

How to Install the Virtual Control Panel

V5R1

Second Edition (July 2002)

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What is the Virtual Control Panel?

The **Virtual Control Panel** (hereafter referred to as VCP) is one of the ways to get remote control panel (RCP) functions on the PC. This is accomplished by using the directly-cabled console's serial cable and connection. There is no requirement for network adapters on the PC or server. You will, however, create a configuration that uses the network path in the Operations Console install wizard. If your console uses the network connectivity already, you should not be using the VCP but rather the already available remote control panel option available for that configuration.

The VCP is not a replacement for the parallel-connected remote control panel (P/N 04N5592 a 25-pin cable) but rather an alternative. You will need to remove the parallel RCP cable, if it is installed. If you are using the serial-connected RCP cable (P/N 97H7591 a 9-pin cable) continue to use it . The VCP allows nearly all the same functions as the RCP but due to its connectivity, it cannot, for example, be used to power on a system. The Graphical User Interface (GUI) is the same as the RCP, only the connectivity is different. The VCP function will work with the V5R1 Client Access Express, or later, client communicating to a V5R1, or later, server.

The VCP will use a TCP/IP connection on the Operations Console cable. Because of this, the directly-cabled console must be connected to the iSeries in order for the VCP to function. The VCP can not be used to replace a parallel-connected RCP only configuration. You will have to have a directly-cabled console configured in order to use the VCP. The VCP will require an additional configuration.

Be certain to read the **Before you begin** section for a list of the requirements and limitations that the VCP may have for your environment.

Before you begin

The following V5R1 LIC PTFs need to be installed on the iSeries server prior to using the VCP:

- o **MF27569**
- o **MF27296**
- o **MF27349**
- o **MF27351**

In addition, the client needs to install V5R1 Client Access Express service pack SI02795 or later. The latest service pack can be found at:

<http://www.ibm.com/servers/eserver/iseries/clientaccess/casp.htm>

or

<ftp://ftp.software.ibm.com/as400/products/clientaccess/win32/v5r1m0/servicepack>

Limitations:

- The VCP is only available while the console is connected.
- You must remove the parallel remote control panel cable before configuring the VCP connection.
- A unique service tools device profile must exist for each VCP configuration.
For example, you have connected a PC named **console** to **server1** using a direct cable and you now want to configure a VCP. If no Operations Console LAN configuration exists to this server then the service tools device profile **QCONSOLE** has not been used. Therefore, you can specify **QCONSOLE** when you configure the VCP.
Another example would involve a cabled console called **console** that shares the duties as a console with other LAN-connected Operations Console PCs named **LAN1** and **LAN2**. In this example **LAN1** used the service tools device profile **QCONSOLE** during setup and **LAN2** used a user-created service tools device profile of **QCONSOLE2** during its setup. For the intended VCP configuration you must create another service tools device profile, such as **QCONSOLE3** to be specified when you configure the VCP.
- You cannot use an existing network name
When you create the additional VCP configuration, you cannot reuse a configuration name. 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 / RCPs are active at the same time
If you have multiple PCs (LAN connected) that can become the console, one at a time, and those configurations also use the remote control panel functions, all active RCPs can control the server. Use care when working with control panel functions when multiple PCs have access to the functions.
- RCS connections to an LCS with remote access are not supported at this time.
- 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 OS/400 by pressing the **Attention** key. You can also use the OS/400 command **go power** and select the option **Change power on and off schedule**.
- 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 and each entry is unique to any others by the connection name. Be aware that, currently, if you delete a VCP configuration the corresponding **hosts** entry is not deleted. You must manually delete the appropriate line from this text-based file using any text editor.
- If you have a server model that uses the keystick, the **mode** button will work with the same functions as the physical control panel, depending on whether the keystick is inserted or not.
- The service tools user profile used to authenticate the connection must have the **Partition remote panel key** privilege in order to use the mode function provided by the VCP. Service tools user profiles **QSECOFR**, **QSRV**, **22222222**, or **11111111** already have this permission by default. If you plan to use a user profile other than the defaults, see "Check user profile for permissions", below, for instructions on how to check for the privileges.
Note: Systems with a keystick require the keystick inserted before the user is eligible to use the mode button. For example, the user has the remote panel key privilege but won't have the mode function available until the keystick is present. For systems without the keystick only the user profile remote panel key privilege is necessary.

What needs to be done

Follow the instructions below to prepare for and install the virtual control panel:

Using existing console, create a service tools device profile to use

The VCP requires an available, unused service tools device profile. If the server does **not** use Operations Console (LAN) for the console type, you can use the existing service tools device profile of **QCONSOLE**. To check for the console type follow these instructions:

1. Start Dedicated Service Tools (DST) to check the console type or create a service tools device profile. To enter DST, either IPL in manual mode or enter function 21 on the control panel. Use the most appropriate method for you by following one of the following steps:
 - To perform a manual IPL, follow these steps:
 - a. Power down the system if it is powered on.
 - b. Look at the Function/Data display on the iSeries 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 **01 B M**.

Note: If the Function/Data display is not lit the system does not have power.
 - c. If the system is already set to **B M** or **Manual** go to step h. Otherwise, continue with step d to set the system to manual mode.
 - d. Press the **Up** or **Down** button until **02** appears in the Function/Data display. If your system uses a keystick, select **Manual** by using the **Mode** button.
 - e. Press the **Enter** button on the iSeries control panel.
 - f. Press the **Up** or **Down** button 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** or **02 B M**.
 - g. Press the **Enter** button on the iSeries control panel.
 - h. Press the **Power** button on the iSeries control panel to power on the server, or start an IPL if the system was already in use.

When the IPL has reached the appropriate step you will see the **IPL or Install the System** window. Select the option **Use Dedicated Service Tools (DST)** and sign on using a user ID that has security authority, like **QSECOFR**.
 - To perform a function 21 at the control panel, follow these steps:
 - a. Sign off the console 5250 session first - leaving the screen at the AS/400 signon since your current session will end when you perform the function 21.
 - b. Look at the Function/Data display on the iSeries 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 **01 B M**.

Note: If the Function/Data display is not lit the system does not have power.
 - c. If the system is already set to **B M** or **Manual** go to step d. Otherwise, use the instructions above to set the system to manual mode.
 - d. Press the **Up** or **Down** button until **21** appears in the Function/Data display.

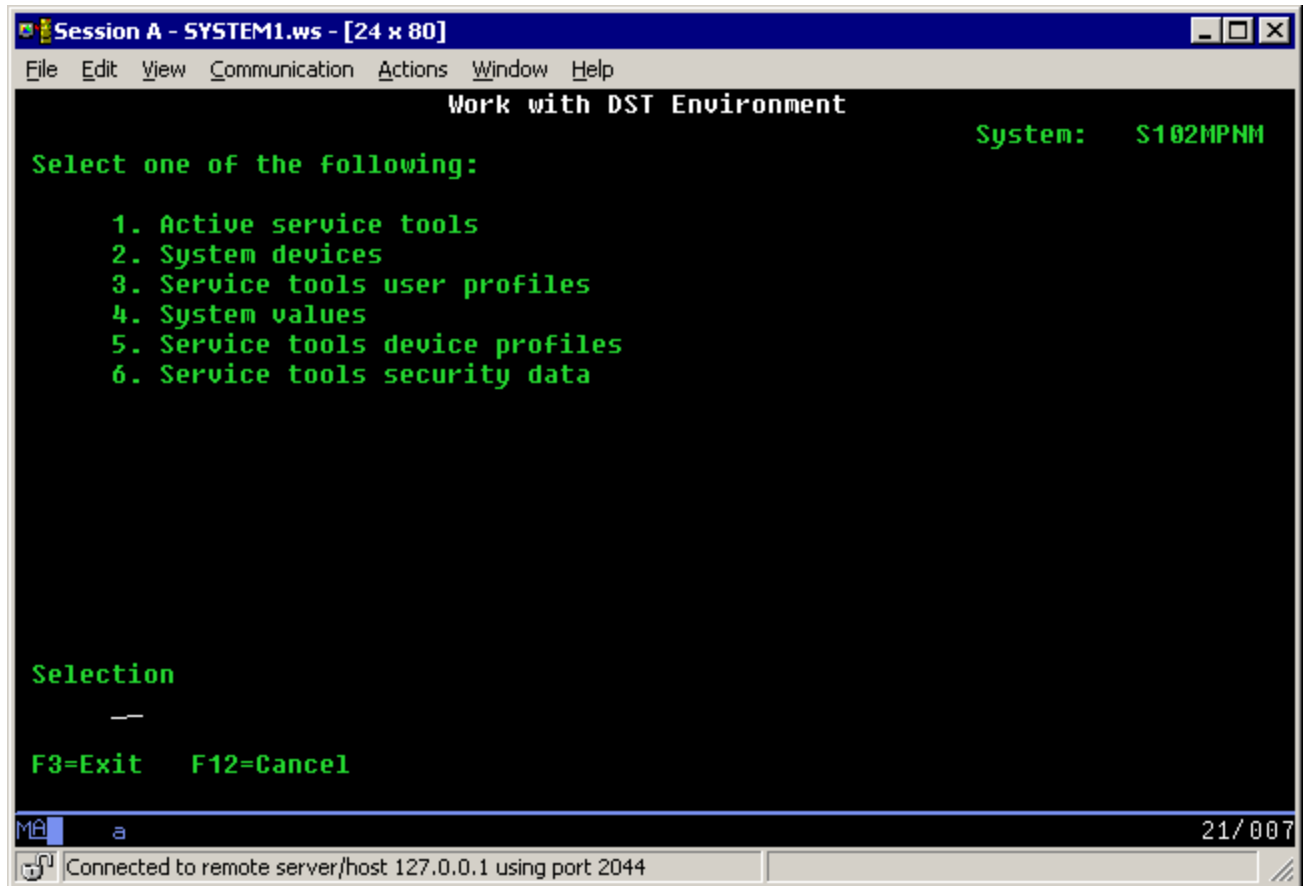
e. Press the **Enter** button on the iSeries control panel.

The console should show the **Dedicated Service Tools (DST) Sign On** window momentarily. Sign on using a user ID that has security authority, like **QSECOFR**.

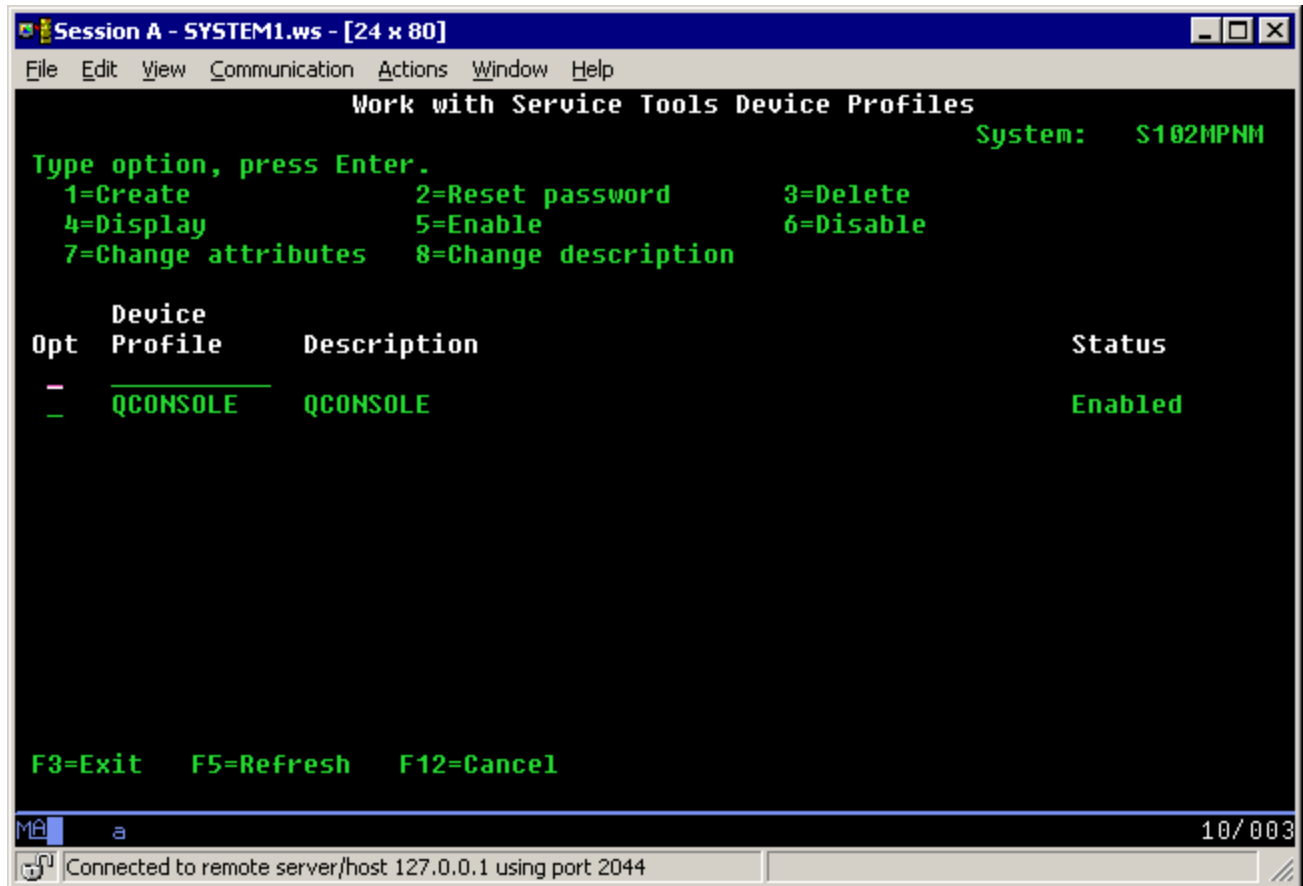
2. You should be here:



