

AS/400e



Getting Started with Integrated Netfinity[®] Server

Version 4

AS/400e



Getting Started with Integrated Netfinity[®] Server

Version 4

Note

Before using this information and the product it supports, be sure to read the general information under "Notices" on page 33.

Second Edition (May 2000)

This edition applies to the licensed programs IBM Operating System/400 (Program 5769-SS1), Version 4 Release 5 Modification 0; and to Integration Services for FSIOF (Program 5769-SA2). This edition replaces SC41-5123-00. This edition applies only to reduced instruction set computer (RISC) systems.

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About Getting Started with Integrated Netfinity Server (SC41-5123)

This book includes information about these topics:

- Integrated Netfinity Server hardware
- Installing the product Integration Services for FSIOP on an Integrated Netfinity Server
- Configuring an Integrated Netfinity Server as a LAN adapter
- Products no longer supported on an Integrated Netfinity Server for V4R5 and later releases
- Where to find information about installing and running AS/400 Integration for Windows Server and IBM Firewall for AS/400 on an Integrated Netfinity Server.

This book has been renamed from *Integration Services for the Integrated PC Server*.

Integration Services for FSIOP is a licensed program that provides OS/400 support that enables you to use your Integrated Netfinity Server for AS/400 as an Ethernet or token-ring LAN adapter. Integration Services for FSIOP also enables you to load IBM Firewall for AS/400 on the Integrated Netfinity Server. You do not need Integration Services for FSIOP to run AS/400 Integration for Windows Server on your Integrated Netfinity Server.

Note: Version 4, Release 5 of OS/400 no longer supports these products on an Integrated Netfinity Server:

- Novell Netware
- Warp Server
- Lotus Notes

If you plan to load IBM Firewall for AS/400 or AS/400 Integration for Windows Server on the Integrated Netfinity Server for AS/400, follow the relevant instructions in the AS/400 Information Center for those products. You can access the Information Center on CD-ROM or at <http://www.as400.ibm.com/infocenter>.

Who Should Read This Book

This book is for anyone who wants to use an Integrated Netfinity Server as a LAN adapter or firewall.

The user of this book should be familiar with AS/400 and general communications concepts.

For a list of related publications, see “Bibliography” on page 35.

Conventions and Terminology Used in This Book

Product Name

The name *File Server I/O Processor*, or FSIOF, originally referred to the 6506 File Server I/O Processor. Further product development produced new File Server I/O Processors. File Server I/O Processors were renamed Integrated PC Servers, and are now collectively called Integrated Netfinity Servers. The name of the SA2 software product Integration Services for FSIOF still reflects the original name. Otherwise this book uses the name Integrated Netfinity Server.

AS/400 Operations Navigator

AS/400 Operations Navigator is a powerful graphical interface for Windows clients. With AS/400 Operations Navigator, you can manage and administer your AS/400 systems from your Windows desktop.

You can use Operations Navigator to manage communications, printing, database, security, and other system operations. Operations Navigator includes Management Central for managing multiple AS/400 systems centrally.

Figure 1 shows an example of the Operations Navigator display:

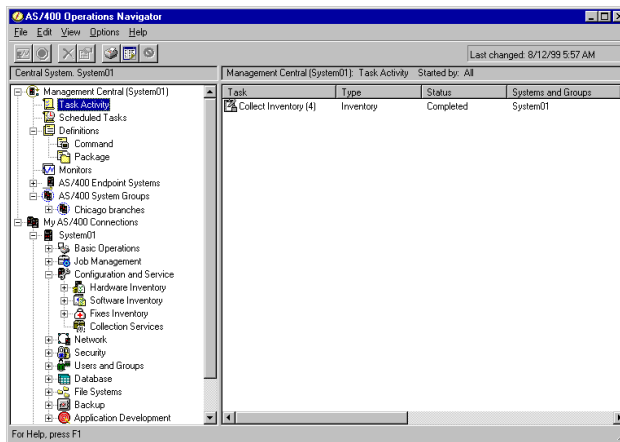


Figure 1. AS/400 Operations Navigator Display

This new interface has been designed to make you more productive and is the only user interface to new, advanced features of OS/400. Therefore, IBM recommends that you use AS/400 Operations Navigator, which has online help to guide you. While this interface is being developed, you may still need to use an emulator such as PC5250 to do some of your tasks.

