IBM

System i

Connecting to System i Operations Console

Version 6 Release 1

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> **Note**
>
> | Before using this information and the product it supports, read the information in Appendix A,
> | "Notices for software topics," on page 105 and the *IBM Systems Safety Information* manual,
> | G229-9054.

Safety and environmental notices

Safety notices

Safety notices may be printed throughout this guide:

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

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

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CAUTION:
This product might contain one or more of the following devices: CD-ROM drive, DVD-ROM drive, DVD-RAM drive, or laser module, which are Class 1 laser products. Note the following information:
- **Do not remove the covers. Removing the covers of the laser product could result in exposure to hazardous laser radiation. There are no serviceable parts inside the device.**
- **Use of the controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.**

(C026)

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

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

CAUTION:

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

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This unit must be recycled or discarded according to applicable local and national regulations. IBM encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. IBM offers a variety of product return programs and services in several countries to assist equipment owners in recycling their IT products. Information on IBM product recycling offerings can be found on IBM's Internet site at http://www.ibm.com/ibm/environment/products/prp.shtml.

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In accordance with the European WEEE Directive, electrical and electronic equipment (EEE) is to be collected separately and to be reused, recycled, or recovered at end of life. Users of EEE with the WEEE marking per Annex IV of the WEEE Directive, as shown above, must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and recovery of WEEE. Customer participation is important to minimize any potential effects of EEE on the environment and human health due to the potential presence of hazardous substances in EEE. For proper collection and treatment, contact your local IBM representative.

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This product may contain sealed lead acid, nickel cadmium, nickel metal hydride, lithium, or lithium ion battery. Consult your user manual or service manual for specific battery information. The battery must be recycled or disposed of properly. Recycling facilities may not be available in your area. For information on disposal of batteries outside the United States, go to http://www.ibm.com/ibm/environment/products/batteryrecycle.shtml or contact your local waste disposal facility.

In the United States, IBM has established a return process for reuse, recycling, or proper disposal of used IBM sealed lead acid, nickel cadmium, nickel metal hydride, and other battery packs from IBM Equipment. For information on proper disposal of these batteries, contact IBM at 1-800-426-4333. Please have the IBM part number listed on the battery available prior to your call.

For Taiwan: Please recycle batteries.

For the European Union:

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Note: This mark applies only to countries within the European Union (EU).

Batteries or packaging for batteries are labeled in accordance with European Directive 2006/66/EC concerning batteries and accumulators and waste batteries and accumulators. The Directive determines the framework for the return and recycling of used batteries and accumulators as applicable throughout the European Union. This label is applied to various batteries to indicate that the battery is not to be thrown away, but rather reclaimed upon end of life per this Directive.

In accordance with the European Directive 2006/66/EC, batteries and accumulators are labeled to indicate that they are to be collected separately and recycled at end of life. The label on the battery may also include a chemical symbol for the metal concerned in the battery (Pb for lead, Hg for mercury and Cd for cadmium). Users of batteries and accumulators must not dispose of batteries and accumulators as unsorted municipal waste, but use the collection framework available to customers for the return, recycling, and treatment of batteries and accumulators. Customer participation is important to minimize any potential effects of batteries and accumulators on the environment and human health due to the potential presence of hazardous substances. For proper collection and treatment, contact your local IBM representative.

For California: Perchlorate Material - special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

The foregoing notice is provided in accordance with California Code of Regulations Title 22, Division 4.5 Chapter 33. Best Management Practices for Perchlorate Materials. This product/part may include a lithium manganese dioxide battery which contains a perchlorate substance.

Contents

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 the System i Access for Windows® licensed program. 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 System i 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. These remote PCs can then function as a console, which allows easier system management and access.

Operations Console support is available with i5/OS® V5R3, or later. IBM iSeries® 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 V6R1

Read about new or significantly changed information for the Operations Console topic collection.

Simplified console setup for network connected consoles

The initial console setup process is more automated in this release. During the setup, the system automatically detects some of your system settings, for example, the system serial number or your IP address if the system is capable of providing it.

The traditional setup wizard is still available for use, if the system is not able to be contacted.

Models not supported

As of i5/OS V6R1, the following hardware models are no longer supported: models 270, 820, 830, and 840.

How to see what's new or changed

To help you see where technical changes have been made, the information center uses:
- The » image to mark where new or changed information begins.
- The « image to mark where new or changed information ends.

In PDF files, you might see revision bars (|) in the left margin of new and changed information.

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

PDF file for Operations Console

You can view and print a PDF file of this information.

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

Saving PDF files

To save a PDF on your workstation for viewing or printing:
1. Right-click the PDF link in your browser.
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 27
> After you complete the planning requirements and know which configuration and PC operating
> system you will be using, you can go through one of the predefined checklists for setting up
> Operations Console. You can also create a customized checklist and complete that.

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, the PC that you are going to
  use as a console must be 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 System i Access for Windows installed on the PC.
- If you are configuring Operations Console for an i5/OS logical partition that runs the
  Linux® operating system, see the Configuring the LAN console for a logical 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 actually active.
- IBM System i5® and eServer™ i5 models start counting logical partitions from 1 (even if it is the only partition) instead of 0. iSeries 8xx models start counting logical partitions from 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 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:

For i5/OS V5R3, or later, there is a special set of functions known as console takeover and recovery, which 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 these 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 40
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 8xx are tagged for a console type only at the IOP level. Tagging an IOP that has two similar 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, make 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 system as a backup.
- 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 system 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 also applies to twinaxial workstations.

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 3
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 40
You can use these functions to take control of another console device.

"Preparation for your network environment" on page 13
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 50
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 20
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 40
You can use these functions to take control of another console device.

"Preparation for your network environment" on page 13
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.

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.

Note: This topic covers only models 8xx and earlier. For models 5xx, go to the Operations Console hardware requirements topic in the IBM Systems Hardware Information Center.

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
Windows Vista	• Pentium 800 MHz • 512 MB memory minimum

Notes:

1. See the System i 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.

3. Windows Vista only supports a local console on a network.

Important: IBM System i5 and eServer i5 models start counting logical partitions from 1 (even if it is the only partition) instead of 0. iSeries 8xx models start counting logical partitions from 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 800, 810, 825, 870 and 890. To find out the specifics of your system, you can use the Display Hardware Resources (DSPHDWRSC) command. 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) - LAN adapter locations	Operations Console (Direct) - Asynchronous adapter locations
800, 810	C06, second C05	C07
825	Integrated Ethernet Port (C03, C02, C01)[1]	C06
870, 890	C04, C06, C07, C08, C09	C02
[1] These locations are only available if the Integrated Ethernet Port is not operational.		

Related tasks

"Changing the console from a local console directly attached to a local console on a network (LAN) in a nonpartitioned or primary partitioned system" on page 53
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 53
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 nonpartitioned or primary partitioned system" on page 61
To change from a twinaxial console to an Operations Console, you must use the existing console to complete these steps on the system.

"Changing the console from a twinaxial console to an Operations Console in a logical partition" on page 62

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 doing an initial program load (IPL).

Related reference

"Scenario: Consoles for multiple systems or partitions" on page 20
This scenario discusses a situation in which you want to manage multiple systems or partitions.

"Preparation for your network environment" on page 13
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 10
You need to meet these cable requirements for supported models, cables and card locations.

"Operations Console software requirements"
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 52
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 61
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 64
To change from an Operations Console to a twinaxial console, you must complete a set of steps on the system and, optionally, on the PC.

"Planning considerations for your backup console" on page 5
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

System i Access Web site

Upgrade planning

Display Hardware Resources (DSPHDWRSC) command

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, Windows XP Professional, and Windows Vista.

Note: Windows Vista can only be used for a local console on a network configuration. You cannot use Windows Vista for a local console directly attached.

PC5250 or IBM Personal Communications V5.9 (V5.7 with CICS system definition data set (CSD) 1 minimum) needs to be installed for the console only. It is not required for configurations that are used only for remote control panel.

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 7
> 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)
8xx	2742, 2745, 2771, 2793	97H7557, 39J5835

The parallel cable attached remote control panel 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) - Asynchronous adapter locations	Operations Console (LAN) - LAN adapter locations
800, 810	C07	C06, second C05
825	C06	Integrated Ethernet Port (C03, C02, C01 [1])
870, 890	C02	C04, C06, C07, C08, C09,
[1] These locations are only available if the Integrated Ethernet Port is not operational.		

Note: 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**

"Operations Console hardware requirements" on page 7
You need to meet the PC and System i hardware requirements for an Operations Console configuration.

"Installing an Operations Console cable" on page 32
You need to install an Operations Console cable when your configurations have a local console that is directly attached to the system.

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 need a connector for a communications interface such as a serial port. Operations Console supports serial COM ports 1 - 9. One COM port is required for system console 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.

Also, the use of a serial PCMCIA adapter on a notebook is also supported as long as the communications port provided is within the range supported by Operations Console. However, IBM does not guarantee that all adapters will work in all situations.

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 i5/OS V6R1 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 V6R1

You must comply with the following before upgrading or installing your software (i5/OS Licensed Internal Code) to V6R1:

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 adapter locations
800, 810	C07
825	C06
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 System i Access for Windows to V6R1 before you upgrade the i5/OS operating system.

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.

When you upgrade your system, a change in system serial numbers could prevent the client from answering the BOOTP request if you are relying on this method to configure the service host name on the new system.