3. Select **Work with DST environment** (option 5).



4. Select **Service tools device profiles** (option 5).



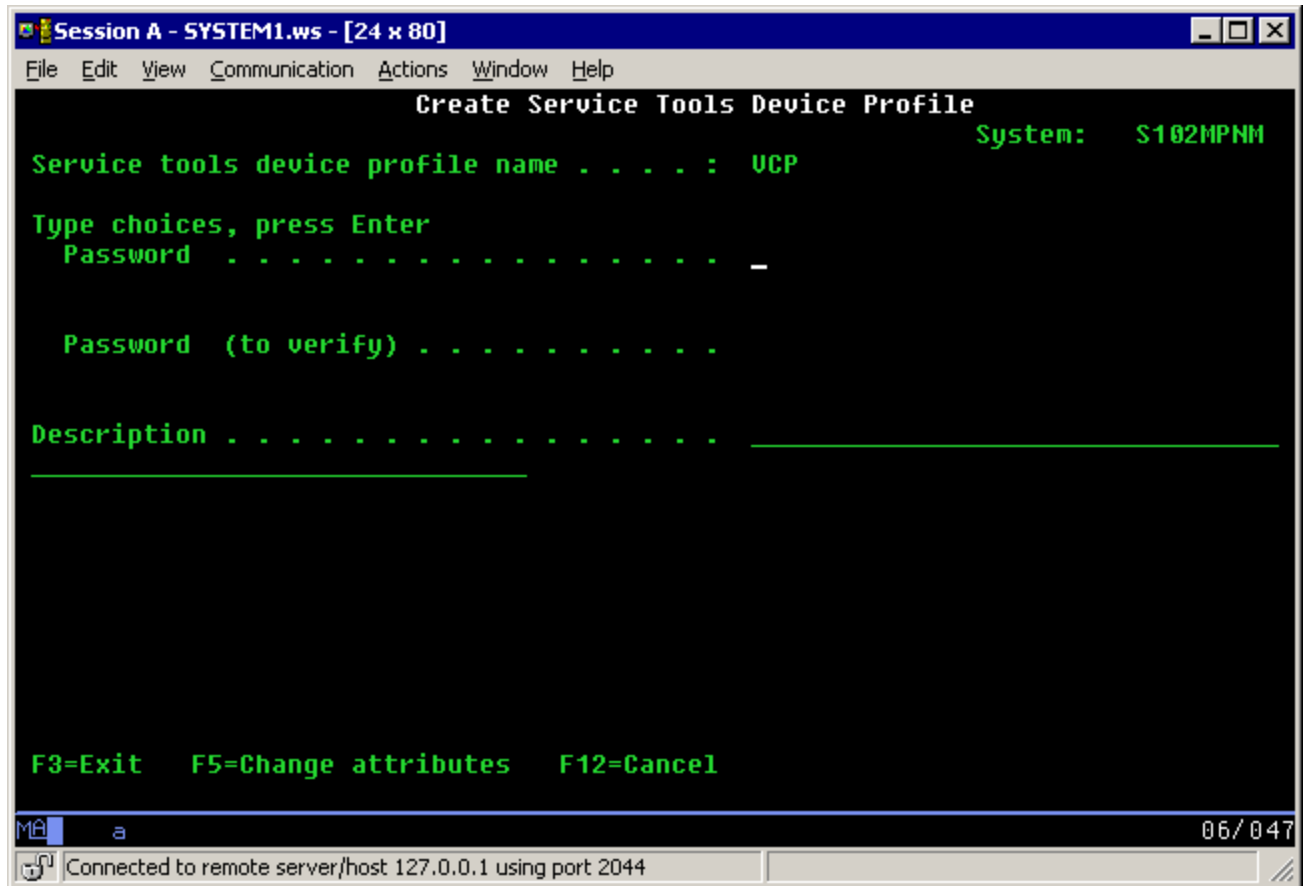
5. Enter a **1** next to the empty **Device Profile** field, then, enter a name to call the VCP, similar to the next example window:


```
Session A - SYSTEM1.ws - [24 x 80]
File Edit View Communication Actions Window Help
Work with Service Tools Device Profiles
System: S102MPNM
Type option, press Enter.
1=Create 2=Reset password 3=Delete
4=Display 5=Enable 6=Disable
7=Change attributes 8=Change description

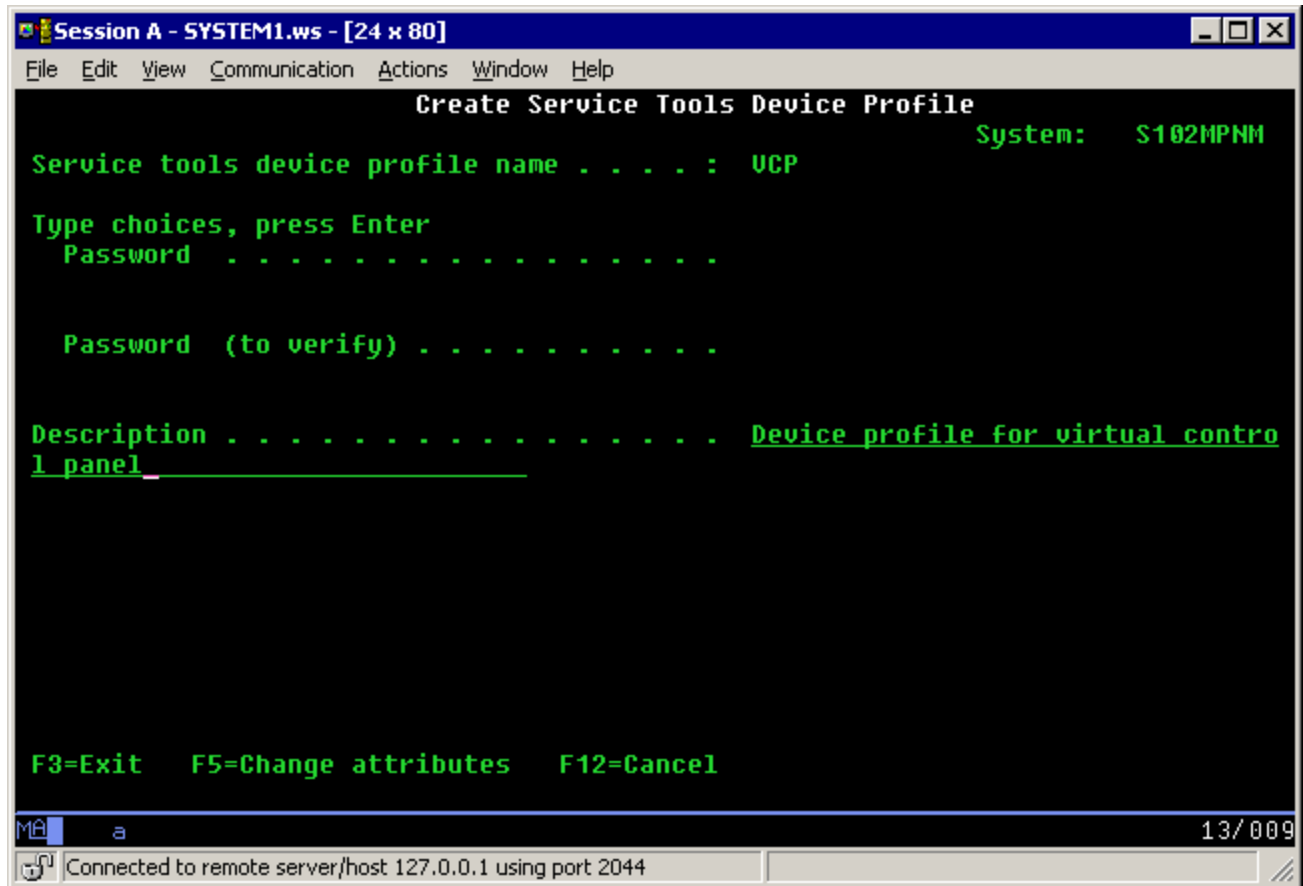
Opt Device Profile Description Status
1 UCP
_ QCONSOLE QCONSOLE Enabled

F3=Exit F5=Refresh F12=Cancel
M& a 10/010
Connected to remote server/host 127.0.0.1 using port 2044
```

6. Press **Enter**. You will get:



7. Enter a password into both password fields. Optionally, enter a description.



8. Press **Enter** and you will be taken back to:

```
Session A - SYSTEM1.ws - [24 x 80]
File Edit View Communication Actions Window Help
Work with Service Tools Device Profiles
System: S102MPNM
Type option, press Enter.
1=Create 2=Reset password 3=Delete
4=Display 5=Enable 6=Disable
7=Change attributes 8=Change description

Opt Device Profile Description Status
- - - - -
- QCONSOLE QCONSOLE Enabled
- VCP DEVICE PROFILE FOR VIRTUAL CONTROL PANEL Enabled

F3=Exit F5=Refresh F12=Cancel
Má a 10/003
Connected to remote server/host 127.0.0.1 using port 2044
```

9. You have now created a device profile for the VCP connection from one PC. You can use **PF3** to go back to the DST main menu.

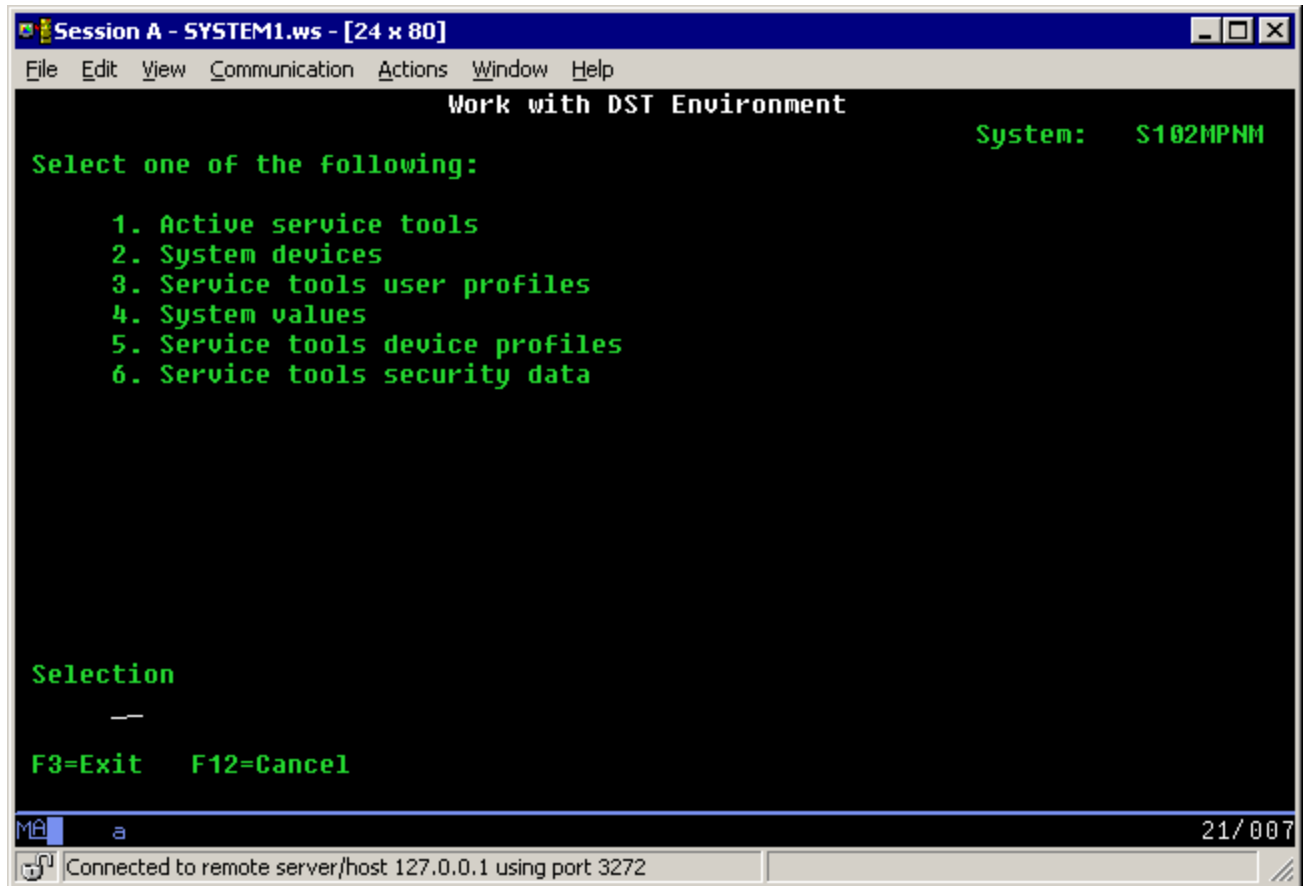
Check user profile for permissions

If you are using a service tools user profile 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 if you are not already there.