Installing Operations Navigator

To use AS/400 Operations Navigator, you must have Client Access installed on your Windows PC. For help in connecting your Windows PC to your AS/400 system, consult *Client Access Express for Windows - Setup*, SC41-5507-01.

AS/400 Operations Navigator is a separately installable component of Client Access that contains many subcomponents. If you are installing for the first time and you use the **Typical** installation option, the following options are installed by default:

- Operations Navigator base support
- Basic operations (messages, printer output, and printers)

To select the subcomponents that you want to install, select the **Custom** installation option. (After Operations Navigator has been installed, you can add subcomponents by using Client Access Selective Setup.)

After you install Client Access, double-click the **AS400 Operations Navigator** icon on your desktop to access Operations Navigator and create an AS/400 connection.

Prerequisite and Related Information

Use the AS/400 Information Center as your starting point for looking up AS/400 technical information. You can access the Information Center from the AS/400e Information Center CD-ROM (English version: *SK3T-2027*) or from one of these Web sites:

<http://www.as400.ibm.com/infocenter>
<http://publib.boulder.ibm.com/pubs/html/as400/infocenter.htm>

The AS/400 Information Center contains advisors and important topics such as logical partitioning, clustering, Java, TCP/IP, Web serving, and secured networks. It also contains Internet links to Web sites such as the AS/400 Online Library, AS/400 redbooks, and the AS/400 Technical Studio.

For a list of related publications, see the “Bibliography” on page 35.

How to send your comments

Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other AS/400 documentation, fill out the readers’ comment form at the back of this book.

- If you prefer to send comments by mail, use the readers’ comment form with the address that is printed on the back. If you are mailing a readers’ comment form from a country other than the United States, you can give the form to the local IBM branch office or IBM representative for postage-paid mailing.
- If you prefer to send comments by FAX, use either of the following numbers:

- United States, Canada, and Puerto Rico: 1-800-937-3430
- Other countries: 1-507-253-5192
- If you prefer to send comments electronically, use one of these e-mail addresses:
 - Comments on books:
 - RCHCLERK@us.ibm.com
 - IBMMAIL, to IBMMAIL(USIB56RZ)
 - Comments on the AS/400 Information Center:
 - RCHINFOC@us.ibm.com

Be sure to include the following:

- The name of the book.
- The publication number of the book.
- The page number or topic to which your comment applies.

Chapter 1. Summary of Changes

For V4R5 and later releases, IBM® no longer supports running these products on an Integrated Netfinity Server:

- 5769SA3 - OS/400 Integration for Novell NetWare
- 5769XZ1 - OS/2 Warp Server for AS/400

To avoid data loss if you have either of these products installed on your system, please read this notice before upgrading to OS/400 Version 4, Release 5. Once you install OS/400 Version 4, Release 5, these products will no longer work. Do not use the Restore License Program command to load a previous release of these products onto an AS/400 with V4R5 or later version of the operating system. To avoid losing data that depends on these products, migrate that data from your server to an accessible location before upgrading to Version 4, Release 5. Here are some suggestions:

- For assistance in migrating your data to AS/400 NetServer, see redbook *Advantage AS/400® NetServer*, SG24-5196.
- To continue integrating NetWare data with AS/400, migrate that data to remote PC servers before you upgrade to V4R5. Then you can use OS/400 Enhanced Integration for Novell NetWare to integrate your remote NetWare servers with AS/400. For information about OS/400 Enhanced Integration for Novell NetWare, see the topic "NetWare on AS/400" under the heading "Network Operating Systems" in the AS/400 Information Center.
- For alternative ideas to help migrate your data, see information APAR II11689. You can also refer to a redpaper that discusses migration options: *Migration Options for OS/2® Warp Server for AS/400 and OS/400 Integration for Novell NetWare*.