If the result of your system upgrade includes a Hardware Management Console (HMC), make sure to use this as the system console until your upgrade is complete. Because some upgrades are staged, your intended console might lack the necessary resources for a period of time. Because the HMC uses virtual resources, you will not have problems with a lack of resources for another console type.

Related tasks

"Installing System i Access for Windows" on page 29
Before you use Operations Console, you must install System i Access for Windows.

"Deallocating or moving the LAN adapter card from use by Operations Console" on page 77
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 32

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

Related information

Installing, upgrading, or deleting i5/OS and related software

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 an inexpensive hub or router. Temporarily, you could also use an Ethernet crossover cable (when using a 2849 adapter). 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.

A *crossover cable* is a standard network cable that has the transmit and receive signal wires reversed. This virtually allows each end to act as if a hub, switch, or router were between them. The use of a crossover cable might also require a nonstandard network configuration at the system and PC.

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 system will perform a BOOTP when the console type is set to Operations Console (LAN) and the system does not contain a valid IP address for the service host name (service interface).

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.

Starting with i5/OS V6R1, Operations Console can detect systems that are capable of being configured with less user interaction. If this condition is detected, the PC and system attempt to exchange information for a new configuration. If the information exchange is successful, the system uses this information during the setup of the connection at the PC. This reduces mistakes caused by entering the wrong IP address or the partition ID. This detection can take place only if both the PC and the system are running V6R1 code. Otherwise, a traditional BOOTP takes place and you must supply all the data for the system.

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.

Although the system and PC can still perform a standard BOOTP operation as described here, in V6R1 a new function was added to allow the automatic discovery of a connection between the system and a PC. This function, called VSDISCOVER, is a proprietary mechanism used solely for Operations Console. Both the system and PC listen for a special broadcast frame from the network and when received there is a negotiation using ports 67 and 68 and the system and PC can use the data exchanged to configure itself, if needed. In addition, the PC creates a configured connection that the user can start a console session with. This VSDISCOVER function is the default mechanism for configuring a connection. The BOOTP process will still be used when VSDISCOVER isn't necessary, such as when you already have a configured connection and the network data needs to be reset for some reason.

Related reference

"Planning considerations for your backup console" on page 5
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 7
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 system 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 Operations Console client code requires less user interaction than previous releases when you are connecting a local console on a network configuration. By default, you do not need to maintain the access password unless you need to remain in a manually maintained environment. The system can also maintain the service tools device IDs. See the Operations Console simplification topic for more details. The system requires the same process to successfully connect, but part of this can be performed by Operations Console.

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

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.
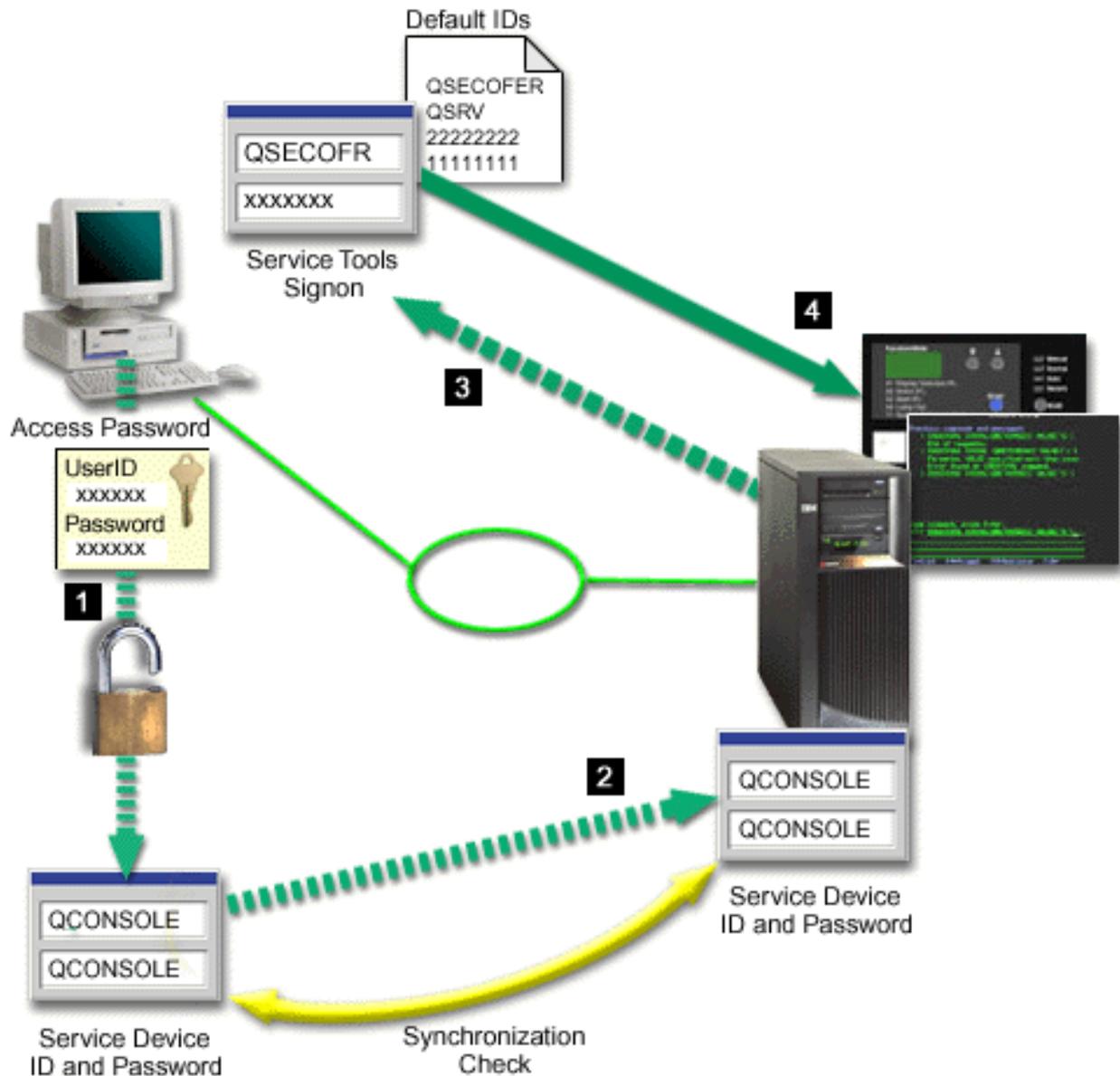
Figure 1. Operations Console LAN security

The System i console security consists of:

Service device authentication

This security assures that one physical device is the console. An Operations Console local console

that is directly attached to the system is a physical connection similar to a twinaxial console. The serial cable you use for Operations Console using a direct connection can 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 Secure 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. By default, the system administers service tools device IDs. The initial value for the number of automatically created service tools device IDs is set to 10. With the default service tools device ID QCONSOLE, 11 PCs can be connected to a system at the same time, each with a unique service tools device ID. If you set this value to zero, you will have to administer the service tools device IDs manually. Service tools device IDs are administered manually in 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).

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 a local console on a network (LAN), the configuration wizard determines if the system is capable of automatically creating a service tools device ID. If it is, the system skips the process for the user to create a service tools device ID. If you need to manually assign a user-created service tools device ID to a new configuration without turning off the autocreate function, simply disconnect the PC from the network while you create the configuration so that Operations Console cannot validate the function. You will then be prompted for the user-created service tools device ID. By default, the initial service tools device ID password is set to the name of the service tools device ID in uppercase.

Note: The access password protects the service tools device ID information (service tools device ID and password) on the PC. By default, Operations Console manages the access password for you. During the configuration process, you are not presented a window in which to assign an access password. However, should you elect to manually administer this password, you can change it using the **Properties and the Access Password** tab.

When establishing a network connection, the Operations Console no longer prompts you for the access password to access the encrypted service tools device ID and password unless you have manually set it after the configuration was created. However, you are prompted for a valid service tools user ID and password.

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. An Operations Console local console that is directly attached to the system 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 as 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 that 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. Data encryption can only occur if a cryptographic product is installed on the system.

Data integrity

This security provides confidence that the console data has not changed en route to the recipient. An Operations Console local console that is 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. Data encryption can only occur if a cryptographic product is installed on the system.

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 situations when administering Operations Console local console over a network:

- 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 ID password between the system and the Operations Console PC, you might need to resynchronize the password on the system. A mismatch occurs if one is the following conditions happens:
  - Your PC fails.
  - You decide to exchange the PC for a different one.
  - You upgrade the system and Autocreate service tools device IDs on the system is set to zero or you are using Licensed Internal Code earlier than i5/OS V6R1.

  For more information, see Operations Console simplification.
- 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 to 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. If you changed the value of Autocreate service tools device IDs on the system to 0, do the following:

   Create an additional service tools device ID for each PC that will be used as a console with console and control panel attributes.

   For more information, see Operations Console simplification.

2. Add one or two additional backup device IDs for use in an emergency. This is not necessary if you use the option Autocreate service tools device IDs and its value is not zero.

3. Choose nontrivial access passwords. This is not necessary if you let the Operations Console manage this password.

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.

   Note: Do not change the password for user 11111111. This is the only user that is included in the system without an expired password. If you experience a problem with authentication using another user ID, you can attempt to authenticate with 11111111/11111111.

6. Add backup service tools user IDs with enough authority to enable or disable user and service tools device IDs.

   Related concepts

   "Operations Console simplification" on page 67
   Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

   Related reference

   "Resynchronizing the PC and service tools device ID password" on page 70
   By default, the system creates and maintains the service tools device ID and its password. You should not have to manually resynchronize the password. However, if the system option Autocreate service tools device IDs is set to 0, then you must manually manage the IDs and their passwords.