2. Select **Work with DST environment**.



3. Select **Service tools user profiles**.

```
Session A - SYSTEM1.ws - [24 x 80]
File Edit View Communication Actions Window Help
Work with Service Tools User Profiles
System: S102MPNM
Type option, press Enter.
1=Create      2=Change password      3=Delete
4=Display     5=Enable                6=Disable
7=Change privileges  8=Change description

Opt  User Profile      Description      Status
--  -
--  QSECOFR           QSECOFR         Enabled
--  QSRU             QSRU            Enabled
7   TESTER          11111111       Enabled
--  11111111         11111111       Enabled
--  22222222         22222222       Enabled

F3=Exit  F5=Refresh  F12=Cancel

Má a 14/003
Connected to remote server/host 127.0.0.1 using port 3272
```

4. Move the cursor to the user you want to verify or set the privileges for and place a **7** on the same line, followed by **Enter**.

```

Session A - SYSTEM1.ws - [24 x 80]
File Edit View Communication Actions Window Help
Change Service Tools User Privileges
System: S102MPNM
Service tools user profile name . . . . . : TESTER
Type option, press Enter.
1=Revoke 2=Grant

Option  Functions                                     Status
-      -
None                                       Revoked
-      -
Disk units - operations                   Granted
-      -
Disk units - administration               Granted
-      -
System partitions - operations            Granted
-      -
System partitions - administration        Granted
-      -
Partition remote panel key XXXXXXXX 000   Granted
-      -
Partition remote panel key XXXXXXXX 001   Granted
-      -
Partition remote panel key XXXXXXXX 002   Revoked
-      -
Partition remote panel key XXXXXXXX 003   Revoked
-      -
Partition remote panel key XXXXXXXX 004   Revoked
-      -
Partition remote panel key XXXXXXXX 005   Revoked
-      -
Partition remote panel key XXXXXXXX 006   Revoked
-      -
Partition remote panel key XXXXXXXX 007   Revoked
More . . .

F3=Exit  F5=Reset  F9=Defaults  F12=Cancel

```

- Since the VCP is only being used for independent systems (non-LPAR environment) or the primary partition, you only have to verify or set the privilege for the **Partition remote panel key XXXXXXXX 000** entry. The example above shows that entry as **Granted** for user **TESTER**. Place a 2 on the line for partition **000**, followed by **Enter** to grant permission to the mode functions.

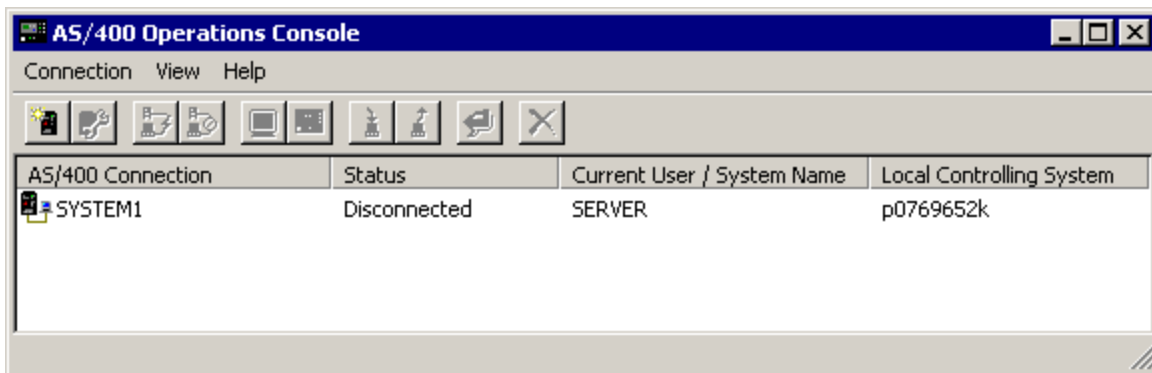
Note: Systems with a keystick require the keystick inserted before the user is eligible to use the mode button. For example, the user has the remote panel key privilege but won't have the mode function available until the keystick is present. For systems without the keystick only the user profile remote panel key privilege is necessary.

- You can now exit back to the DST main menu. Additionally, you can exit DST or IPL depending on how you entered DST.

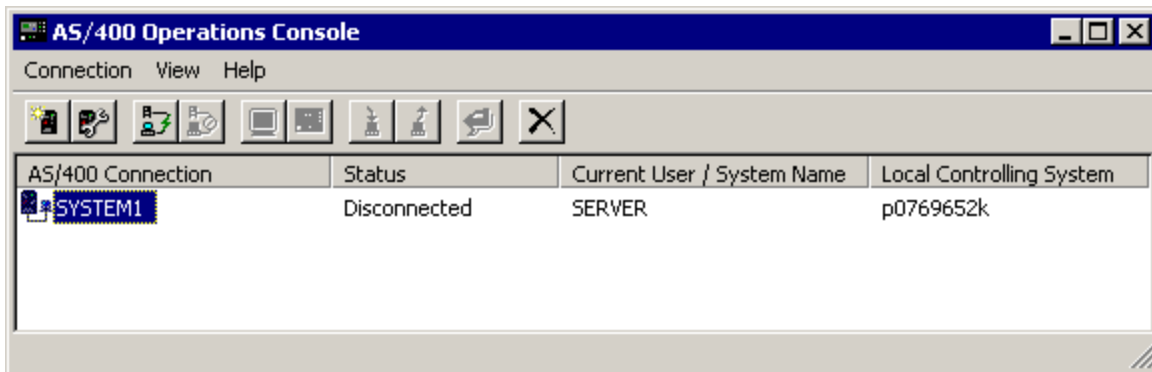
Change current configuration to console only

If you're current Operations Console connection configuration 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 "Create new configuration for Virtual Control Panel."

1. To remove the remote control panel from the configuration the connection status must be **Disconnected**. To disconnect the configuration, follow these steps:
 - a. If your local controlling system (LCS), or local console, is running in unattended mode and you have not requested control, do the following to get iSeries control:
 - 1) Select the configuration name (under **AS/400 Connection**). This is the name that Operations Console uses to refer to a specific iSeries server.
 - 2) From the **Connection** menu, click **Request Control**.
 - b. If the **Service Device Sign-on** window appears, click **Cancel**.
 - c. Select the configuration name (under **AS/400 Connection**). This is the name that Operations Console uses to refer to a specific iSeries server.
 - d. From the **Connection** menu, click **Disconnect**. The connection status shows **Disconnecting** until it completes with a status of **Disconnected**.

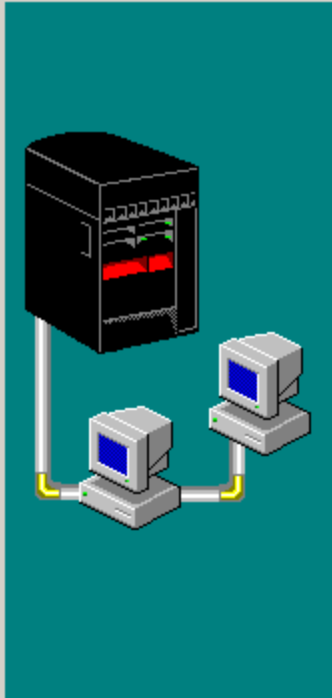


2. Select the configuration name that you want to change.



3. From the **Connection** menu, click **Configure Connection**. The values for the current configuration are going to be presented to you.

Configure AS/400 Operations Console Connection - SYSTEM1



Welcome to Operations Console

To successfully setup and configure the hardware and software, following the instructions in Operations Console Setup, SC41-5508, is highly recommended.

For the latest Operations Console information see the Client Access Express home page at:
www.as400.ibm.com/clientaccess

