, such as setting the console to another value.
- `A6nn 500D` - You waited too long after entering edit mode to cause an action so you will have to reenter edit mode again if you intended to make the change. A `21` at this time will force the console to DST, not cause an action.

Related reference

"Using the console service functions (65+21)" on page 92
Console service functions (65+21) are the emergency console recovery functions.

System reference code A6005001, A6005004, and A6005007

These system reference codes (SRCs) might be displayed for twinaxial consoles.

A6005001

A console resource (controller) was not found during a manual IPL.

A6005004

A console device was not found during a manual IPL. A twinaxial controller was found but may not be used. This is only indicating the presence of a controller. It is not indicating the controller may be defective.

A6005007

A console device was not found during a manual IPL. This SRC is also indicating the presence of hardware that may indicate another console type other than twinaxial or Operations Console (Direct) was found. An example would be the old async console, which is no longer supported. This is not indicating a failure of that hardware or that it is the intended console.

These SRCs, as well as the attention light, are reset when a console is detected and becomes active. If one of these SRCs exists for a long time, you might need to perform an IPL to try to find a console device, depending on many factors, including the model and the hardware present. You can force the system to try finding the console again by using function 21 from the control panel, remote control panel, or virtual control panel. You can also use the 65+21 functions to gather data or attempt recovery.

System reference code A6005008

Use this table if you received system reference code (SRC) A6005008. If an IPL did not find a console and if the console type is set to anything except a 1, the system will display code A6005008.

- If you are attempting to use a twinaxial console the only data relevant in this SRC is word 16. Use the following table to determine the twinaxial failure. The first 4 characters of this word contains the last 4 characters of the original failure type. For example, if word 16 contained 50010001, the twinaxial-related SRC would be A6005001 and the console type is set to use a twinaxial console. Refer to that SRC.
- If you are attempting to use Operations Console select the appropriate section in the table below as follows:
  - Local console on a network uses words 13, 14, and 15.
  - Local console directly attached to the server uses words 17, 18, and 19.

Note: If you just replaced the LAN adapter associated with Operations Console (LAN), you need to wait at least 35 minutes for the system to find and use the new LAN adapter. In this case, when the system is satisfied, it starts using the new adapter. The console should start, and the SRC is no longer shown.

LAN			
If Word 13 value is:	**Failure**	**Word 14 means:**	**Word 15 means:**
1	No supported HW detected or HW detected is not expected (for example, you replaced the LAN IOA so the serial number is different)		In some cases the serial number of the expected adapter may be shown.
2	LAN IOA failed to report		
3	Hardware error	Common error codes: 53001A80,53002AC0 Network, cable or the LAN adapter may not be operational. Error code: 00000000 . This error code indicates the adapter reported but has not been initialized yet. This is not considered an error, at this time. The adapter should be activated shortly. For other error codes contact your service provider.	Card position or serial number of adapter

LAN			
If Word 13 value is:	**Failure**	**Word 14 means:**	**Word 15 means:**
4	BOOTP status: If attempts are zero, then BOOTP is ready, when called. If attempts have a value, then the PC did not respond	Attempts	Card position or serial number of adapter
5	The system's LAN connection is active but the PC failed to connect - Are the PC and system on the same network and using the same protocol? Can the PC ping the system? (`ping serverhostname`)	IP address	Card position or serial number of adapter
Word 16		The twinaxial-related SRC is represented by the first 4 characters. The console type value is represented by the last 4 characters in the form xxxx xxxx. • 00 = Not defined by user (old default value), see note below. • 01 = Twinaxial • 02 = Operations Console (direct) • 03 = Operations Console (LAN)	

Cable			
If Word 17 value is:	**Failure**	**Word 18 means:**	**Word 19 means:**
1	Async card not detected		
2	No cables detected	Card position	Card type
3	Wrong cable detected	Card position	Cable ID
4	Port in use	Card position	Card type
FA	Not configured for direct cable		

Note: It is expected that a D-mode IPL with a new load source direct access storage device (DASD) will show the console type value of 00. Examples of when this can occur might be that the copy of data from a failing DASD did not copy all data or you are installing a new logical partition. Also, there are times when the DASD is late reporting an the console type value was not retrieved in time. In these cases you can use the console service function to set a console type value or attempt to contact the console again.

System reference code A9002000

Here are some possible reasons you received system reference code (SRC) A90002000.