   Related information

   Service tools user IDs and passwords

Preparation for your Operations Console and System i Navigator configuration

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

System i Navigator is the graphical interface for managing and administering your system from your Windows desktop. System i 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 Operations 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 system, a network connection for System i Navigator is required. To complete the System i 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. System i 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 System i Navigator through the LAN connectivity.

Figure 2. System i Navigator and Operations Console configuration over separate connectivity

- The PC used as a local console on a network might require an additional network connection. System i Navigator requires a network connection to the network adapter and configured i5/OS line description. Operations Console uses the service network adapter as defined by the service host name (interface name). If the network adapter and configured i5/OS line description and the service network adapter as defined by the service host name (interface name) are on the same network, an additional PC LAN adapter is not needed. This is illustrated in the following figure.
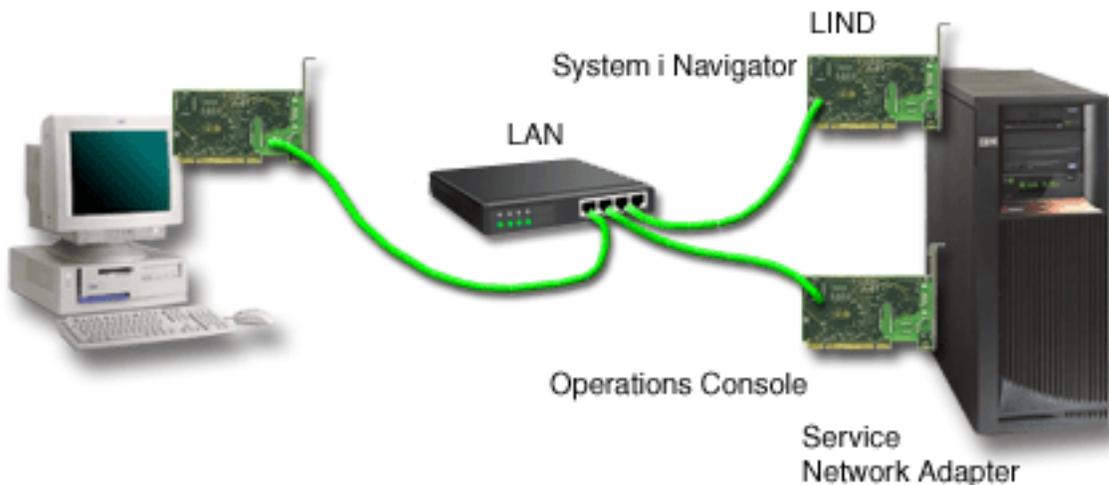
Figure 3. System i Navigator and Operations Console configuration on the same network

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 as 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 27
   After you complete the planning requirements and know which configuration and PC operating system you will be using, you can go through one of the predefined checklists for setting up Operations Console. You can also create a customized checklist and complete that.

   "Planning considerations for your control panel" on page 22
   To make a connection to the control panel, you need to configure a remote control panel or a virtual control panel. All IDs that want access need proper authority.

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. A maximum of 26 consoles can be active 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 when a network failure takes place unless a backup console is available. Configure a local console that is directly attached to the system 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 27
    After you complete the planning requirements and know which configuration and PC operating system you will be using, you can go through one of the predefined checklists for setting up Operations Console. You can also create a customized checklist and complete that.
    Related reference
    "Operations Console hardware requirements" on page 7
    You need to meet the PC and System i hardware requirements for an Operations Console configuration.
    "Planning considerations for your backup console" on page 5
    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

Planning considerations for your control panel

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

Both remote control panel and virtual control panel 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.

By default, users and service tools device IDs are no longer automatically granted access to the remote control panel for the partition. But access can be granted 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 20
  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 99
  When setting up your initial connection, you might encounter problems accessing your control panels.

Remote control panel

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

- The local console on a network no longer automatically selects the remote control panel function by default. Use **Properties** to select the function if you want to use the remote control panel. Also, the remote control panel option might not be available for selection until after the first successful connection is established and authorities are verified.
- LAN configurations to the primary partition no longer configure remote control panels for each logical partition to which the device ID is authorized. You have to enter **Properties** and select one or more remote control panels.
  - The remote control panels for the logical partitions have the same functions available as those provided by the LPAR menu. This includes the power-on function, as long as the primary partition stays operational.
- A remote control panel that is directly connected, using parallel cable, is no longer supported.
- A virtual control panel requires the console to be directly connected by a serial cable. The console must be connected to use the control panel functions. The virtual control panel cannot turn on the system unless the connection is to a primary partition and the primary partition is active. The virtual control panel also requires a service tools device ID on the system.
- LAN configurations to logical partitions have less function than one that is directly connected to the primary partition. For example, the remote control panel cannot turn on the logical partition.
  - To obtain the same functions as those associated with the primary partition, create a separate configuration for the remote control panel and specify the primary partition's service host name (interface name). However, this might require another service tools device ID.

- Any configuration where the device ID is not authorized is disabled or missing.
  – The device ID is disabled after the first connection if it was selected but not authorized.
  – The device ID is missing after the first connection if it was not selected and was not authorized.

  After the device ID is authorized, it reappears in **Properties**, on the next connection.

Virtual control panel

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

The virtual control panel 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 virtual control panel. You must, however, create a configuration that uses the network path. You must also have an unused service tools device ID available for the virtual control panel connection. If your console uses the network connectivity already, you need to use the remote control panel option available for that configuration rather than virtual control panel.

In this section you will see references to a unique service tools device ID. If you are using V6R1 for both the Operations Console code and i5/OS on the system, by default the option Autocreate service tools device IDs supplies the connection with this unique device ID. See Operations Console simplification for more information.

The virtual control panel allows nearly all the same functions as the remote control panel. The graphical interface is the same for the virtual control panel as it is for the remote control panel. Only the connectivity is different. Because of the connectivity differences, the virtual control panel cannot, for example, be used to turn on a system or a partition. The virtual control panel function can work with the System i Access for Windows V6R1, or later, IBM eServer iSeries Access for Windows V5R4 or V5R3, or iSeries Access for Windows V5R2 that communicates with a System i product running i5/OS V5R3, or later, or OS/400® V5R2.

The virtual control panel 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 virtual control panel. The virtual control panel cannot be used to replace a parallel-connected remote control panel-only configuration. The virtual control panel 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 System i Access Service Packs Web site.

Related concepts

"Operations Console simplification" on page 67
Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

Related reference

"Troubleshooting remote control panel and virtual control panel problems" on page 99
When setting up your initial connection, you might encounter problems accessing your control panels.

Related information

➦ System i Access Service Packs Web site

Limitations of the virtual control panel:

Before you install and use a virtual control panel, 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 system 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 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 system. Use care when working with control panel functions when multiple PCs have access to the functions.

- 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 virtual control panel 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 concepts

  "Operations Console simplification" on page 67
  Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

  Related reference

"Limitations of the virtual control panel" on page 23
Before you install and use a virtual control panel, consider these features and limitations.

Creating a service tools device ID using an existing console:
About this task

The virtual control panel (VCP) requires an available, unused service tools device ID. By default, this should not require any intervention from the user and no longer has any bearing on the console type. To check the current console type setting, follow these steps:

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 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:
About this task

By default, you do not need to do this manual setup. However, if you set the option Autocreate service tools device IDs to a value of 0, then you might have to perform this procedure. For more information, see Operations Console simplification.

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: If you receive the message "The user cannot perform the option selected", it indicates that the option is not unlocked. To unlock this option for use in SST, perform the following steps:

   a. Select **Work with DST environment** ⟶ **Service tools security data**.
   b. Enter a 7 next to the **Work with lock for device IDs from SST** option and press Enter. The status is displayed as Enabled.
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:
About this task

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:
About this task

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. Under **System i Connection**, select the configuration name. This is the name that Operations Console uses to refer to a specific system.

   b. 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:
About this task

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.

   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 **System i serial number** field. This does not have to be the real system serial number. Then, select the partition the VCP will control and 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. Click **Finish**.

10. Select the VCP configuration and go into **Properties**. Select the **Configuration** tab and deselect the console option. Then, click **OK** to exit **Properties**.

Results

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.

Then the **LAN Service Tools Sign-on** window opens.

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 go through one of the predefined checklists for setting up Operations Console. You can also create a customized checklist and complete that.

Related concepts

"Planning considerations for Operations Console" on page 2
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 63
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 20
This scenario discusses a situation in which you might want a single console attached to the system.

"Scenario: Consoles for multiple systems or partitions" on page 20
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 2
> Before you begin setting up your Operations Console, determine how to best configure it.

Setting up a local console directly attached to the system

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 system:

You need to complete this checklist to set up a local console that is directly attached to the system 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 System i Access for Windows.
___ 6. Apply System i 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 system:

You need to complete this checklist to set up a local console that is directly attached to the system 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 System i Access for Windows.
___ 6. Apply System i 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 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 System i Access for Windows.
__ 4. Apply System i Access for Windows service packs.
__ 5. Configure a service host name (interface name).
__ 6. Create service tools device IDs on the system.
__ 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 System i Access for Windows.
__ 4. Apply System i Access for Windows service packs.
__ 5. Configure a service host name (interface name).
__ 6. Create service tools device IDs on the system.
__ 7. Configure Operations Console on the PC.