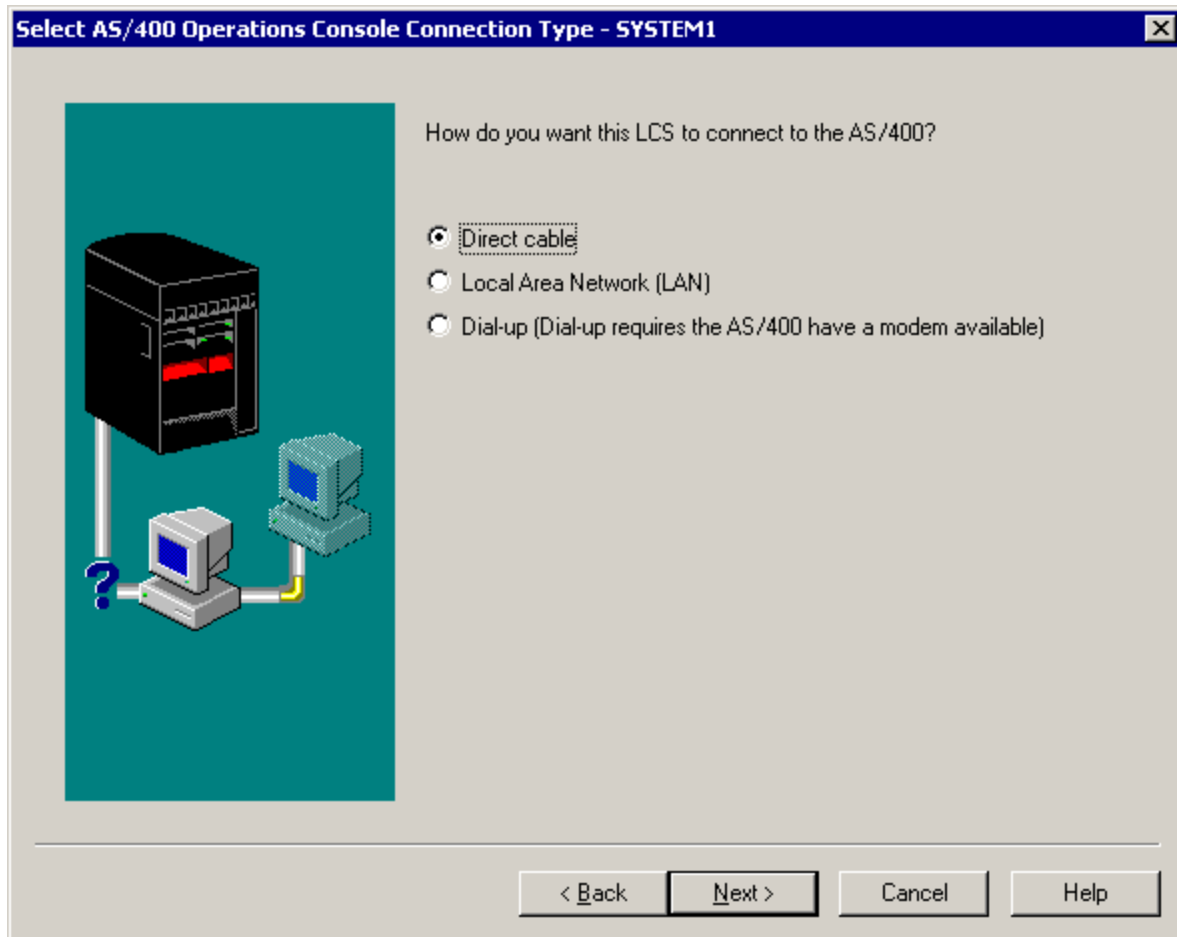
< Back

Next >

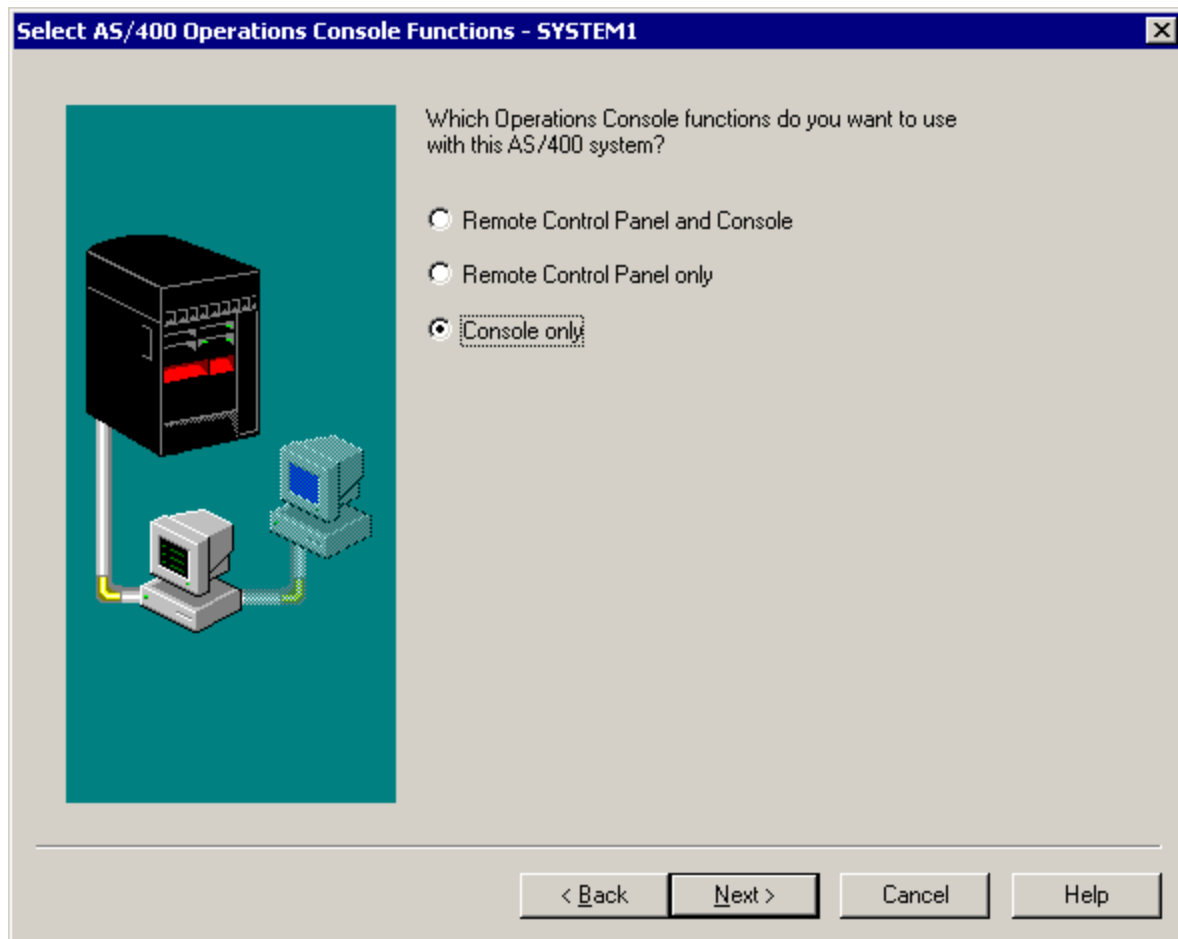
Cancel

Help

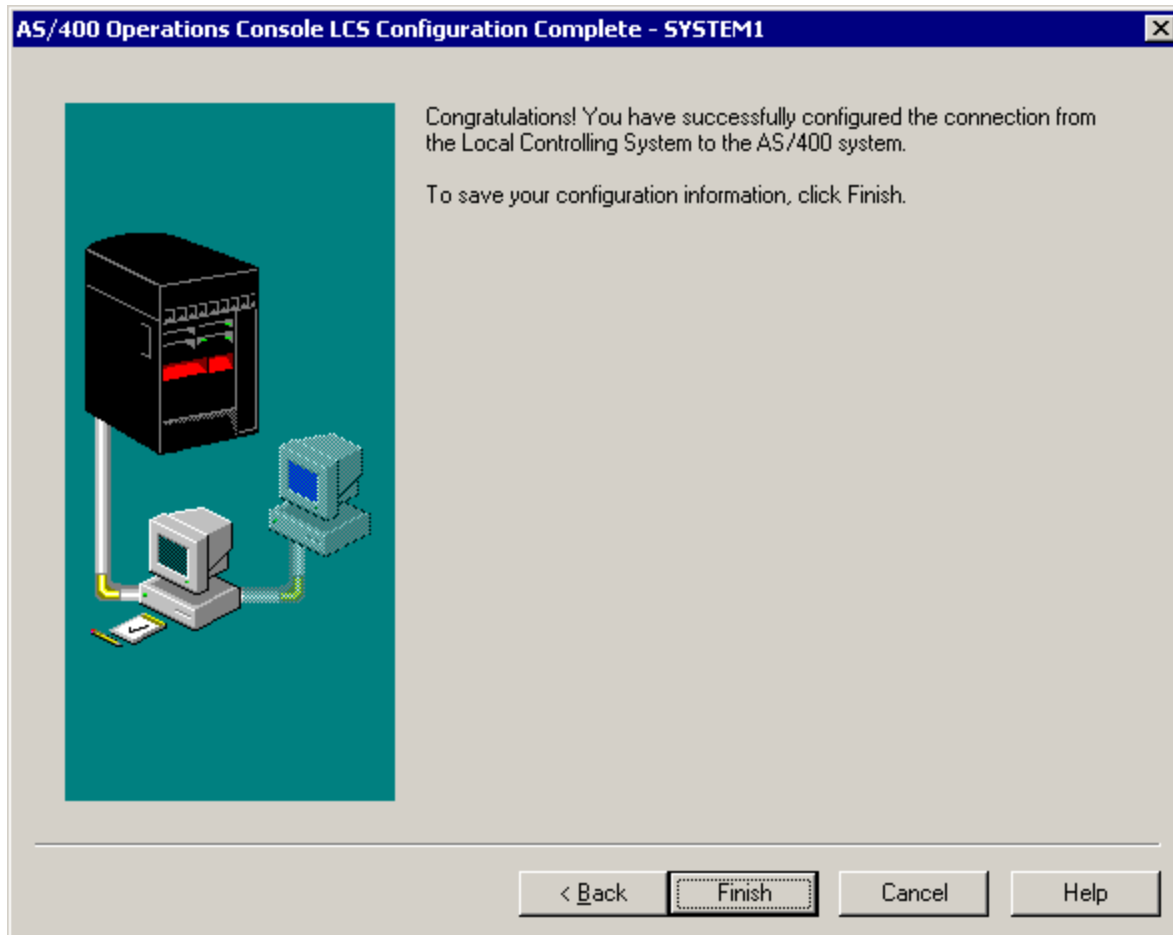
4. Click **Next**.



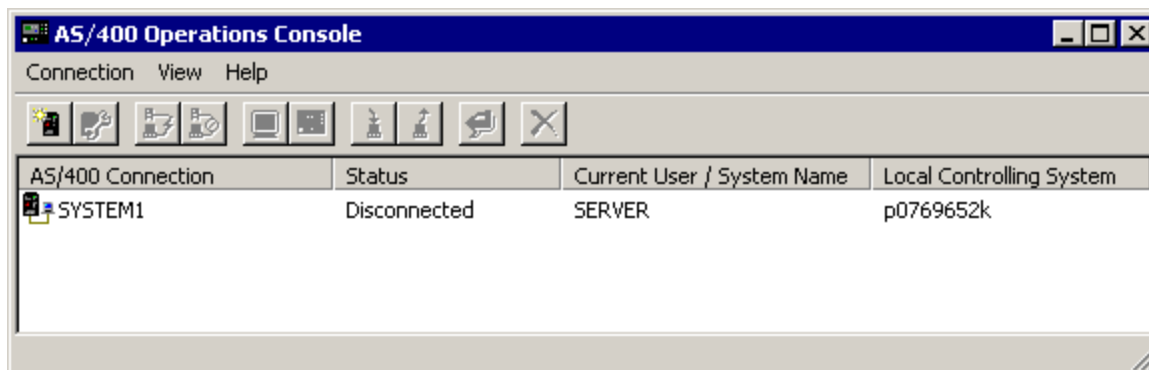
5. Click **Next**.



6. Select **Console only**.
7. Continue clicking **Next** without changing any other values until you arrive at the **Configuration Complete** window.



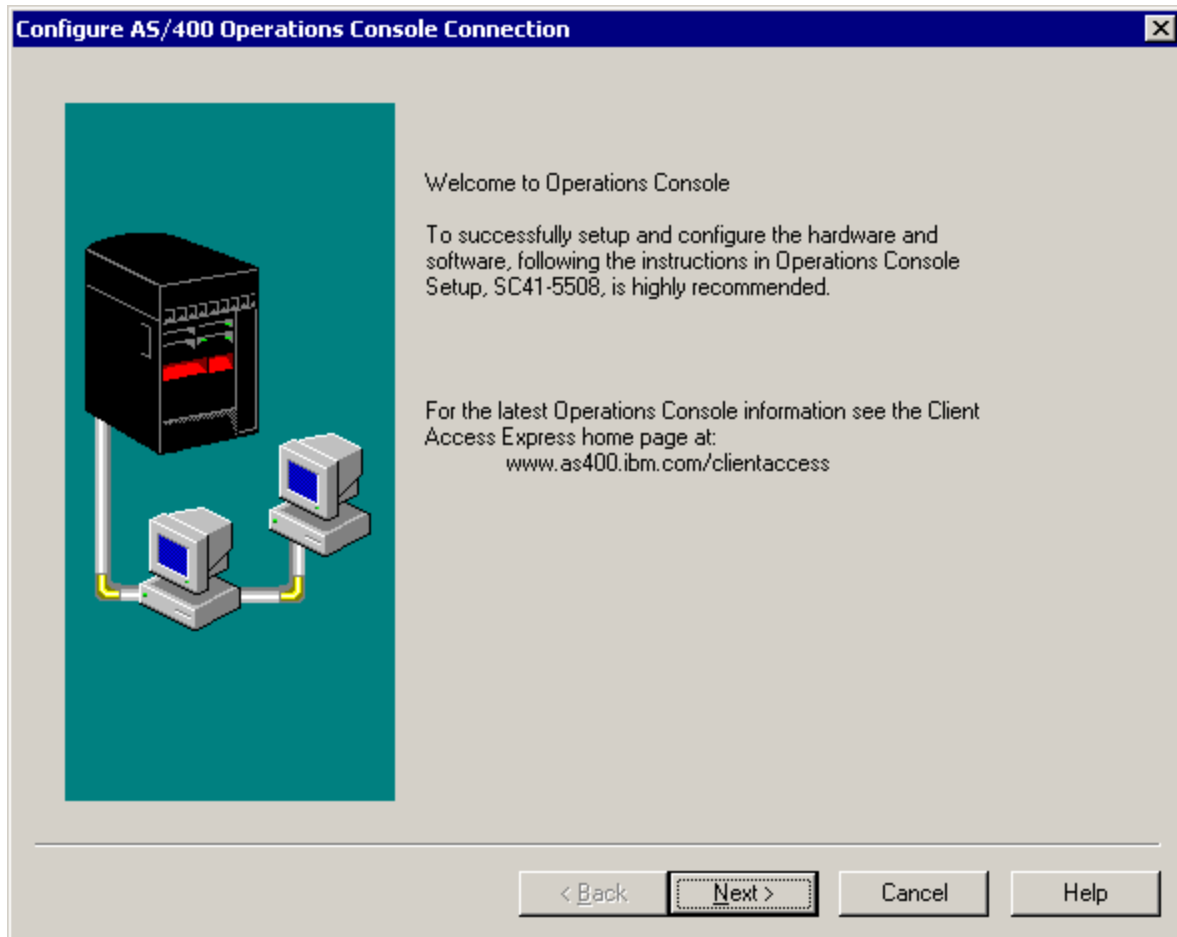
8. Click **Finish** to complete the configuration and save the change.



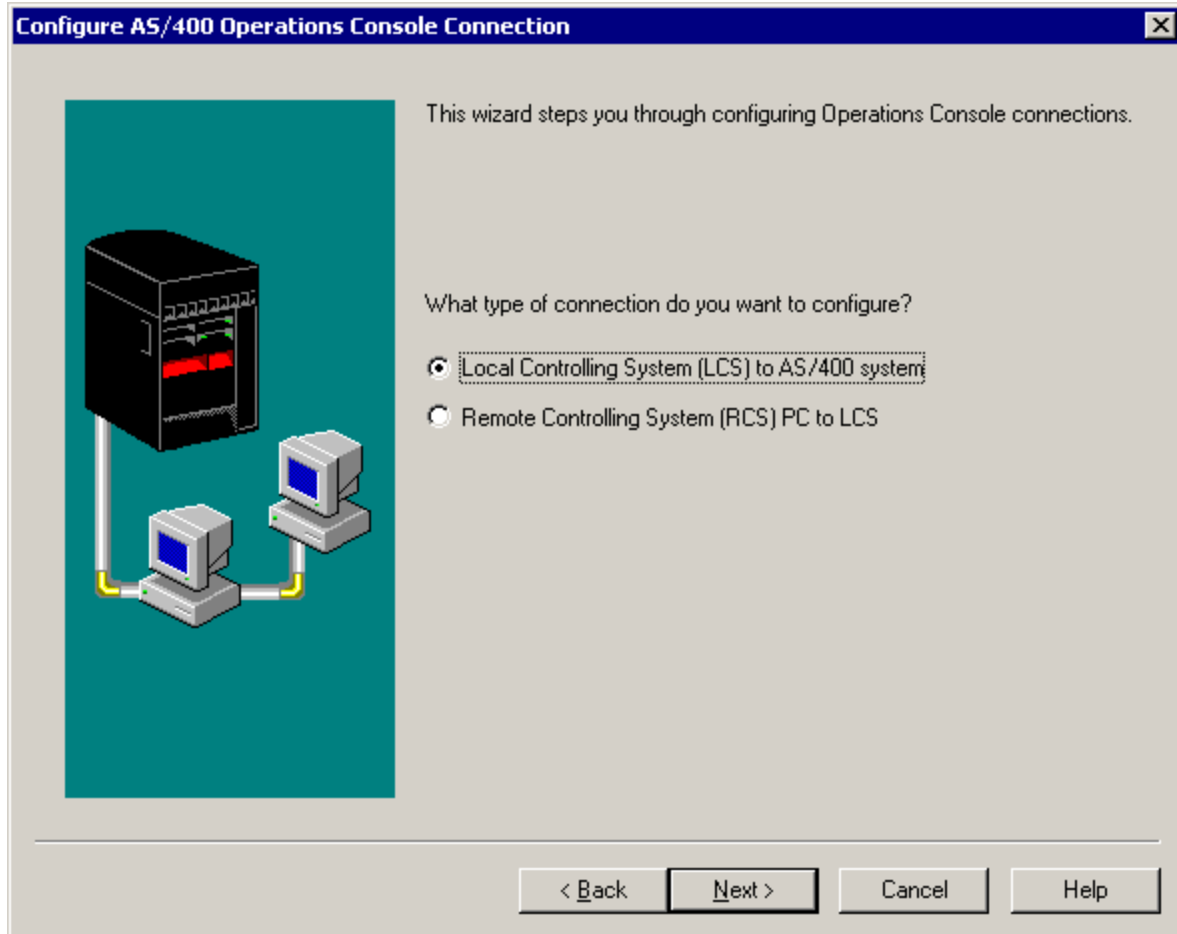
Create new configuration for Virtual Control Panel

Use the following instructions to create a new connection configuration specifically for the virtual control panel.