End of Currency (EOC) for Integration Services for FSIOP (5769SA2) and IBM Firewall for AS/400 is 5/31/01.

You can find information on creating network server description (NWSD) configuration files in the AS/400 Information Center under the Windows server on AS/400 topic.

Chapter 2. Introducing Integrated Netfinity Server

The Integrated Netfinity Server (formerly called Integrated PC Server and FSIOP) is hardware that you attach to your AS/400 system. It contains an Intel processor and separately orderable memory. You install it in AS/400 much like a memory upgrade. Depending on the model, the Integrated Netfinity Server card has parallel and serial ports or a Universal Serial Bus (USB) and can support token-ring or Ethernet adapters. You can use an Integrated Netfinity Server as a LAN adapter or both a processor and LAN adapter for running such applications as these:

- Windows[®] server on AS/400

For information about Windows server on an Integrated Netfinity Server, see the topic Windows server on AS/400 under the Network Operating Systems heading in the *AS/400 Information Center and Softcopy Library CD-ROM*.

- Firewall for AS/400, except on the 2890 Integrated Netfinity Server

For information about using your Integrated Netfinity Server as a firewall, see "Firewall: Getting started" under the Security topic in the *AS/400 Information Center and Softcopy Library CD-ROM*. Support for Firewall on an Integrated Netfinity Server ends 5/31/01 (1 year earlier than V4R5 EOC).

- Integration Services for FSIOP, which is required to use your Integrated Netfinity Server as a LAN adapter or firewall. Support for the SA2 product ends 5/31/01 (1 year earlier than V4R5 EOC).

At V4R5 and later releases of OS/400, you can no longer run these applications on an Integrated Netfinity Server:

- Novell NetWare, 5769-SA3
- OS/2 Warp Server for AS/400, 5769-XZ1

Two types of Integrated Netfinity Server are presently available: a Pentium[®] II version and a Pentium III version. IBM does not support OS/2 based applications, such as Firewall for AS/400, on the new Pentium III version. The Pentium Pro version is no longer orderable.

The following Integrated Netfinity Server types are supported:

Feature Code	System	CCIN Numbers	Description
#2852	150	2850-011	P6 Integrated Netfinity Server
		285A-003	Windows server bridge card
#2865	600/620 S10/S20 720/730/740	2850-012	Pentium II Integrated Netfinity Server
		285A-003	Windows server bridge card
#2866	170	2850-012	Pentium II Integrated Netfinity Server
		285A-003	Windows server bridge card
#2868	150	2850-012	Pentium II Integrated Netfinity Server
		285A-003	Windows server bridge card

Feature Code	System	CCIN Numbers	Description
#2790	820/830/840	2890-001	Pentium III Integrated Netfinity Server
#2890	270	2890-001	Pentium III Integrated Netfinity Server
#6617	All RISC systems with SPD slots	6617-001	Pentium Pro Integrated Netfinity Server
#6618	All RISC systems with SPD slots	6617-012	Pentium II Integrated Netfinity Server

Depending on the AS/400 model, you can install up to 16 Integrated Netfinity Servers on an AS/400. An Integrated Netfinity Server can have one, two, or three ports.

Chapter 3. Installing Integration Services for FSIOP

If you are using your Integrated Netfinity Server as a LAN adapter or firewall, you need to have Integration Services for FSIOP installed on your system. This chapter shows how to install Integration Services for FSIOP.

Note: You do not need this program to run Windows server on the Integrated Netfinity Server.