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

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

__ 1. Meet Operations Console hardware requirements.
__ 2. Meet Operations Console software requirements.
__ 3. Install System i Access for Windows.
__ 4. Apply System i Access for Windows service packs.
__ 5. Configure a service host name (interface name).
__ 6. Create service tools device IDs on the system.
__ 7. 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 27.

View the entire prerequisite checklist:

Installing System i Access for Windows
Before you use Operations Console, you must install System i Access for Windows.

About this task

During the installation of System i Access for Windows, you install a 5250 emulator or IBM Personal Communications V5.9 (V5.7 CSD 1 minimum) and Operations Console support. See the System i Access Web site for up-to-date PC requirements.

To check whether you have System i Access for Windows installed, follow these steps:
1. Click **Start** and select **Settings**.
2. Click **Control Panel**.
3. Double-click **Add/Remove Programs**. If you are using Windows Vista, double-click **Programs and Features**.
4. Look for IBM System i Access for Windows.
5. To close Add/Remove Programs, click **Cancel**.
6. Close the Control Panel.

Results

If you do not have System i Access for Windows installed, use the *System i Access for Windows* DVD, SK3T-4098 to install it:
1. Insert the *System i Access for Windows* DVD into the DVD drive.
2. Select the **System i Access for Windows** option to start the installation. Wait until the **IBM System i Access for Windows** window appears.
3. To continue with the setup program, click **Next** and follow the prompts.
4. If you are installing System i Access for Windows for the first time, 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.
5. To ensure the minimum configuration takes place, select **Custom** or **Full** install and select at least the following components:
   a. **Required Programs**
   b. **5250 Display and Printer Emulator** (if IBM Personal Communications (V5.9 or V5.7 CICS system definition data set (CSD) 1 minimum) is not installed)

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

      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**.
6. Click **Next** and follow the prompts.
7. Apply System i Access for Windows service packs.

   Related reference

   "Planning considerations for your Operations Console installation or upgrade" on page 11
   To plan for your Operations Console installation or upgrade, you need to know this information.

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

   Related information

   ⇨ System i Access Web site
   System i Access for Windows

Applying System i Access for Windows service packs:

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

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

- The System i 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 87
   If you encounter connection problems when connecting a console, Operations Console provides status messages to assist you in troubleshooting the connections.

   Related information

    System i 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 that is directly attached to the system or one that allows remote access, you 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 an 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.

About this task

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 System i Access for Windows is installed.

     Note: The default installation path is 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**.

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.

About this task

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 System i 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 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.

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**.

DANGER

> Electrical voltage and current from power, telephone, and communication cables are hazardous.
>
> To avoid a shock hazard:
> - Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
> - Connect all power cords to a properly wired and grounded electrical outlet. Ensure outlet supplies proper voltage and phase rotation according to the system rating plate.
> - Connect any equipment that will be attached to this product to properly wired outlets.
> - When possible, use one hand only to connect or disconnect signal cables.
> - Never turn on any equipment when there is evidence of fire, water, or structural damage.
> - Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
> - Connect and disconnect cables as described below when installing, moving, or opening covers on this product or attached devices.
>
>   To Disconnect:
>   1. Turn everything OFF (unless instructed otherwise).
>   2. Remove power cords from the outlet.
>   3. Remove signal cables from connectors.
>   4. Remove all cables from devices.
>
>   To Connect:
>   1. Turn everything OFF (unless instructed otherwise).
>   2. Attach all cables to devices.
>   3. Attach signal cables to connectors.
>   4. Attach power cords to outlet.
>   5. Turn device ON.
>
> **(D005)**

Important: It is assumed that 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 the 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.
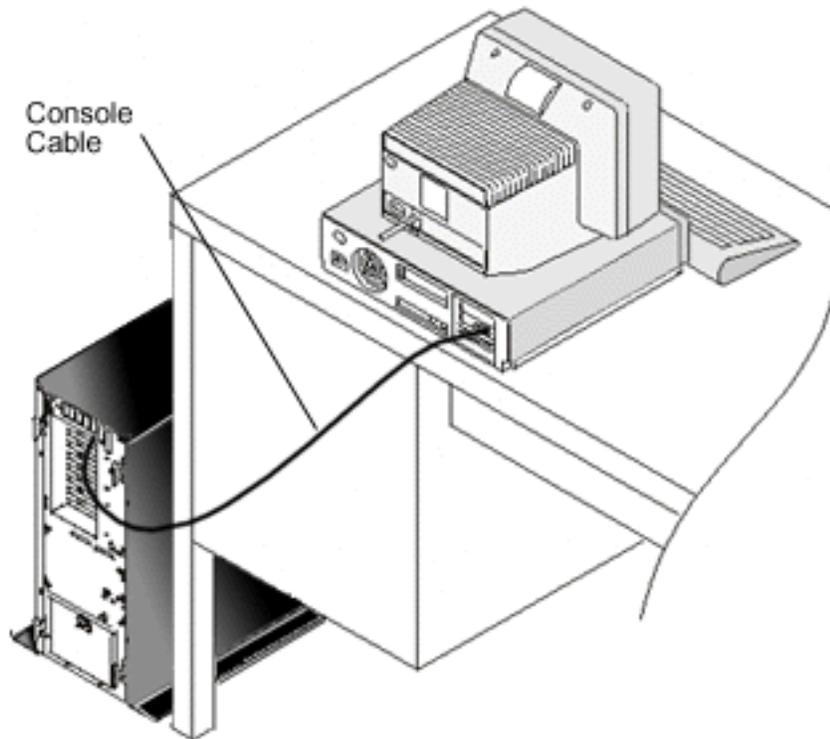
Console Cable

Related reference

"Operations Console cable requirements" on page 10
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 11
To plan for your Operations Console installation or upgrade, you need to know this information.

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.

About this task

Notes:

- You must have Administrator rights to create or alter a configuration.
- If you are installing Operations Console for a new system, power on the system at this time.

To start Operations Console on the PC, follow these steps:

1. Click **Start**.
2. If you are using Windows XP or an earlier Windows operation system, select **Programs**. If you are using Windows Vista, select **All Programs**.
3. Select **IBM System i Access for Windows**. It is assumed that the system is powered on and is in the process of or has completed an IPL.

   Allow at least 10 minutes for the IPL process to reach a usable state before continuing. This is to ensure that the system can respond to the query the PC performs during the configuration wizard. If the system has an attention light with either a SRC of A6005008 or A9002000, continue with the

| configuration wizard. If you get a different SRC, you might have a hardware problem that could
| prevent this process from completing successfully. In this case, you might be asked to provide
| additional data during the configuration wizard.

4. Select **Operations Console**.

   If Operations Console does not appear, you need to complete an IBM System i Access for Windows
   selective setup. Click **Start** → **Programs** → **IBM System i Access for Windows** → **Selective Setup**.

| 5. Use the appropriate instructions for your desired configured connection to complete the setup wizard.

| **Important:** IBM System i and eServer i5 models start counting logical partitions with the number 1
| (even if it is the only partition) instead with 0. iSeries 8xx models start counting logical
| partitions with the number 0. For the console to connect correctly, 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.

| You can use the connection's **Properties** → **Configuration** tab to select or deselect the function you
| want to use for this connection.

Results

To start your connection, highlight the connection name, and then use one of these methods:

1. Right-click the connection name and select **Connect**.

2. Click the connection icon in the toolbar.

3. Click the connection drop-down list and select **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 2
> Before you begin setting up your Operations Console, determine how to best configure it.
>
> "PC preparations for Operations Console" on page 27
> After you complete the planning requirements and know which configuration and PC operating
> system you will be using, you can go through one of the predefined checklists for setting up
> Operations Console. You can also create a customized checklist and complete that.

| **Configuring a local console on a network (LAN):**

| To create a local console on a network (LAN), follow these steps.

| 1. Click **Start** → **Programs** → **IBM System i Access for Windows** → **Operations Console** to start
| Operations Console.

| **Note:** If no configuration exists, a setup wizard automatically starts. If Operations Console has a
| previous configuration, it opens with the existing configurations and does not start the setup
| wizard. In such a case, click **Connection** and select **New Connection** to start the setup wizard
| manually.

| 2. In the Welcome window, click **Next**.

| 3. If you get the Configure Operations Console Connection dialog, click **Next**. If you do not want to see
| this dialog again, you can select the **Do not ask me again** option before clicking **Next**.

| 4. On the **Select Configuration** window, leave **Local console on a network (LAN)** selected. Then, click
| **Next**.

| 5. On the Specify Service Host Name window, enter the service host name (service interface name) of
| the system or partition you want to connect to.

| To create the service host name (service interface), use one of the following ways:

- Manually assign the name along with the network configuration using the current console or another workstation.
- Let the PC assign the name and IP information.

Click **Next** to allow the system to search for the system on the network. If the PC receives information back from the network or the target service interface, the **Service TCP/IP Address** shows the IP address returned.

6. Verify if the IP address shown is correct, and then click **Next**.
7. Verify or supply data for all the required fields. Then, click **Next**.

   The partition numbering on models 8xx starts at 0. Partition numbering on all other models starts at 1.
8. If this is the first console connection to the system, accept the default QCONSOLE service tools device ID provided in the field. If you have created a specific service tools device ID for this configured connection, enter it now. Then, click **Next**. This takes you to the Complete window.
9. Click **Finish** to save the configuration and exit the setup wizard.