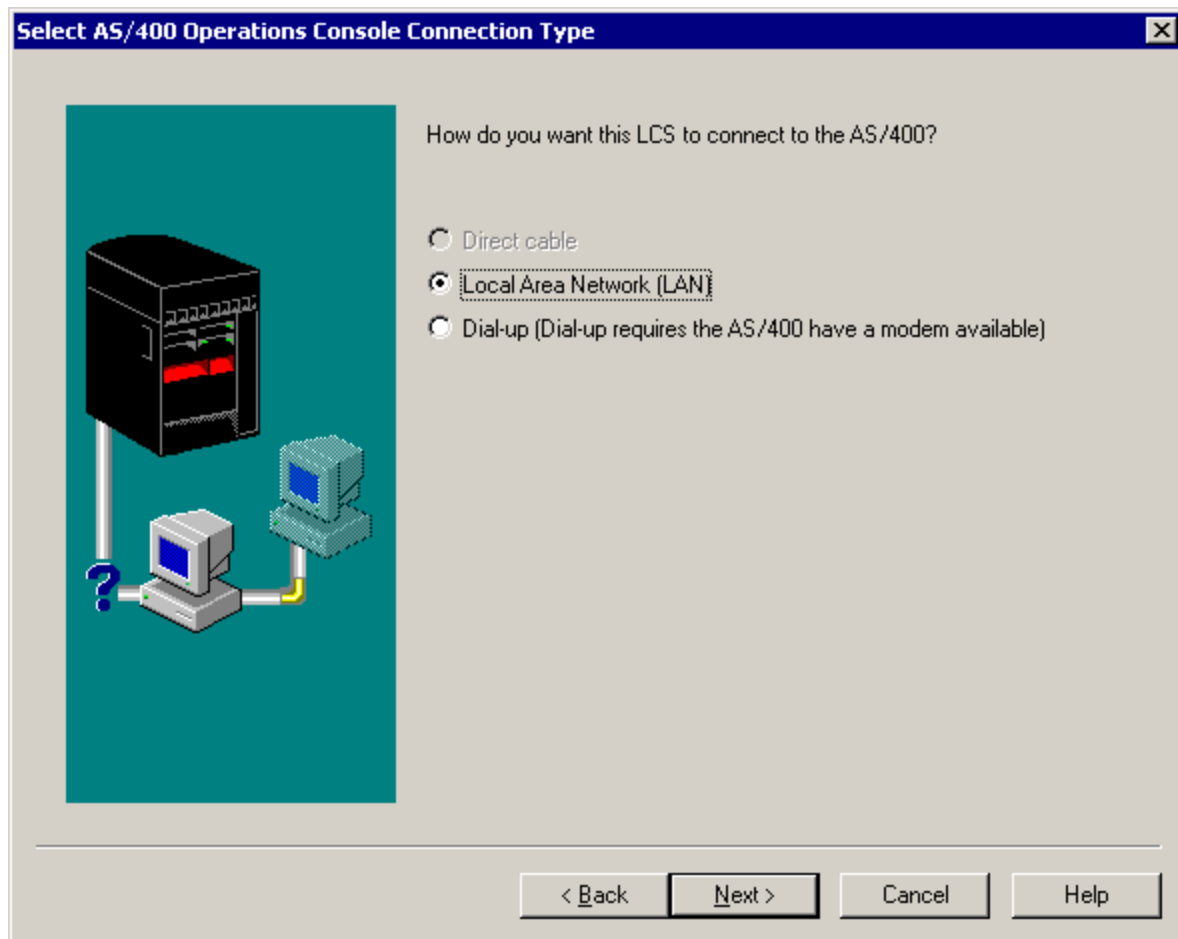
1. From the **Connection** menu, click **New Connection**.



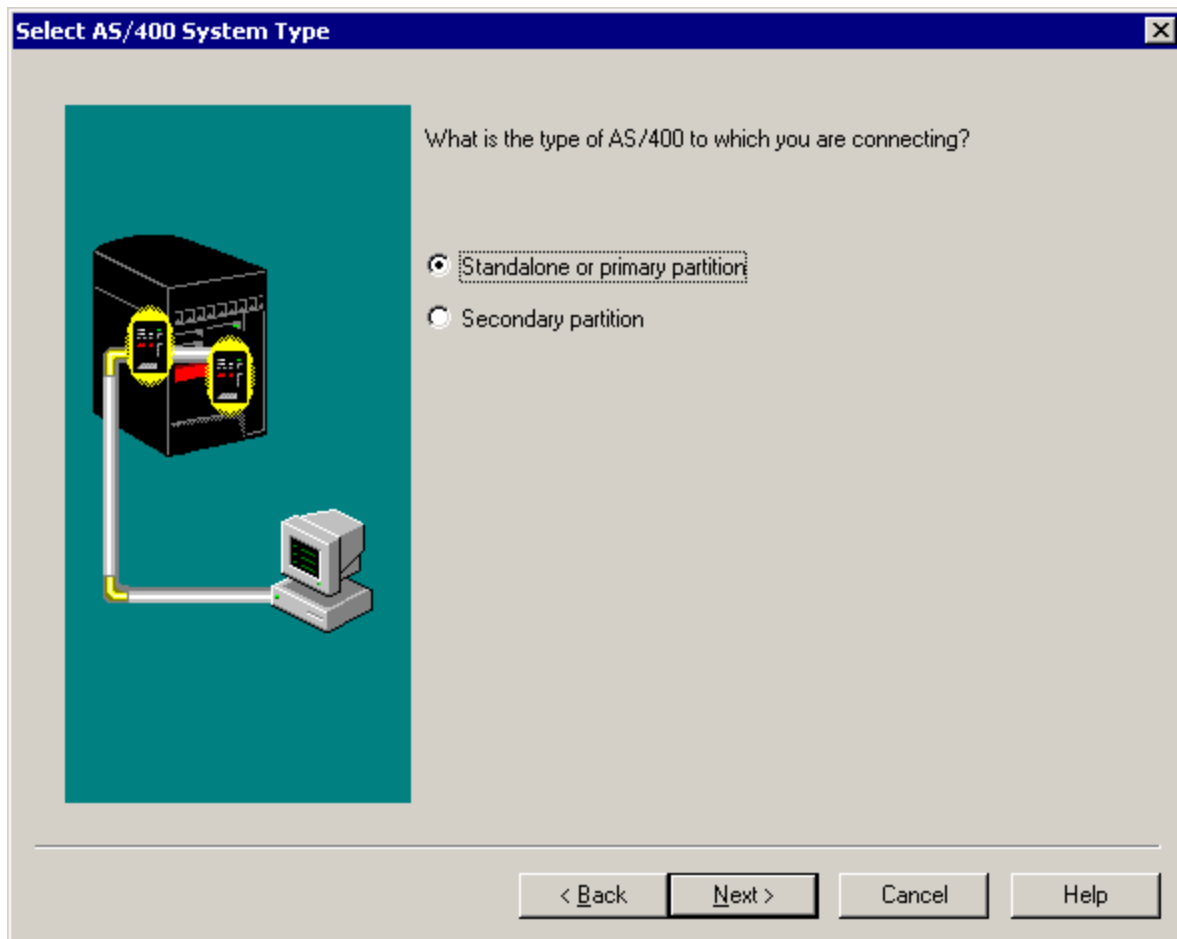
2. Click **Next**.



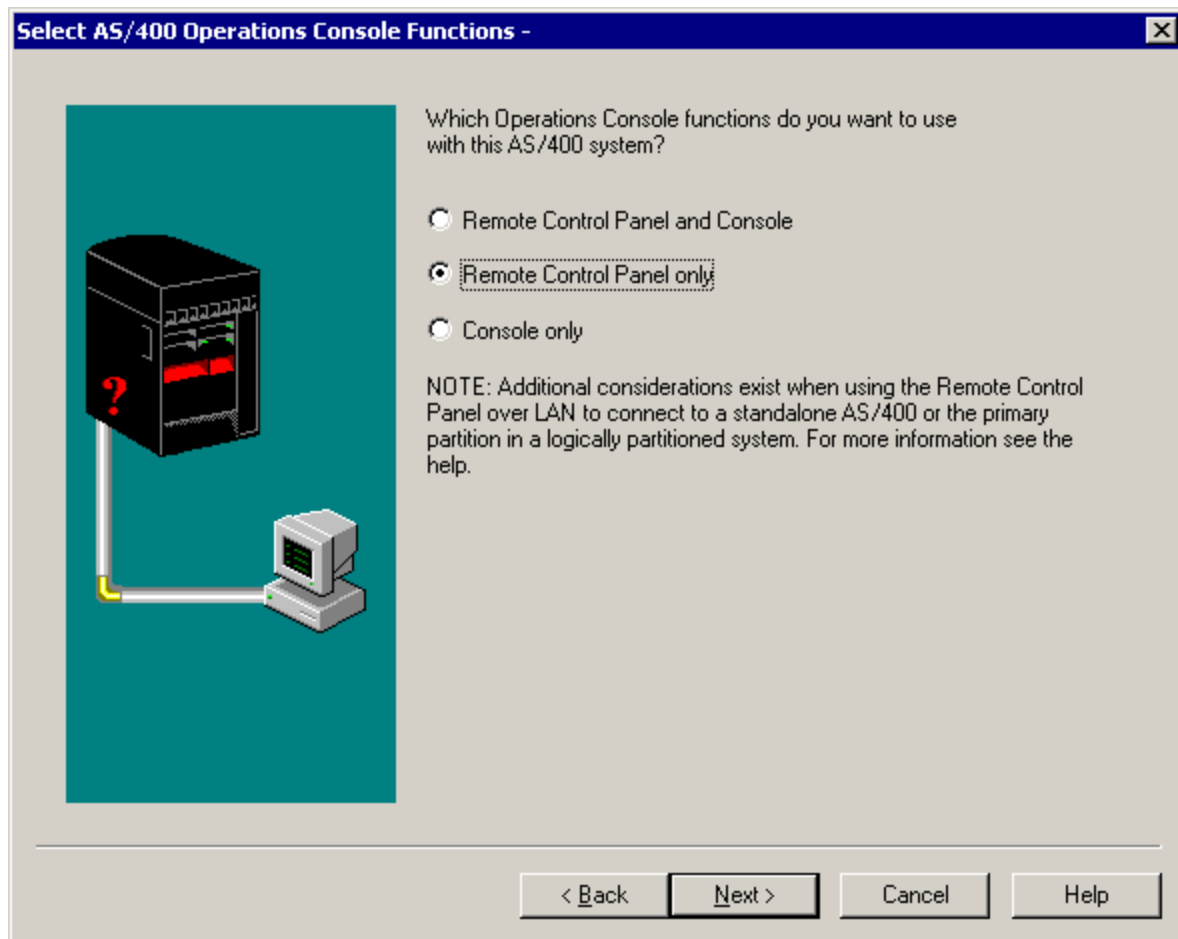
3. Click **Next**.



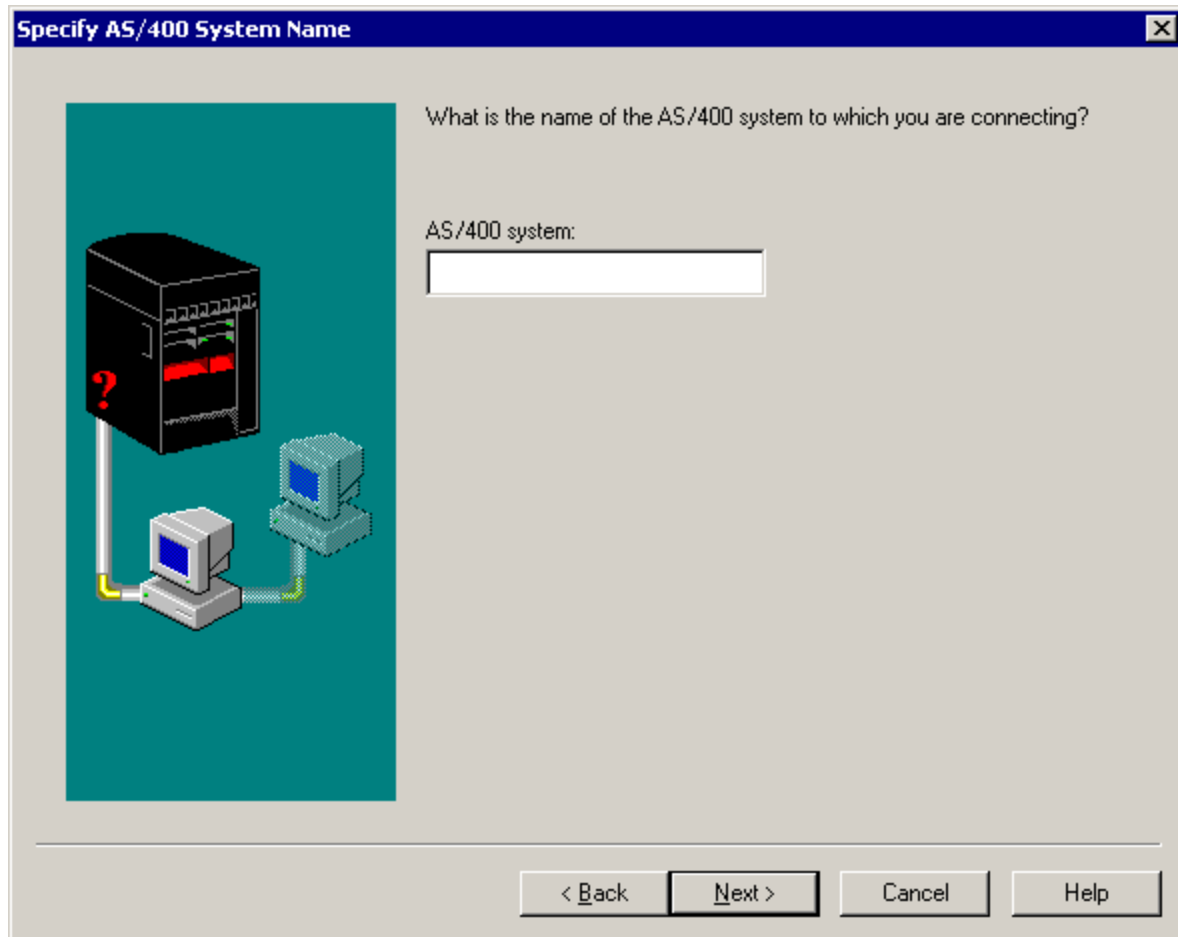
4. Leave the option **Local Area Network (LAN)** selected and click **Next**.