- If the system displays this SRC, it typically means that a console was not found by i5/OS.
- The system value QAUTOCFG must be set to **ON**. i5/OS is unable to create the new console device if it is off.
- If you just migrated the console from one type to another and the new console fails to work in i5/OS you may need to use another workstation to manually delete the controller and device description associated with the old console device.

Note: You might be able to use the console service functions (65+21) to assist in a recovery or to gather debug data.

System reference code A6005082

Here are some possible reasons you received system reference code (SRC) A6005082.

- If the system displays this SRC, it typically means that a console was found but lost the console connection.
- If the console is reassigned and the system can locate a console, the SRC is no longer shown.
- The console type does not affect this SRC.
- Only issued in attended mode IPLs.

Failure to display D1008065 and D1008066 automatically after calling the function

When working with models that have a double row for the **Function/Data** display portion of the control panel, calling the function 65 or 66, the control panel might not automatically display the resulting system reference code (SRC).

In these cases, you have to do a function **11** in order to determine whether the function **65** or **66** completed successfully. If the function did not complete successfully, that is, if the SRC did not display automatically:

1. Using the control panel or the remote control panel, press the Up or Down buttons until 11 is shown.
2. Press **Enter**.

Related tasks

"Console fails to connect" on page 99
Under certain circumstances, a directly attached console will fail to connect.

IPL step C6004031 takes longer than expected

The i5/OS operating system can detect the hardware resource for a console.

Depending on what other console-capable resources might be found plus the time it takes to walk the bus, this activity has increased the amount of time spent at this IPL stepin the startup process.

Troubleshooting remote control panel and virtual control panel problems

When setting up your initial connection, you might encounter problems accessing your control panels.

Related reference

"Virtual control panel" on page 26
A virtual control panel (VCP) connects to the system through a serial cable. With VCP, you can perform most of the control panel functions from a local location only.

Remote control panel fails to start

If your remote control panel fails to start, verify these items.

- Verify that the cables are properly connected.

  Note: Directly connected remote control panels are no longer supported.
- Verify that the resources of the PC are free of address or interrupt request (IRQ) conflicts. Operations Console uses addresses in the range of 192.168.0.0 to 192.168.0.255. If you run any software that makes your PC SOCKS-enabled, check your SOCKS configuration and make sure that the entry is:

  Direct 192.168.0.0 255.255.255.0

  A SOCKS-enabled PC accesses the Internet through a firewall, such as Microsoft Proxy Client, Hummingbird SOCKS Client, or others.
- If you are connecting via a network, another reason the remote control panel fails to start may be that either the user ID or service tools device ID being used does not have permission to use the remote control panel.

Related reference

"Installing an Operations Console cable" on page 39
You need to install an Operations Console cable when your configurations have a local console that is directly attached to the system or a local console that is directly attached with remote access allowed.

Unable to use the mode function

When you are unable to use the mode function, you should verify that the authenticated connection has the correct privileges to use the mode function on a remote control panel.

If you are unable to use the mode function on a remote control panel or virtual control panel, check that the user that authenticated the connection (Service Device Sign-on) has the **Partition remote panel key** privilege for the partition connected to.

To ensure you have the proper privileges for the connection to the partition, follow these steps:

1. Access Dedicated Service Tools (DST).
2. Select **Work with DST environment**.
3. Select **Service tools user profiles**.
4. Select **Change privileges** (option 7).

That user must be granted the privilege, **Partition remote panel key** by partition, in order to use the mode function. If the system supports the keystick, the keystick must be inserted before the mode function is active.

Related information

Access service tools

Authentication problems

Here are two common authentication related problems and suggestions to correct the them.

- Failure to authenticate.

  Error message: `The current access password entered is not valid. Please enter the valid access password.`

  This message typically means that the access password you entered in the **Service Device Sign-on** window is not the same as the password you entered in the **Specify Access Password** window during the configuration wizard. Make sure that the `caps lock` is not active and reenter the access password using the password you assigned, taking into account any case sensitivity you may have used.

- Failure to connect the VCP.

  Error message: `The PC service tools device ID password and the iSeries service tools device ID password do not match. Either the service tools device ID (name) is already in use or the passwords must be RESET on this PC and the iSeries.`

  This indicates that the service tools device ID password is incorrect.