Results

If you plan to use the remote control panel function with this configured connection, you need to make a successful connection before you can select the option in **Properties**. This allows Operations Console to determine that the service tools device ID being used for this connection has permission to the remote control panel functions on the system.

Note: You no longer have to assign an access password. Operations Console has made this assignment and will automatically manage it. If, however, you elect to change this password in **Properties**, you will take control from Operations Console and you will have to manually enter it when prompted at the time of a connection. See Operations Console simplification for more information.

Related concepts

"Operations Console simplification" on page 67
Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

Related tasks

"Configuring a service host name (interface name)" on page 75
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.

Related information

Bootstrap Protocol

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).

Before you begin

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.

About this task

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

To connect a local console on a network to a system, follow these steps:

1. Open Operations Console to start the connection.
   a. Click **Start** and select **Programs**.
   b. Select **IBM System i 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** on the Properties page, the local console connects to the system automatically.

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 Service Tools Sign-on window, sign on using your assigned service tools user ID and password. If you see the LAN Service Tools Sign-on window, enter your access password, service tools user ID, and service tools password to authorize the connection between the local console and system.

   Note: If you manually changed the access password, the system can no longer automatically supply it and you need to enter it here.

   After you sign on successfully, the connection status shows **Connected**.

4. Confirm that the console and remote control panel, if configured, appears.

Results

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

Related tasks

"Connecting to another system" on page 46
After another connection is created, you can perform these steps to connect Operations Console to another system.

Related reference

"Network connection errors" on page 90
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 14
Operations Console security consists of service device authentication, user authentication, data privacy, and data integrity.

"Troubleshooting status message" on page 87
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

Configuring a local console directly attached to the system:

To create a new local console that is directly attached to the system, follow these steps.

1. Click **Start** → **Programs** → **IBM System i Access for Windows** → **Operations Console** to start Operations Console.

   Note: If no configuration exists, a setup wizard automatically starts.

   If Operations Console has a previous configuration, it opens the existing configuration and does not start the setup wizard. In such a case, click **Connection** and select **New Connection** to start the setup wizard manually.

2. In the Welcome window, click **Next**.

3. If you see the Configure Operations Console Connection dialog, click **Next**.

4. In the Select Configuration window, select either **Local console directly attached to the system**. Then, click **Next**.

5. In the Specify Connection Name window, enter a name for this connection. Then, click **Next**.

6. In the Detect Console Port window, leave the option **Detect console communication port** selected. Click **Next**.

7. If you see the Port Not Found window, take one of the following actions:

   - Click **Back** to try again, if you have found a possible reason for the port not found error and corrected it.

   - Click **Next** to manually assign the port.

8. In the Select Console Port window, accept this next available port or select another port where you have the console cable attached. Operations Console uses COM ports 1 thru 9. After selecting a port, click **Next**.

9. In the Complete window, click **Finish**.

Connecting a local console directly attached to the system:

Connecting a local console that is directly attached allows System i control to be performed without the need for a network.

About this task

To connect a local console that is directly attached to the system (with or without remote access allowed), follow these steps:

1. Open Operations Console to start the connection.

   a. Click **Start** and select **Programs**.

   b. Select **IBM System i Access for Windows**.

   c. Click **Operations Console**.

   By default, Operations Console does not automatically try to connect a local console that is directly attached to a system. However, a local console that is directly attached with remote support running in unattended mode automatically connects. If you selected **Start connection when Operations Console starts** in **Properties**, the local console connects to the system automatically.

2. If you set up your local console configuration to start in attended mode, complete the following steps:

   a. In the Service Tools 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.

   Related reference

   "Remote control panel fails to start" on page 99
   If your remote control panel fails to start, verify these items.

| "Troubleshooting authentication problems" on page 94
| When setting up your initial connection, you might encounter authentication problems.

| "Troubleshooting emulator problems" on page 94
| When setting up your initial connection you may encounter emulator problems.

| "Troubleshooting status message" on page 87
| If you encounter connection problems when connecting a console, Operations Console provides status
| messages to assist you in troubleshooting the connections.

| *Activating the asynchronous communications line on the system:*

| These instructions apply only to configurations of a local console that is directly attached. To manually
| activate the asynchronous communications line on the system, complete these steps:
| 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 **Up** to select function 26 and press Enter.
| 5. Use **Down** to select function 66 and press Enter.

| **Results**

| 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 98
| When working with models that have a double row for the **Function/Data** display portion of the
| control panel, 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 51
| 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 that are directly attached. To manually deactivate the
| asynchronous communications line on the system, follow these steps:

| **About this task**
| 1. If your system is not in manual mode, if the extended functions are not activated, or both, follow
| these steps. Otherwise, go to Step 2.
| 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.

| **Results**

| If the deactivation is successful, the Function/Data window displays D1008065.
| **Related tasks**

| When working with models that have a double row for the **Function/Data** display portion of the
| control panel, the control panel might not automatically display the resulting system reference code
| (SRC).
| **Related reference**
| 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.

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 console connections.

> **Related concepts**
>
> Before you begin setting up your Operations Console, determine how to best configure it.
>
> After you complete the planning requirements and know which configuration and PC operating
> system you will be using, you can go through one of the predefined checklists for setting up
> Operations Console. You can also create a customized checklist and complete that.

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 3
When you plan for Operations Console for one or more of your systems, consider these points.

"Planning considerations for your backup console" on page 5
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.

"Management of multiple consoles" on page 50
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.

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" on page 42
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 type 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 41
  Here is the additional information about the console takeover function.

  "Using the console service functions (65+21)" on page 82
  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.

About this task

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.

Results

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.

When the console device is being determined in an IPL operation, more than one device might be 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. Each additional device that connects will be presented with one of two screens.

For this example, suppose LAN1 is the first device connected. During the IPL, this device shows the IPL status changes just like any other console. LAN2 and LAN3 present a special DST sign-on with data stating "ATTENTION: This device can become the console". The rest of the window is the same as any other DST sign-on window. The device known as CABLED does not initially connect because it is not a console type of LAN. If the asynchronous communications line were to be activated with a function 66 however, the user would see the Console Information Status display showing data related to the current console. The field Take over the console shows no because 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 is now presented with the same Console Information Status display but the Take over the console field shows 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 shows as no because 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 system 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 type is the availability of another workstation. If you are installing the connection 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.

Managing your console configuration

You can manage your local console configurations with these tasks.

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 to another system:

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

About this task

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) or a local console directly attached, you can work with another system in your network or directly attached. Operations Console allows only one directly attached local console configuration, but it allows more than one network 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**.

Results

Note: 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.

Changing a console configuration

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

About this task

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

Changing a local console:
About this task

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. Select the configuration name.
   b. From the **Connection** menu, click **Disconnect**. The connection status shows `Disconnecting`.
   c. 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 local console on a network (LAN):
About this task

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 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 to meet your specific needs while using Operations
Console. You must be a member of the Administrators group to delete a console.

About this task

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 46
You might need to change an existing local console to meet your needs while using Operations
Console.

Deleting a local console:
About this task

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. Select the configuration name from the Operations Console window.
   b. From the **Connection** menu, click **Disconnect**. The connection status shows `Disconnecting`.

c. 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.

Windows 2000/XP users:
About this task

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.
3. If the icon exists, you need to delete the network object as follows:
   a. Right-click the icon.
   b. Select **Delete**.

Changing the value of the autocreate device ID option

This topic steps you through the process of changing the value used by local consoles on a network to automatically manage service tools device IDs.

About this task

To change the value of the autocreate service tools device ID option, follow these steps:
1. Access **Dedicated Service Tools (DST)**.
2. Select **Work with DST environment**.
3. Select **Service tools security data**.
4. Change the value for the option **Autocreate service tools device IDs**.

   If you set the value to zero, you disable this function and you will have to manually create and manage service tools device IDs. This includes resynchronizing the PC and system if the associated password gets out of synchronization. The maximum value allowed is 49.
5. Select option 11 in the **Selection** area. Then, press Enter to save the new value.

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 can be edited. The service tools device ID name used for the connection is shown and the **Device ID** tab is not shown.

The **Configuration** tab contains options that actually change what functions are used and how the configuration connects. Options not available for the associated configuration is disabled.

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 with or without 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 is configured for only the console. The remote control panel is not enabled automatically. This is where you turn on or off any of the functions as needed. Also, the remote control panel option is not available until the configured connection is successfully connected for the first time and permissions have been verified.

The **Device ID** tab is no longer available. The PC automatically handles any resets necessary. The system's service tools device ID must be reset separately only if the option Autocreate service tools device IDs has been set to zero. For more information, see Operations Console simplification.

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. If you manually change this password, the system will no longer manage the access password and you might be required to enter it each time you make a connection. For more information, see Operations Console simplification.

While on the Properties page, 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 appears containing information regarding just that field.

> **Related concepts**
>
> "Operations Console simplification" on page 67
> Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.
>
> **Related reference**
>
> "Preparation for your network environment" on page 13
> 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 interface. You can customize the Operations Console window to view and interact with information that is most important to you.

Each time Operations Console starts initially, it searches for new systems to be connected. If no new systems are detected and there are no previously configured connections, the setup wizard automatically starts.

On the initial startup of Operations Console, a drop-down menu **Options** is available.

- **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.

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

The icon for configured connections uses a red or a green indicator to show which configurations are connected and which are not connected. The + (plus sign) beside each configured connection is a standard Windows expand and collapse function. Each configured connection expands out into separate functions associated with that connection.

You can use the drag and drop functions to configure connections. You can 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.