5. Click **Next**.

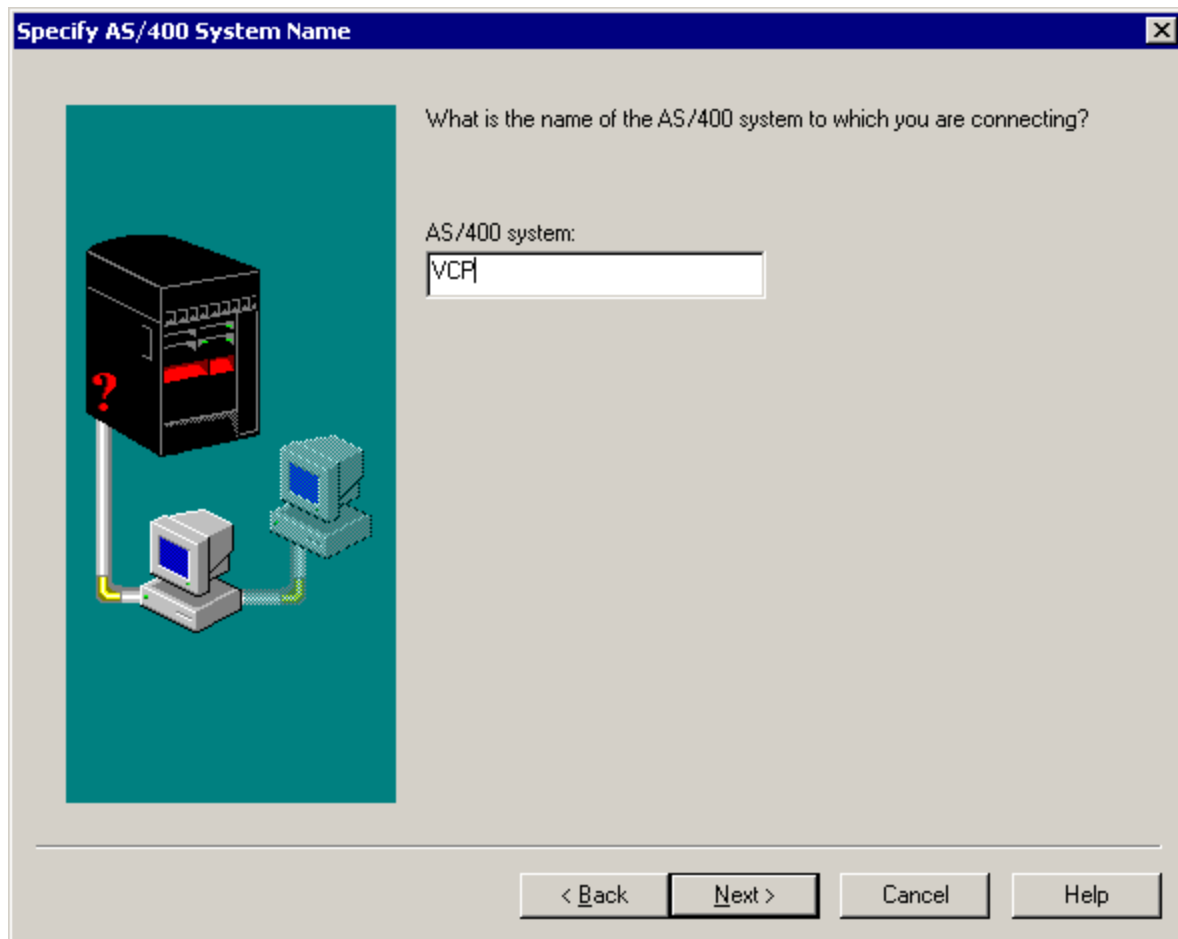


6. Select **Remote Control Panel only**, then click **Next**.

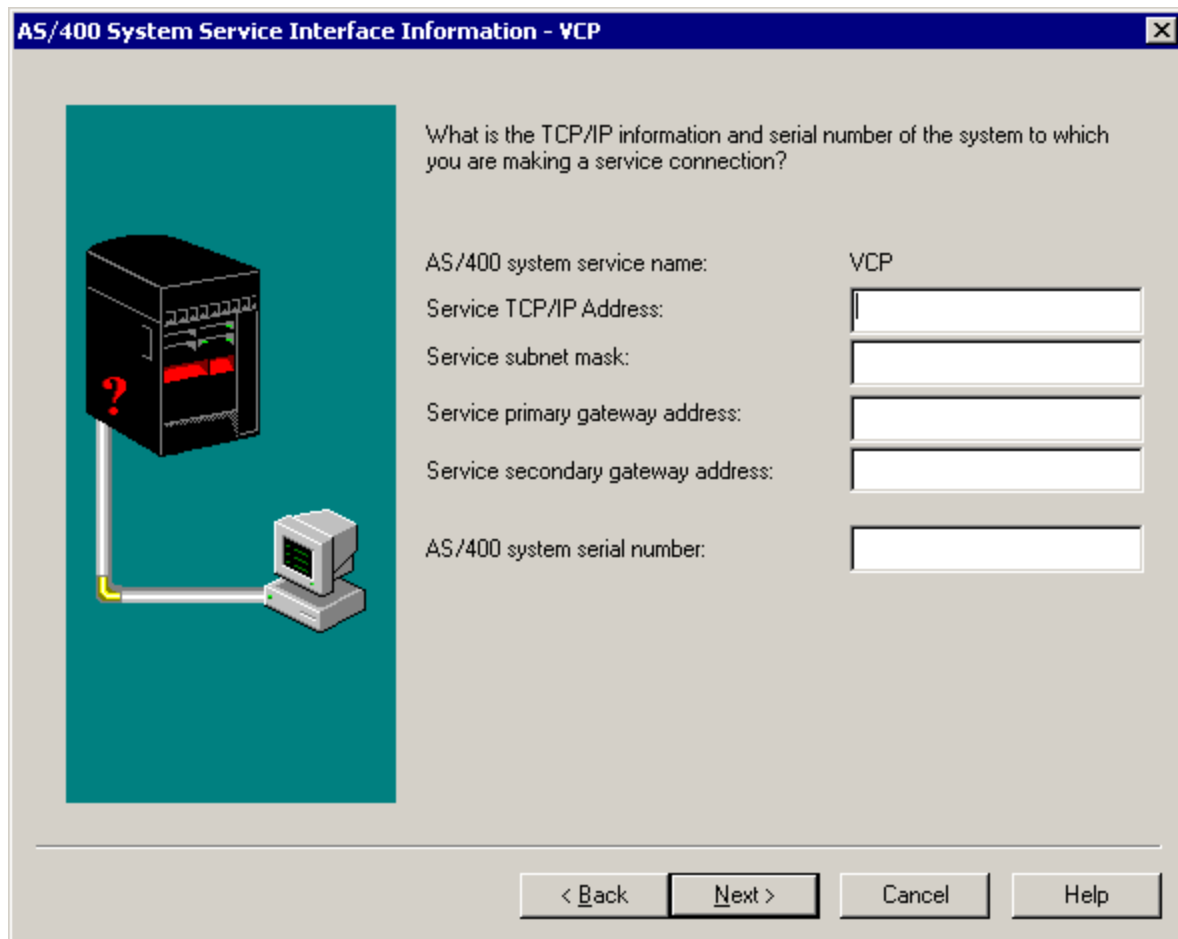


7. Enter a name to refer to your VCP connection.

Note: If the PC you are working with is connected to a network, do not use a name that can be found on that network.

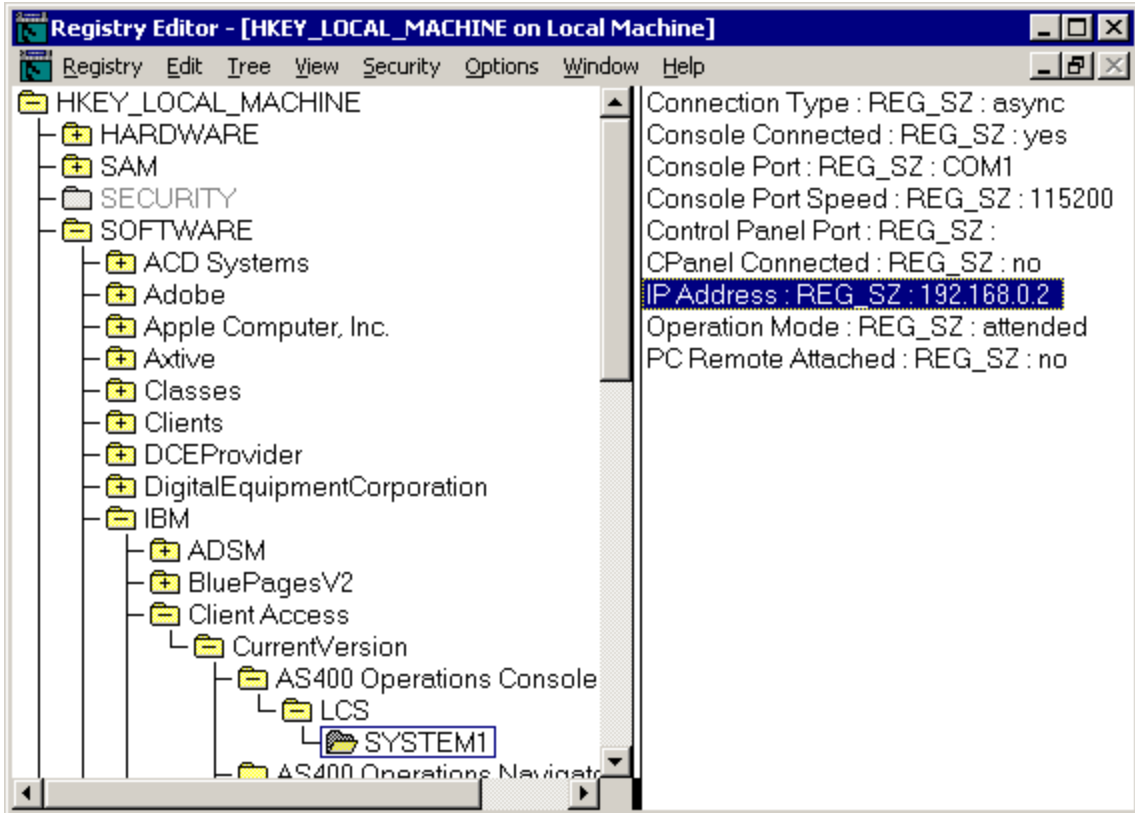


8. Click **Next**.



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

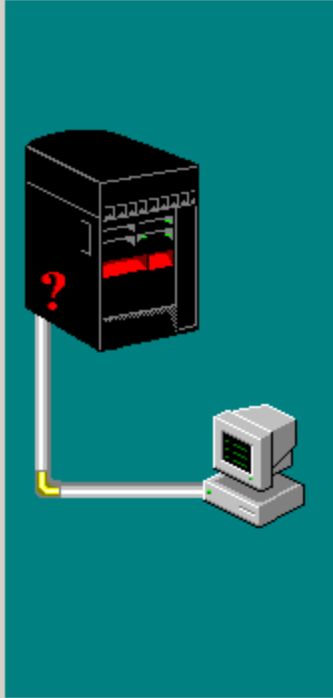
Note: In some cases, the address **192.168.0.n** may have been previously used for something other than Operations Console. In those cases the user may have had to use a different base address for Operations Console such as **192.168.1.n** use the value of **192.168.1.2**. If so, use the base address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



Use the IP address reported on your PC for the VCP address.

AS/400 System Service Interface Information - VCP [X]

What is the TCP/IP information and serial number of the system to which you are making a service connection?



AS/400 system service name: VCP

Service TCP/IP Address: 192.168.0.2

Service subnet mask:

Service primary gateway address:

Service secondary gateway address:

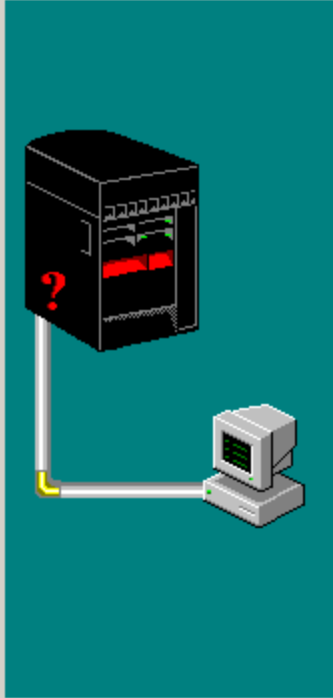
AS/400 system serial number:

< Back Next > Cancel Help

10. Enter the **AS/400 system serial number**. This does **not** have to be the real system serial number, however.

AS/400 System Service Interface Information - VCP [X]

What is the TCP/IP information and serial number of the system to which you are making a service connection?