To Install Integration Services for FSIOP:

1. If you have previously installed this program, you must vary off (stop) all network server descriptions (NWSDs) before reinstalling. Verify that the system directory contains the user profile that you intend to use. To verify, use the Work with Directory Entries (WRKDIRE) command.
2. Type G0 LICPGM and press Enter. The Work with Licensed Programs menu appears.
3. Type option 10 to display the installed Licensed Programs and look for Integration Services for FSIOP.
4. If Integration Services for FSIOP does not have a status of Installed, return to the Work with Licensed Programs menu.
5. Type option 11 to install licensed programs.
6. Page down until you find Integration Services for FSIOP in the list; type 1 in the option field next to it to install it.
7. Wait for the Integration Services for FSIOP licensed program to finish installing. If you do not want to install any additional languages, then you have finished the installation procedure. If you do want to install additional languages, return to the Work with Licensed Programs menu and select option 21 (Install secondary languages).
8. Type 1 in the option field next to the secondary language or languages you want to install from the Install Secondary Languages display and press Enter.

```

                                Install Secondary Languages
                                System:  SYSAS400
Primary language . . . . . : 2924
Description . . . . . : English

Type options, press Enter.
  1=Install

Option  Language  Description                               Library      Installed
-      -          -          -          -          -
  1     2902     Estonian   QSYS2902
-      2903     Lithuanian QSYS2903
-      2904     Latvian    QSYS2904
-      2905     Vietnamese QSYS2905
-      2906     Lao        QSYS2906
-      2909     Belgian English QSYS2909
-      2911     Slovenian QSYS2911
-      2912     Croatian   QSYS2912
-      2913     Macedonian QSYS2913
-      2914     Serbian Cyrillic QSYS2914
-      2922     Portuguese QSYS2922

                                More...

F3=Exit  F12=Cancel
(C) COPYRIGHT IBM CORP. 1980, 2000.

```

Figure 2. Install Secondary Languages Display

If you want to use your Integrated Netfinity Server as a LAN adapter, see “Chapter 4. Configuring Integrated Netfinity Server for AS/400 as a LAN Adapter” on page 7. For information about using your Integrated Netfinity Server as a firewall, see “Firewall: Getting started” under the Security topic in the *AS/400 Information Center and Softcopy Library CD-ROM*.

Note: Support for using your Integrated Netfinity Server as a LAN adapter or Firewall ends 5/31/01 (1 year earlier than V4R5 EOC).

Chapter 4. Configuring Integrated Netfinity Server for AS/400 as a LAN Adapter

Proceed with this chapter if you plan to use your Integrated Netfinity Server as a **LAN adapter only**. If you want to run a licensed program such as AS/400 Integration for Windows Server or Firewall for AS/400 on your Integrated Netfinity Server, refer to the AS/400 Information Center for information specific to that application. You can access the Information Center in one of these places:

1. The Information Center CD-ROM that came with your system
2. The Internet version of the Information Center at
<http://www.as400.ibm.com/infocenter>

You will also find information about AS/400 Integration for Windows Server in the book *IBM AS/400 Integration for Windows Server – Setup*, SC41–5439, that came with your Integrated Netfinity Server card.

There are three parts to the configuration procedure for setting up an Integrated Netfinity Server for AS/400 only as a LAN adapter:

- Determining the name of the resource that represents your Integrated Netfinity Server
- Creating a network server description (NWSD)
- Creating a line description

Determining the Name of the Integrated Netfinity Server for AS/400 Resource

Before you can configure your Integrated Netfinity Server as a LAN adapter, you must know the name of the resource that represents your Integrated Netfinity Server.

To determine the name of the resource:

1. On the AS/400 command line, enter GO CFGNWS. The Configure Network Server menu appears.
2. Type option 10 to work with hardware resources and press Enter.
3. On the Work with Hardware Resources (WRKHDWRSC) display that appears, press Enter to accept the default *CMN for the Type value. The Work with Communication Resources display appears.
4. Record the name of the resource that represents your Integrated Netfinity Server. The Integrated Netfinity Server appears as File Server IOP or File Server IOA. A File Server IOA has an associated resource name in the format LINxx, in which xx is a number. A File Server IOP has an associated resource in the format CCxx, in which xx is a number. The Work with Communication Resources display that appears in Figure 3 on page 8 is similar to the one you will see if you have a 2850 Integrated Netfinity Server. The resource name in this example is LIN05.