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, cannot become the console when a connection is attempted.

> **Related reference**
>
> "Planning considerations for your backup console" on page 5
> 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.
>
> "Takeover or recovery of an Operations Console connection" on page 40
> You can use these functions to take control of another console device.

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 is successful and the console attempting to connect is presented with a sign-on window or status window.

About this task

Which window you see depends on whether the option **Allow console recovery and console can be taken over by another console** is enabled or not. If the option is enabled, then you are presented with a sign-on window to verify whether you have permission to perform a takeover operation. If the option is not enabled, then you are presented with the Console Information Status window. The reason will be displayed at the bottom of the window. In this case, takeover is not enabled.

The Console Information Status window shows 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 you to determine whether or not this method is the correct way to manage console activities.

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 39
These instructions apply only to configurations of a local console that is directly attached. To manually activate the asynchronous communications line on the system, complete these steps:

"Deactivating the asynchronous communications line on the system" on page 39
These instructions apply only to local consoles that are directly attached. To manually deactivate the asynchronous communications line on the system, follow these steps:

Related reference

"Changing from one console type to another" on page 52
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 82
   Console service functions (65+21) are the emergency console recovery functions.

Changing from one console type to another

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

As part of your migration, you might 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.

   Related tasks

   "Deallocating or moving the LAN adapter card from use by Operations Console" on page 77
   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 51
   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 7
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 nonpartitioned 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.

Results

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 55
> 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 7
> 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.

About this task

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.

Results

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 7
    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.

About this task

Follow these steps on the PC:

1. Disconnect the current console connection. To disconnect, do the following:

   a. Under **System i Connection**, select the configuration name. 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.

DANGER

Electrical voltage and current from power, telephone, and communication cables are hazardous.

To avoid a shock hazard:

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to a properly wired and grounded electrical outlet. Ensure outlet supplies proper voltage and phase rotation according to the system rating plate.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described below when installing, moving, or opening covers on this product or attached devices.

  To Disconnect:

  1. Turn everything OFF (unless instructed otherwise).
  2. Remove power cords from the outlet.
  3. Remove signal cables from connectors.
  4. Remove all cables from devices.

  To Connect:

  1. Turn everything OFF (unless instructed otherwise).
  2. Attach all cables to devices.
  3. Attach signal cables to connectors.
  4. Attach power cords to outlet.
  5. Turn device ON.

  (D005)

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. Under **System i Connection**, select the configuration name.

b. From the **Connection** menu, click **Delete**.

c. Click **Yes** to confirm the deletion.

Related concepts

"PC preparations for Operations Console" on page 27
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can go through one of the predefined checklists for setting up Operations Console. You can also create a customized checklist and complete that.

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 that is directly attached to the system.

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

To migrate an Operations Console local console on a network (LAN) to a local console that is directly attached, follow these steps on the system by 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 (System i Connections) or you plan to use the local console on a network (LAN) as a backup console, you do not need to do the clear operation. 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 operation.
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.

Results

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**.

   Related tasks

   "Configuring the PC to use the new console type" on page 59
   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 that is directly attached, follow these steps on the system by using the existing console.

About this task

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 (System i Connections) or you plan to use the local console on a network (LAN) as a backup console, you do not need to do the clear operation. If either of these choices is true, continue with step 17.

14. Press F6 to perform a clear operation.
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.

Results

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"
  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.

About this task

DANGER

Electrical voltage and current from power, telephone, and communication cables are hazardous.

To avoid a shock hazard:

- Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.
- Connect all power cords to a properly wired and grounded electrical outlet. Ensure outlet supplies proper voltage and phase rotation according to the system rating plate.
- Connect any equipment that will be attached to this product to properly wired outlets.
- When possible, use one hand only to connect or disconnect signal cables.
- Never turn on any equipment when there is evidence of fire, water, or structural damage.
- Disconnect the attached power cords, telecommunications systems, networks, and modems before you open the device covers, unless instructed otherwise in the installation and configuration procedures.
- Connect and disconnect cables as described below when installing, moving, or opening covers on this product or attached devices.

  To Disconnect:
  1. Turn everything OFF (unless instructed otherwise).
  2. Remove power cords from the outlet.
  3. Remove signal cables from connectors.
  4. Remove all cables from devices.

  To Connect:
  1. Turn everything OFF (unless instructed otherwise).
  2. Attach all cables to devices.
  3. Attach signal cables to connectors.
  4. Attach power cords to outlet.
  5. Turn device ON.

  (D005)

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. Under **System i Connection**, select the configuration name. 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 system 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. Under **System i Connection**, select the configuration name.

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 system" on page 28
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 7
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 nonpartitioned or primary partitioned system:

To change from a twinaxial console to an Operations Console, you must use the existing console to complete 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.

Results

The system is now configured for use by your intended console type. You must do an initial program load (IPL) of the system so that it can use the new console.

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**.

  Related reference

  "Operations Console hardware requirements" on page 7
  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 63
  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 doing an initial program load (IPL).

About this task

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.

Results

The system is now configured for use by your intended console type. You must do an initial program load (IPL) of the system so that it can use the new console.

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 7
  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 preferred that you turn off the system 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 27
After you complete the planning requirements and know which configuration and PC operating system you will be using, you can go through one of the predefined checklists for setting up Operations Console. You can also create a customized checklist and complete that.

Changing from an Operations Console to a twinaxial console

To change from an Operations Console to a twinaxial console, you must complete a set of 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 7
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 nonpartitioned 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 (System i Connections) or you plan to use the local console on a network (LAN) as a backup console, you do not need to do the clear operation. 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.

   Results

The system is now configured for use by your intended console type. You must do an initial program load (IPL) of the system so that it can use the new console.

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 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**.

    Related tasks

    "Deallocating or moving the LAN adapter card from use by Operations Console" on page 77
    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 66
    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.

About this task

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 (System i 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 operation. 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.

Results

The system is now configured for use by your intended console type. You must do an initial program load (IPL) of the system so that it can use the new console.

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:

About this task

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 System i 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 System i Connection).

   b. From the Connection menu, click **Delete**.

   c. Click **Yes** to confirm the deletion.

   d. Uninstall System i Access for Windows.

4. 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.

Results

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 nonpartitioned or primary partitioned system" on page 64
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 65
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.

Operations Console simplification

Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

Operations Console automates working with service tools device IDs. The system, by default, is set to maintain up to ten service tools device IDs of a maximum value of 49 in addition to QCONSOLE. You no longer have to manually create a new device ID when adding a PC to connect into a system or partition. Also, Operations Console takes control of the access password activity for you. The authentication process remains the same, but when this function is active, you are not asked to enter the access password during a connection. However, you must provide a DST user ID and password to successfully connect. This function does not affect a local console that is directly attached or any other console type.

Autocreate service tools device IDs

By default, the i5/OS operating system sets the value of the **Autocreate service tools device IDs** option to 10. This default value gives you 11 connections to be automatically managed. You have QCONSOLE as a default ID and then 10 additional service tools device IDs. These display as QCONSOLE00, QCONSOLE 01, through whatever value is set. It is recommended that you have at least one spare so

you need not remember to increase the value if you try to add an additional connection. These service
tools device IDs are listed in the Work with Service Tools Device IDs window so you can keep track of
how many are created. However, the device ID QCONSOLE is listed and can be used normally. For
example, if you create a service tools device ID with a name of QCONSOLE02, when the third connection
is established to use the autocreated device IDs, the ID is given out as if it were created automatically.

You can change the default value of the **Autocreate service tools device IDs** option by performing the
instructions in Changing the value of the autocreate device ID option topic.

This function is used for any new configured connections you create. This means that if you upgraded
from a prior release of Operations Console on the PC, your current configurations are retained and
continue to work just as they did before. However, if the PC and system do get out of synchronization,
instead of issuing an error message to resynchronize them, this function automatically recovers the issue.

When you create a local console on a network configured connection, you need to enter the name of the
service interface (service host name.) The name you use depends on the circumstances for the connection.
For example, if this is a new system and this is the first console to connect, then the name might be
whatever you want to call it or it might be what a DHCP server gave it.

Automatic management of the access password

By default, you cannot set an access password when you create an Operations Console configuration. An
access password is automatically generated and supplied to the connection process at the appropriate
time. You do not need to know this password as it is automatically managed by the system.

However, if you do want to change the access password, you can do this on the **Properties** page.
Changing this password causes the automatic process of supplying the password to be disabled. You
need to enter your access password for any connection that requires an access password.

The sign-on process requires a valid DST user ID and password to be entered to authenticate the user.

Automatic discovery of systems

When Operations Console starts, a search for qualified systems begins. A *qualified system* is any system
running i5/OS V6R1. It does not need to have Operations Console as the console type. If the PC gets a
response from the network for any qualified systems, Operations Console creates a configuration for that
system. It also preserves any pre-existing configured connections. A qualified system must have a value
set for the **Autocreate service tools device IDs** option, which has a default value of 10. If this value is
zero, the system might not report correctly and therefore might not show up in this auto-generated list of
systems. This auto-discovery function occurs any time Operations Console begins or when performed
on-demand by holding down the alt key, the shift key, and then pressing w. This causes Operations
Console to begin a new search for eligible systems.

Important: If a system shows up in the list of configured connections, it does not guarantee that the
system can be connected to. In rare cases, there are conditions in which the system is able to
satisfy the requirements to report but not meet all requirements for a connection.