AS/400 system service name: VCP

Service TCP/IP Address: 192.168.0.2

Service subnet mask:

Service primary gateway address:

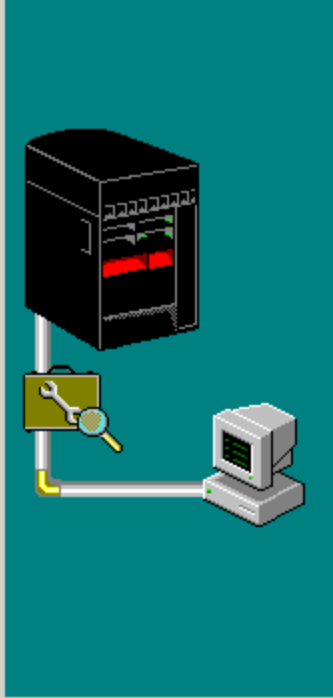
Service secondary gateway address:

AS/400 system serial number: 10-12345

< Back Next > Cancel Help

11. Click **Next**.

AS/400 Operations Console Service Tools Device Information - VCP



To safely use AS/400 service functions with a LAN connection you must specify the following information. This protects access to AS/400 service functions such as the console and remote control panel. For more information see the help.

AS/400 system service name: VCP

Service tools device profile information

Service tools device profile for this PC:

Password:

Confirm password:

Note: This must exactly match what you specify on the AS/400.

Service tools device profile information password

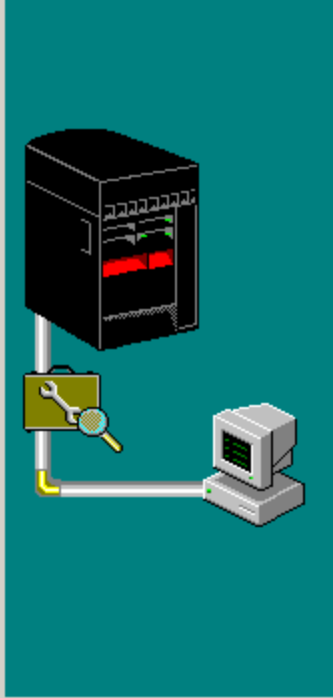
Password to access the service tools device profile information:

Confirm password:

< Back Next > Cancel Help

- Enter the name of the device profile you will be using for the VCP connection authentication. By default, as explained above, you can use **QCONSOLE** if it hasn't been used. Otherwise, if you created a specific device profile, enter the name and password you assigned to it during the creation process.

AS/400 Operations Console Service Tools Device Information - VCP



To safely use AS/400 service functions with a LAN connection you must specify the following information. This protects access to AS/400 service functions such as the console and remote control panel. For more information see the help.

AS/400 system service name: VCP

Service tools device profile information

Service tools device profile for this PC: VCP

Password:

Confirm password:

Note: This must exactly match what you specify on the AS/400.

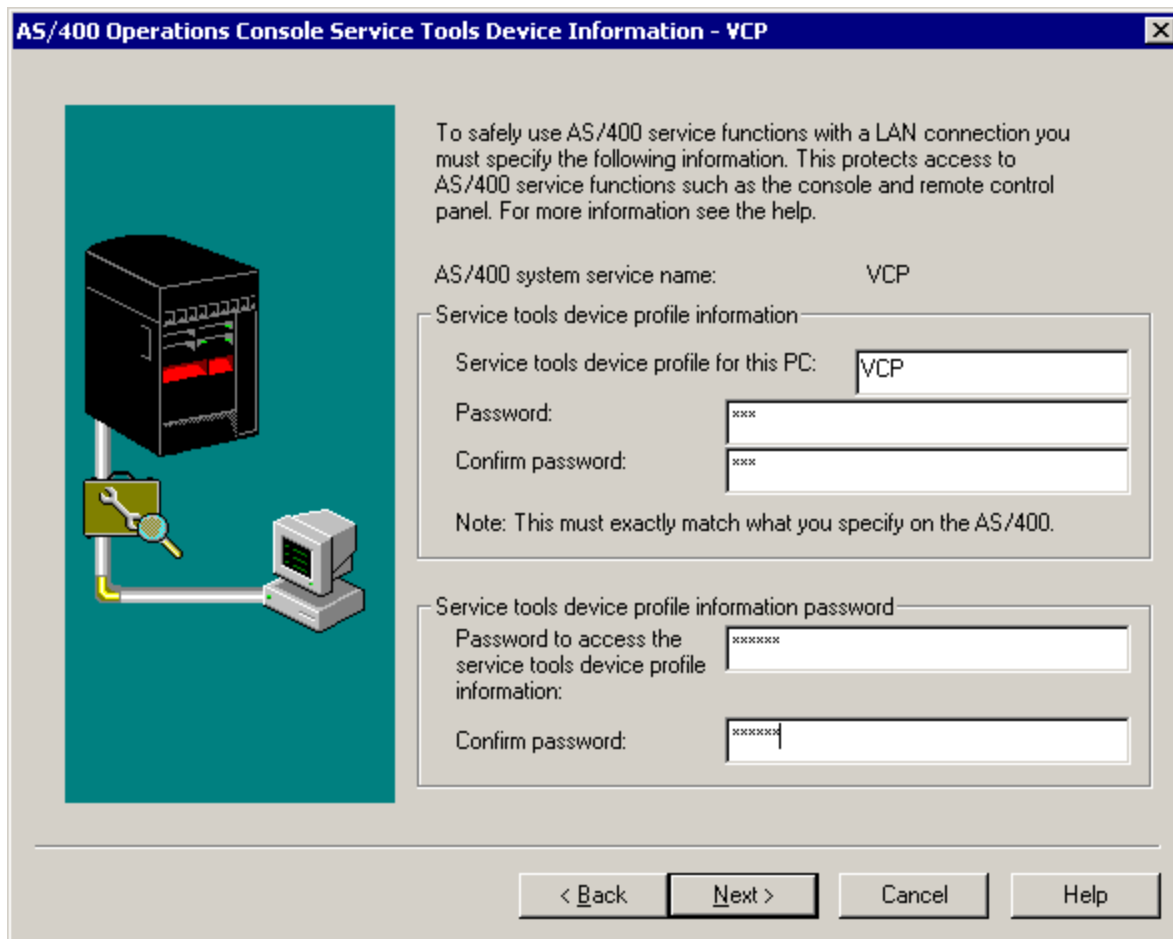
Service tools device profile information password

Password to access the service tools device profile information:

Confirm password:

< Back Next > Cancel Help

13. In the remaining 2 fields is where you assign a password to be used during the connection process to authenticate the VCP connection. This password is only used by the PC being used for the VCP connection and is not known at the server. Enter a password and a second time to confirm it.



Example:

VCP was used as the name of the device profile and **VCP** as the password. The password of **access** will be used, for this example, as the password to be used for authentication. Therefore, I entered:

VCP

VCP

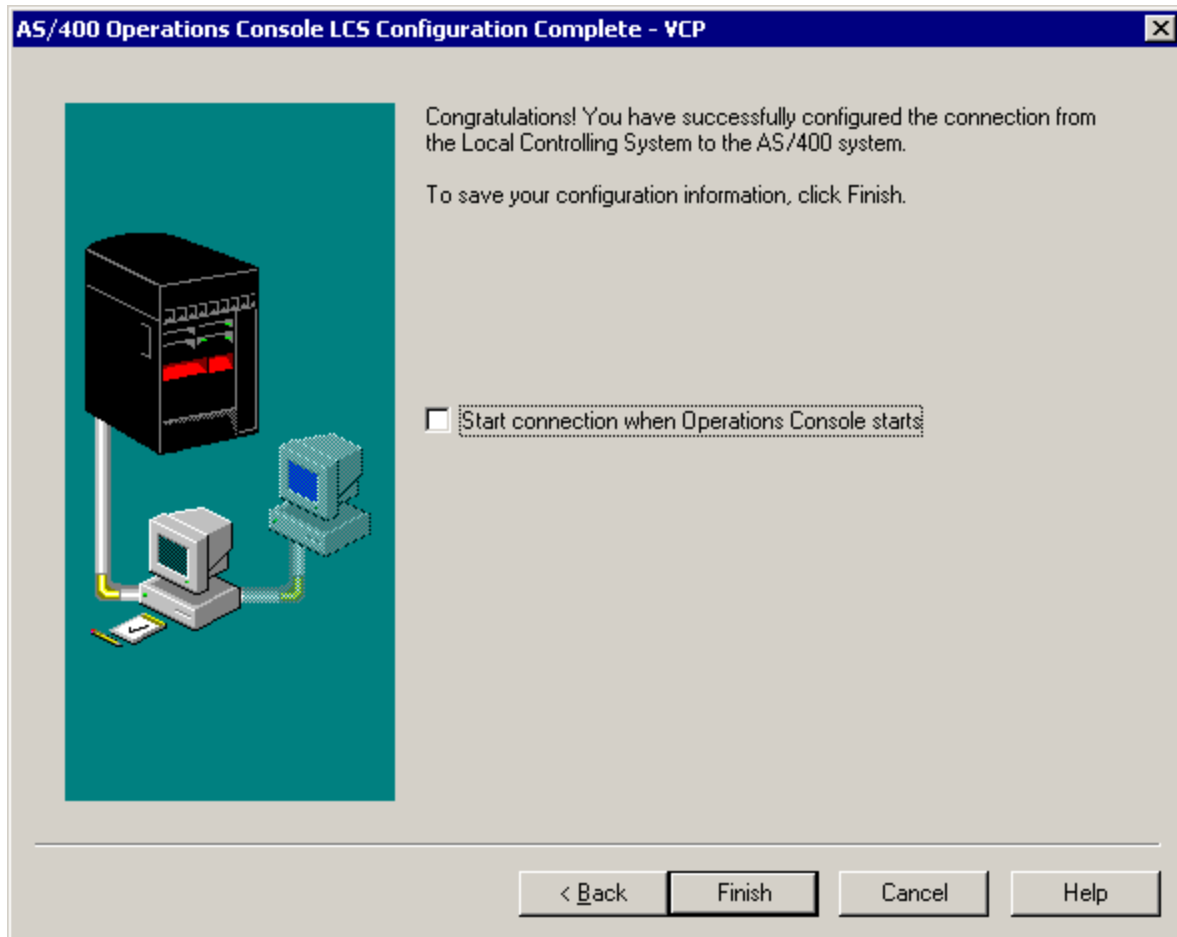
VCP

access <-----

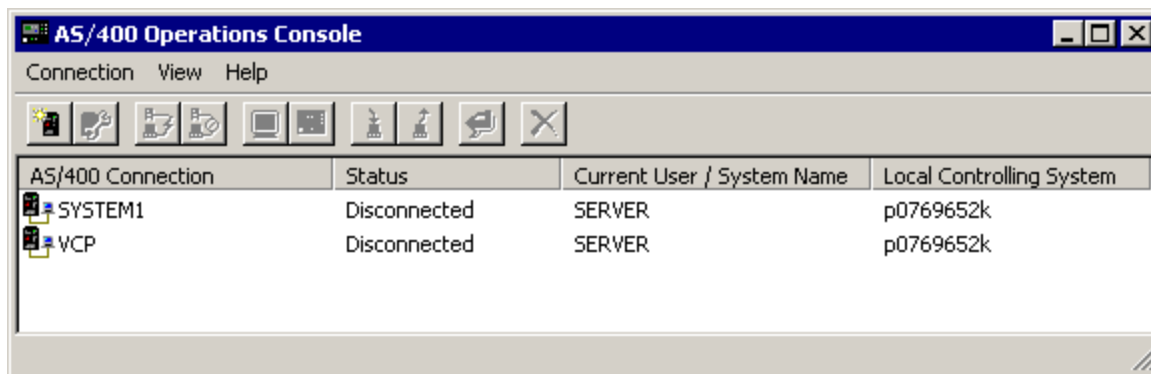
access <----- **Remember this password!**

The password of **access** is what you need to remember. It will be used when we connect later.

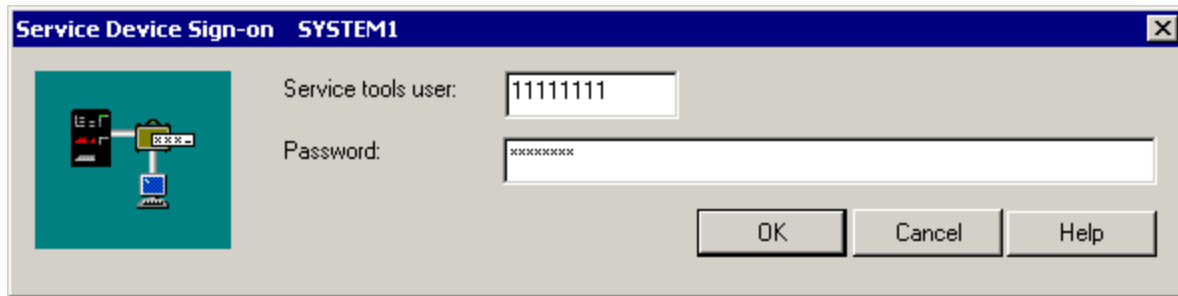
14. Now, click **Next**.