  The service device ID password stored on the PC no longer matches the value stored on the system. In rare cases, this password gets out of synchronization and you need to reset the value back to the original default values on both the PC and the system.

  Related reference

  "Resynchronizing the PC and service tools device ID password" on page 81
  When a mismatch occurs in the service tools device ID password between the system and the Operations Console PC, you need to resynchronize the password by performing recovery steps on both the PC and the system.

Troubleshooting configuration wizard problems

Here are the solutions to problems encountered while you are completing the Operations Console configuration wizard.

Local console does not detect console cable

These are solutions to problems that occur when the local console does not detect the presence of the Operations Console cable.

A status message of `Connecting` or `Unavailable` is typically present:

- Verify that the cable is properly connected.
- For the console, verify that the communications adapter on the system is properly located.
- Verify that the part numbers for the Operations Console cable is correct.
- Verify that the system is in a state such that the console can be active. For example, the console is active after a manual initial program load (IPL). After you perform the IPL, the system reference codes (SRCs) B6004031, B6004501, or B600500X (where x is a number) indicate that the system is in the proper state.
- Verify that the resources of the PC are free of address or interrupt request (IRQ) conflicts. Operations Console uses addresses in the range of 192.168.0.0 to 192.168.0.255. If you run any software that makes your PC SOCKS-enabled, check your SOCKS configuration and make sure that the entry is:

  Direct 192.168.0.0 255.255.255.0

  A SOCKS-enabled PC accesses the Internet through a firewall, such as Microsoft Proxy Client, Hummingbird SOCKS Client, or others.

  Related reference

  "Installing an Operations Console cable" on page 39
  You need to install an Operations Console cable when your configurations have a local console that is directly attached to the system or a local console that is directly attached with remote access allowed.

Old network data interfering with reconfiguration of network connectivity

If you are configuring a local console on a network (LAN) and the user keeps getting an old IP address, which might be wrong but you cannot get to it without changing the name, you might need to edit the **hosts** file on the PC. You might need to edit the file and remove the entry in question.

Notes:

1. It is also suggested that you remove or alter the old entry in the **hosts** file on the PC. You can do a search or find for **hosts** then double-click the file when it is found to start the default editor.
2. Operations Console should be closed and restarted before attempting to connect a new configuration. This action will remove all cached values associated with any old configurations.

Troubleshooting other Operations Console problems

Here are some problems with your Operations Console not covered in the other troubleshooting sections.

Operations Console remains in QCTL

This situation typically shows up after a migration, but could be found at any time you have been working with resources. QCONSOLE still remains in QCTL when you would have expected it to be reassigned as another workstation.

Be sure that the system has not performed an IPL with **DEBUG** turned on. A good indication is that no other interactive subsystem has started, if present, and others may also be absent. Check SYSVAL QIPLTYPE it should be 0.

Note: If the new console fails to work in i5/OS you may need to use another workstation to manually delete the controller and device description associated with the old console device.

System requests do not work

Here are the solutions for when system requests do not work.

When using Operations Console, **SYSREQ** corresponds to **Shift+ESC** and is defined as the default for PC5250 emulation.

Most keyboards have a **Print Screen** key, also labeled as **SYSREQ** and would be activated by using that key with the **Ctrl** key, however Windows reserves this key for the **Print Screen** function.

You must remap the keyboard by using the operating system, not PC5250, in order to change it.

Unable to sign on because of a lost or expired password or disabled user ID

You can use this information to correct a problem when the takeover function isn't working.

If you have the special DST sign-on screen but find yourself unable to sign on because of either a disabled user ID or expired password, you can attempt the first steps of recovery by doing the following:

1. Make certain that no other devices (PCs) that normally are eligible to become the console are connected.
2. Perform the console service functions (65+21) using 65, 21, 21.

This will cause the console to be lost temporarily. The device should then become the console with a sign-on screen appropriate to the system state, assuming that it matches the current console type setting. For example, if the system was IPLed to command entry, then you would see the i5/OS sign-on screen. You can then sign on using any user ID with the authority to continue the recovery of the DST user ID that has the problem.

For more information about the DST user ID and passwords, see the Service tools user IDs and passwords topic.

Related tasks

"Using service tools device IDs in system service tools" on page 96
With the Work with service tools user IDs and Devices option, you can change Operations Console configuration data from system service tools (SST) .

Appendix. Notices

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