Related tasks

"Changing the value of the autocreate device ID option" on page 48
This topic steps you through the process of changing the value used by local consoles on a network to
automatically manage service tools device IDs.

"Creating service tools device IDs on the system" on page 74
You will need to set up service tools device IDs on the system for a local console on a network
configuration.

Considerations for changing the service tools device ID passwords

You need to review these considerations before you reset the service tools device ID password.

By default, the system and PC automatically maintain service tools device IDs. If you elect to set the option Autocreate service tools device IDs to 0, then you must manually manage these device IDs. Consider the following information if you elect to manually manage the device IDs.

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.
- By default, the PC automatically creates and manages the access password and you cannot set this password during the creation of a configuration. However, if you need to manually manage the access password, you can change the password on the **Properties** page and you might have to supply this password when making a connection.
- 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. If the configuration uses QCONSOLE as the device ID, do not reset the device ID until you are again ready to use it. By default you do not need to manage this unless you elected to set the system option Autocreate service tools device IDs to 0.

Related concepts

"Operations Console simplification" on page 67
Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

Related tasks

"Unlocking service tools device IDs in SST" on page 84
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 70
By default, the system creates and maintains the service tools device ID and its password. You should not have to manually resynchronize the password. However, if the system option Autocreate service tools device IDs is set to 0, then you must manually manage the IDs and their passwords.

"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.

By default, the system manages the service tools device IDs and its password. As a result, you do not need to resynchronize the device ID passwords manually.

You can resynchronize the PC and service tools device ID password 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 concepts

"Operations Console simplification" on page 67
Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

Related reference

"Considerations for changing the service tools device ID passwords" on page 69
You need to review these considerations before you reset the service tools device ID password.

"Resynchronizing the PC and service tools device ID password"
By default, the system creates and maintains the service tools device ID and its password. You should not have to manually resynchronize the password. However, if the system option Autocreate service tools device IDs is set to 0, then you must manually manage the IDs and their passwords.

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.

About this task

By default, the system automatically creates and maintains an access password. If you manually change the access password in **Properties**, you take control of this password and might have to provide it each time you make a connection.

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 must use this password during the connection process to sign on through the LAN Service Tools 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**.

Results

Related concepts

"Operations Console simplification" on page 67
Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

Resynchronizing the PC and service tools device ID password

By default, the system creates and maintains the service tools device ID and its password. You should not have to manually resynchronize the password. However, if the system option Autocreate service tools device IDs is set to 0, then you must manually manage the IDs and their passwords.

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 that is directly attached to the system (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 74
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 69
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:

This procedure is only necessary if the system option Autocreate service tools device IDs is set to 0 and the system is no longer maintaining service tools device IDs.

About this task

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

"Unlocking service tools device IDs in SST" on page 84
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 73
You no longer need to manually reset a connections service tools device ID password on the client PC.

Related information

Access service tools

Using a console session with another device:
About this task

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:
About this task

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 System i 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:
About this task

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.

Note: To increase the success rate of resetting with the control panel, it is recommended that you disconnect the configured connection before you begin the reset procedure.

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 8xx):

   xxxxxxxxxxxxxxxx
   xxxxxxxxxxxxxxxx

   Each word is 8 characters but 4 words are displayed at a time for functions 12 through 19. For example, requesting function 12 will provide you:

   word__12word__13
   word__14word__15

   Requesting function 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.

Results

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.

About this task

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 71
> This procedure is only necessary if the system option Autocreate service tools device IDs is set to 0 and the system is no longer maintaining service tools device IDs.

Deleting the configuration and re-creating it:
About this task

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 System i 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 System i 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:
About this task

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.

About this task

By default, the system maintains service tools device IDs automatically. You only need to do this procedure if the system option Autocreate service tools device IDs is set to 0.

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.

Results

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 must 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 doing 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 concepts

"Operations Console simplification" on page 67
Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

Related reference

"Resynchronizing the PC and service tools device ID password" on page 70
By default, the system creates and maintains the service tools device ID and its password. You should not have to manually resynchronize the password. However, if the system option Autocreate service tools device IDs is set to 0, then you must manually manage the IDs and their passwords.

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.

About this task

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 type 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 13
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.

About this task

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.

Results

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 nonpartitioned or primary partitioned system" on page 64
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 11
To plan for your Operations Console installation or upgrade, you need to know this information.

"Changing from one console type to another" on page 52
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.

About this task

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

Results

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

"Unlocking service tools device IDs in SST" on page 84
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 81
You can start your system by performing a manual initial program load (IPL).

"Completing the PC changes" on page 80
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 System i 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 System i 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.

About this task

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 System i Access for Windows was installed. Then, expand **Client Access** → **Emulator** → **Private**.

   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** twice.

Starting the system using a manual IPL

You can start your system by performing a manual initial program load (IPL).

About this task

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 95
If you receive any of these system reference codes (SRCs), you might have some problems in your Operations Console configuration.

Using the console service functions (65+21)

Console service functions (65+21) are the emergency console recovery functions.

Note: This is a service function that requires familiarity of control panel functions. Improper use of this service function can cause the system to become unstable. Call your local support for assistance if you have concerns about making your system unstable.

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.

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.

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)

Related reference

"Preparation for your network environment" on page 13
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

The OPSCONSOLE macro is the system-side debugging and analysis tool for collecting data for or
managing console-related work.

About this task

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 remove the current console from service 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.

Unlocking service tools device IDs in SST

With the Work with service tools user IDs and Devices option, you can change Operations Console
configuration data from system service tools (SST) .

About this task

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** → **Display/Alter/Dump** → **Display/Alter storage** → **Licensed Internal Code (LIC) data** → **Advanced analysis**.
3. 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**.
4. 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 71
   This procedure is only necessary if the system option Autocreate service tools device IDs is set to 0 and the system is no longer maintaining service tools device IDs.

   "Changing network values for Operations Console (LAN)" on page 78
   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 69
   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 102
   You can use this information to correct a problem when the takeover function isn't working.

Method 2: Unlocking the service tools device IDs:
About this task

Alternatively, you can unlock the service tools device IDs by performing the following steps in DST:

1. Access service tools using DST.
2. Select **Work with DST environment** → **Service tools security data**.
3. Type a 7 next to the **Work with lock for device IDs from SST** option and press Enter.

Results

The status displays as Enabled, indicating that the service tools device ID has been unlocked.

Changing the mode of the emulator between 3179 and 3477

There are times when you might need to change the mode of the emulator from its current setting to something wider or narrower depending on what you are viewing.

About this task

By default, the emulator is set to 24 X 80 (3179), so viewing a spooled file or vlog requires you to use the keyboard to shift right and left in the window. In this case, it might be more convenient to use the 27 X 132 (3477) mode.

| **Note:** During the transition from one mode to the other, the console is disconnected and reconnected.

| To change the mode of the emulator, follow these steps:
| 1. In the emulator window, click **Communications**.
| 2. Select **Configure**, and then click **Session Parameters**.
| 3. Select the desired screen size and click **OK**.
| 4. Click **OK** to end the connection.
| 5. Click **OK** to close the emulator session.

| If the option **Allow console recovery and console can be taken over by another console** is not enabled,
| the console returns to the sign-on window and is in the correct mode. You can exit these instructions.

| If the option **Allow console recovery and console can be taken over by another console** is enabled, the
| console returns to the sign-on window, but the Console Information Status window does not open and
| the option to take over control is most likely set to no. This is due to a change in the emulator's attributes
| and the new console type does not match that of the current console when it connected. At this point,
| you need to take one of the following actions:
| • Use system service tools (SST) from another workstation to run the macro OPSCONSOLE RESTART.
| • Use the console service functions (65+21) to run functions 65, 21, 21, which restarts the console.

| The console closes again, but it should reconnect in two or three minutes.
| **Related tasks**
| "Using the OPSCONSOLE macro" on page 84
| The OPSCONSOLE macro is the system-side debugging and analysis tool for collecting data for or
| managing console-related work.
| **Related reference**
| "Using the console service functions (65+21)" on page 82
| Console service functions (65+21) are the emergency console recovery functions.

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.

| The Operations Console client (PC) keeps a set of logs that can be wrapped to be used by IBM
| development in assisting with customer issues. These logs are not meant to be used by the end user.
| Details of what to capture and its format change often to keep current with the types of issues being
| reported. If you report a problem to your service provider, you might be asked to send specific logs from
| the PC, as well as data captured by the system.

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 and then pressing 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.

With the addition of autodiscovery of systems and PCs comes another hot-key activation function. When Operations Console is started, the discovery process is also started. If you have active connections to other systems and have just completed the setup of a new system that should be discoverable, you can start a new discovery process by pressing and holding the **Alt** and **Shift** keys, and then pressing the **w** key (**Alt+Shift+w**). When the discovery process is completed, your new system is shown and you can start a connection to it.

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.

Before you start troubleshooting the connection, install latest Service pack for System i Access for Windows.

> **Related reference**
>
> "Applying System i Access for Windows service packs" on page 30
> You need to have the latest Service Pack program temporary fix (PTF) for System i Access for Windows and the latest level of System i 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 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 status appears during an initial connection to a system when the Service Tools sign-on window appears. This status remains until the first user signs on successfully at a local console. A local console over a network (LAN) might present the Service Tools Sign-on or the LAN Service Tools Sign-on window depending on whether you have taken control of the access password. Subsequent connections to the same system do not prompt the user again.

Connected
> This status appears at the local console after an initial connection to the system is completed (the user signed on successfully to Operations Console).