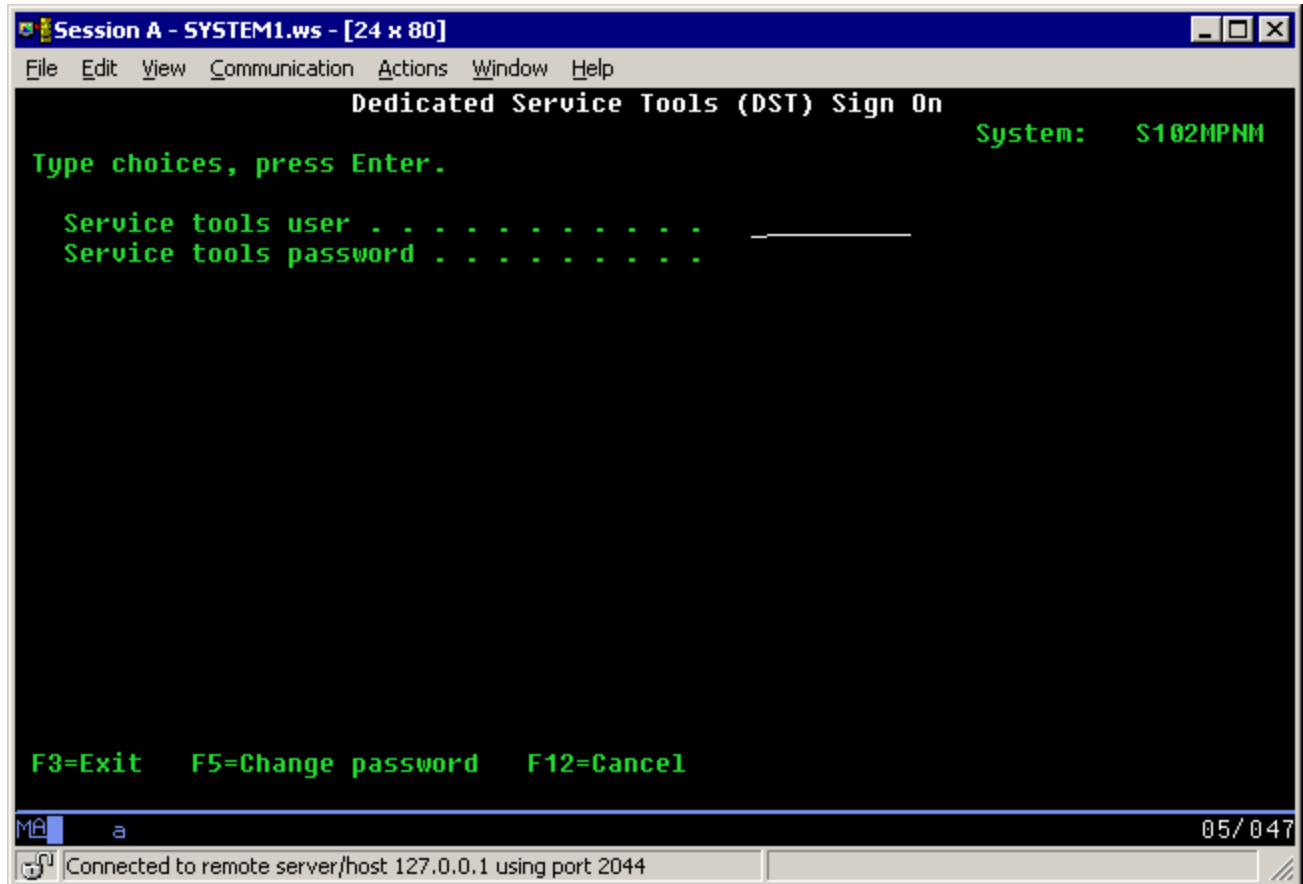
- Initially, leave the option **Start connection when Operations Console starts** unchecked. This allows more control to debug a problem if one is encountered. When you feel comfortable that there are no issues you can go back through the configuration wizard and turn this option on. Click **Finish**.



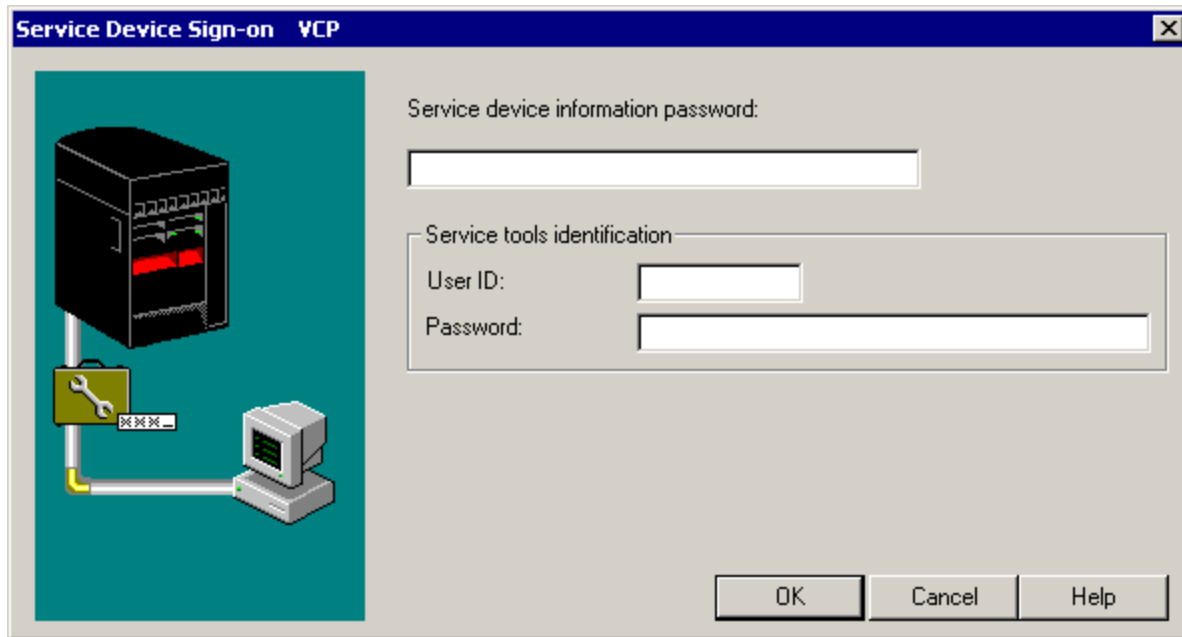
You have now completed the configuration for the VCP connection. Start a connection for the console (your original connection).



Sign on normally, if necessary, then, wait for the console window to appear.

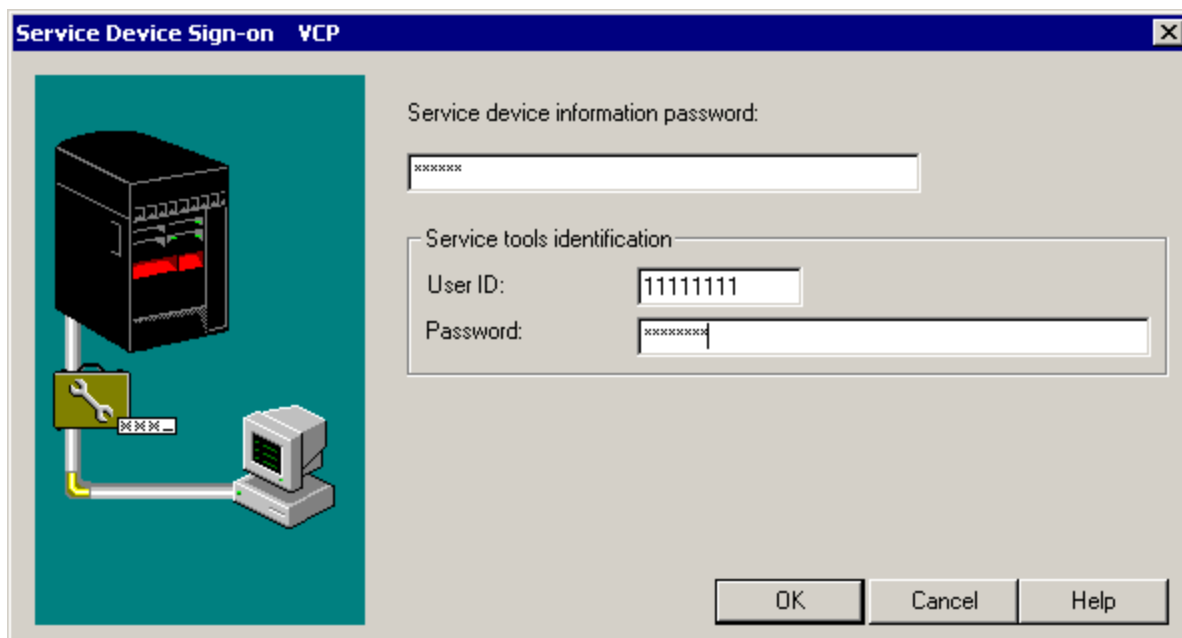


Now you can connect the VCP connection.



You will get the **Service Device Sign-on** window with an extra field. The **Service device information password** you chose for use when authenticating. If you remember the example used earlier, the password I chose was **access**. Enter the password you used in the 4th and 5th fields of the **Service Tools Device Information** window.

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



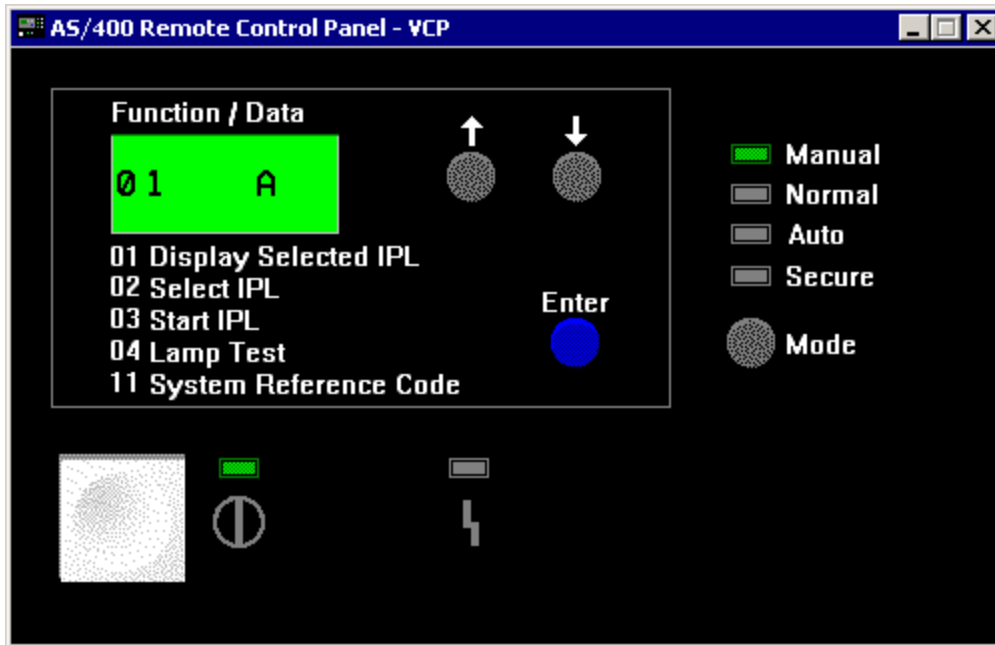
In this example, the following was entered:

access

11111111

11111111

Now, click **OK**.



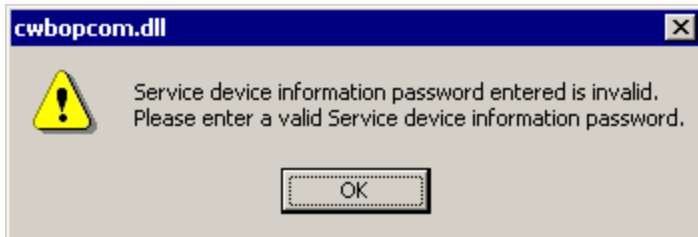
If everything went correctly, you will be rewarded with the virtual control panel, as shown above. This is the exact same graphics that you would have gotten if you were to have used a cable to connect to the remote control panel. The only difference would be function.

Potential Problems

The following items are possible problems and how to correct them.

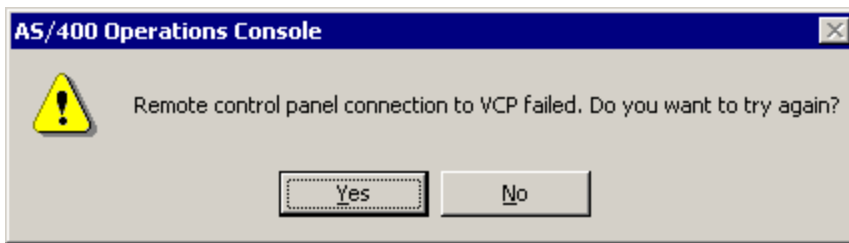
Authentication errors

Something that could happen is a failure to authenticate.



This message typically means that the access password you entered (the first of the 3 fields) is incorrect. In the example above it was **access**. 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 may used.

Another authentication problem is a failure to connect the VCP.



This is an indication that the Service Tools Device Profile Information password is not correct:

VCP

VCP <---

VCP <---

access

access

If this is the case, then the Service Tools Device Profile Information password stored on the PC no longer matches the value stored on the server. Each time you authenticate successfully this password is re-encrypted to a new value and stored on both sides of the connection. In rare cases this password gets out of synchronization and you will need to reset the value back to the original default values on both the PC and the server. For detailed instructions on how to do this refer to **Appendix C. Resynchronizing the PC and iSeries device profile password** in the "Operations Console Setup - SC41-5508-02" which you can get at:

<http://publib.boulder.ibm.com/pubs/html/as400/v5r1/ic2924/books/c4155082.pdf>