Disconnecting
> This status appears at the local console when the local console user disconnects from a system and the PC is disconnecting the connection.

Disconnected
> This status appears at the local console after the local console user disconnects from a system and the PC is no longer communicating with the system.

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 status 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 status 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 status 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 status 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 status 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 status 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 99
> 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 101
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 87
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.

Some connection problems might require the use of the console service functions (65+21) to make changes to the system or to do a specific function before a connection can be made.

Related reference

"Troubleshooting emulator problems" on page 94
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.

About this task

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.

Results

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 98
When working with models that have a double row for the **Function/Data** display portion of the
control panel, 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 cable isolates the PC and system from any potential problems on your
  network that might interfere with proper operations.
- 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 were between them. The use of a
  crossover cable might also require a nonstandard network configuration at the system and PC.

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 94
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 console status remains Connecting:

These are solutions to problems that prevent the local console from connecting to the system 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 cable isolates the PC and system from any potential problems on your network that might interfere with proper operations.

  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 were 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 has 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.

Using HyperTerminal to validate connectivity between client and the system:

HyperTerminal is a Windows application used for connecting to various sources. It is supplied by all Windows operating systems on the installation media, although it might not be automatically installed. When the local console directly attached to the system does not connect, you can use HyperTerminal to determine if the PC has connectivity to the system.

Notes:

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.

3. The use of HyperTerminal might not work properly for some PCs and systems. The result is typically a false failure. If the procedure works as expected, the result can be trusted. But if it fails, it is still possible that connectivity is working as expected. This problem depends on various factors which are not limited to the serial port characteristics and the adapter used in the system.

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.

About this task

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**.

> **Note:** If you have a problem accessing the PC's serial port, you might have to power off the PC and then restart it to reset the hardware port.

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 92
To install HyperTerminal, follow these steps.

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.

The following tip is only valid if the system option Autocreate service tools device IDs has a value of 0 and you no longer want the system to automatically maintain service tools device IDs.

Tip: Verify that you are entering a valid service tools user ID and password when using the configuration wizard.

You might also receive an error message regarding a secure connection.

Related concepts

"Operations Console simplification" on page 67
Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

Related reference

"Error message: The connection to the system is not a secure connection" on page 90
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 89
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 91
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.

Console-related system reference codes might require the use of the console service functions (65+21) to change a setting or to do a function.

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 82
> 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 following table by referring to this list:

  - Local console on a network uses words 13, 14, and 15.

  - Local console that is directly attached to the system 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
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

LAN			
If Word 13 value is:	Failure	Word 14 means:	Word 15 means:

Word 16		Word 16 in the form of *xxxx yy zz* means the following:
		• *xxxx* where:
		  – The twinaxial-related SRC is represented by the first 4 characters.
		• *yy* where:
		  – 0A = No console IOP tag
		• *zz* where:
		  – 00 = Not defined by user (old default value)
		  – 01 = Twinaxial
		  – 02 = Operations Console (Direct)
		  – 03 = Operations Console (LAN)
		  – 04 = Hardware Management Console (HMC) or Thin Console	

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 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.

System reference code A9002000
Here are some possible reasons you received system reference code (SRC) A9002000.

• 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 D1008065

When an attempt to activate the asynchronous communications adapter fails, you might get these common return codes for system reference code (SRC) D1008065.

Word 13 values for the *0000zznn* status indicators display differently depending on the system's code level.

Table 6. Word 13 values for the 0000zznn status indicators

zz means:	nn means:
• 10 - Cable port • 20 - Integrated modem port • FF - No supported adapter found	• 00 - Received OK status from modem • 01 - CTS timeout • 02 - Received Connect status from PC client • 03 - Stop request • 07 - Received function 66 while active • 08 - Failed to find port, adapter found • 16 - Failed to find port, adapter not found

Word 14 (panel function 12 and the lower-left first 8 digits if you are using the control panel or remote control panel) contains the reason why an SRC of D1008065 is returned. A successful activation typically occurs when the console type value is set to Operations Console (Direct), a value of 2. All zeros indicate the server was able to activate the asynchronous communications adapter but for some reason was unable to detect the correct condition on the PC. The most common reason for this is that the serial port on the PC is in an unexpected state. Turning off the PC and then turning it back on might clear this condition. An unstable System i Access for Windows installation might also cause this condition. Try uninstalling and then reinstalling the product. Removing the Operations Console connection modem and reinstalling it might also correct this condition.

Table 7. Word 14 values

If Word 14 value is:	Word 14 means:
00000000	Successful activation
00000001	Port not found
00000002	No cable attached
00000004	Activation failed (see Word 15)

Table 8. Word 15 values

If Word 15 value is:	Word 15 means:
CC100301	Resource might be in use
CC10031A	Cable mismatch or country or region code is not set (Use the Change Network Attributes (CHGNETA) command to set country or region code, if needed.)

Related information

Change Network Attributes (CHGNETA) command

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, the control panel might not automatically display the resulting system reference code (SRC).

About this task

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**.

Results

> Related tasks
>
> "Console fails to connect" on page 89
> 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 step in 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 23
> A virtual control panel connects to the system through a serial cable. With virtual control panel, 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 32
> You need to install an Operations Console cable when your configurations have a local console that is directly attached to the system.

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.

About this task

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 Tools Sign-on) has the **Partition remote panel key** privilege for the partition that the user is 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).

Results

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.

By default, the system automatically creates and maintains an access password. If you manually change the access password in **Properties**, you take control of this password and have to provide it each time you make a connection. This increases the chances of meeting the following authentication problems.

- 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 LAN Service Tools Sign-on window is not the same as the password you entered when you manually assigned the access password in **Properties**. Make sure that the `caps lock` is not active and re-enter the access password using the password you assigned, taking into account any case sensitivity you might have used.

- Failure to connect the VCP.

  Error message: `The PC service tools device ID password and the System i 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 System i.`

  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 concepts**
> "Operations Console simplification" on page 67
> Operations Console can automatically create service tools device IDs, manage access passwords, and discover systems.

> **Related reference**
> "Resynchronizing the PC and service tools device ID password" on page 70
> By default, the system creates and maintains the service tools device ID and its password. You should not have to manually resynchronize the password. However, if the system option Autocreate service tools device IDs is set to 0, then you must manually manage the IDs and their passwords.

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 32
  You need to install an Operations Console cable when your configurations have a local console that is directly attached to the system.

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.

> **Related tasks**
>
> "Unlocking service tools device IDs in SST" on page 84
> With the Work with service tools user IDs and Devices option, you can change Operations Console configuration data from system service tools (SST) .

The user cannot perform the option selected

Here is a solution to try when you receive the message `the user cannot perform the option selected`.

You might receive this message under the following circumstances:
- You are working with a local console on a network (LAN) configuration.
- You made an attempt to access the **Service tools device IDs** option on the Work With Service Tools User IDs and Devices window within SST.

This error message indicates that the option is not unlocked. You need to unlock the option before continuing.

> **Related tasks**
>
> "Unlocking service tools device IDs in SST" on page 84
> With the Work with service tools user IDs and Devices option, you can change Operations Console configuration data from system service tools (SST) .

Related information for Operations Console

Web sites and other information center topic collections contain information that relates to the Operations Console topic collection. You can view or print any of the PDF files.

Web site

- System i Access Web site (www.ibm.com/servers/eserver/iseries/access)

  This Web site includes online product information about System i Access and Operations Console.

Other information

- System i Access for Windows: Installation and setup

  This topic collection describes how to install and configure System i Access for Windows on both the system and the PC. Installation and configuration are necessary on both the system and the PC.

- 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.

- Data migrations

  This topic collection 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.

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The drawings and specifications contained herein shall not be reproduced in whole or in part without the written permission of the manufacturer.

The manufacturer has prepared this information for use with the specific machines indicated. The manufacturer makes no representations that it is suitable for any other purpose.

The manufacturer's computer systems contain mechanisms designed to reduce the possibility of undetected data corruption or loss. This risk, however, cannot be eliminated. Users who experience unplanned outages, system failures, power fluctuations or outages, or component failures must verify the accuracy of operations performed and data saved or transmitted by the system at or near the time of the outage or failure. In addition, users must establish procedures to ensure that there is independent data verification before relying on such data in sensitive or critical operations. Users should periodically check the manufacturer's support websites for updated information and fixes applicable to the system and related software.

Electronic emission notices

Class A Notices

The following Class A statements apply to the IBM System i models with the exception of those that are specifically identified as Class B.

Federal Communications Commission (FCC) statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Industry Canada Compliance Statement

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

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A respecte est conforme à la norme NMB-003 du Canada.

European Community Compliance Statement

This product is in conformity with the protection requirements of EU Council Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility. IBM cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication equipment.

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

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

VCCI Statement - Japan

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

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

This product is a Class A Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

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

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

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

Electromagnetic Interference (EMI) Statement - Taiwan

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

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

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

IBM Taiwan Contact Information:

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

Electromagnetic Interference (EMI) Statement - Korea

이 기기는 업무용으로 전자파적합등록을 한 기기이오니 판매자
또는 사용자는 이점을 주의하시기 바라며, 만약 잘못 판매 또는
구입하였을 때에는 가정용으로 교환하시기 바랍니다.

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

Germany Compliance Statement

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

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

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

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

Deutschland: Einhaltung des Gesetzes über die elektromagnetische Verträglichkeit von Geräten

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

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

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

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

Generelle Informationen:

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

Electromagnetic Interference (EMI) Statement - Russia

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

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