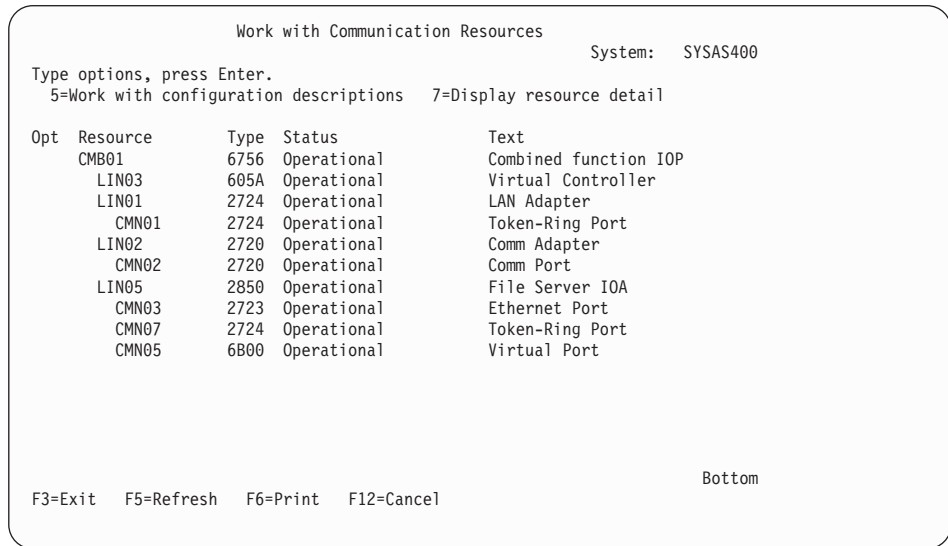


Figure 3. Work with Communication Resources Display (2850 Integrated Netfinity Server)

Creating a Network Server Description (NWSD)

For each Integrated Netfinity Server, you must create a network server description (NWSD). The NWSD provides setup information about the Integrated Netfinity Server server software, network protocol, and a definition of attached communications equipment, such as line descriptions. Only one NWSD is required for an Integrated Netfinity Server, no matter how many ports it has.

To create a network server description:

1. On the AS/400 command line, type CRTNWSD and press Enter. The Create Network Server Desc (CRTNWSD) command prompt display appears.
 You can also select option 1 from the Configure Network Server menu.
2. In the Network server description field, specify the name of the network server. All network server descriptions in a physical LAN must have a unique name. The network server description name can have up to eight characters. To avoid character translation problems, use the characters A-Z and 0-9 when naming the network server.
3. In the Resource name field, specify the resource name of your Integrated Netfinity Server. If you do not know the resource name, see "Determining the Name of the Integrated Netfinity Server for AS/400 Resource" on page 7.
4. Specify *BASE for the network server type parameter and press Enter to get the remaining parameters.
5. The Country Code and Code Page (CNTRYCODE and CODEPAGE) parameters define the country code and ASCII code page used by clients on this network

server. *LNGVER specifies to use the default country code and code page corresponding to the language version of AS/400.

Integration Services for FSIOP supports fewer language versions than OS/400. For a complete list of country code values, see Table 4 on page 31. For a complete list of code page identifiers that are supported by Integration Services for FSIOP, see Table 3 on page 30. All users on an active Integrated Netfinity Server must use the same language.

6. In the Server message queue field, specify the name of a message queue to receive server console messages. Unless you specify *NONE, AS/400 logs console activity to either the specified message queue or the monitor job log. It is important to note that the console log may contain password information. Take appropriate steps to secure this information on AS/400. Using the default *JOBLOG for the server message queue causes console messages from the server to go in the job log of the monitor job. The monitor job runs in the QSYSWRK subsystem and starts when you vary on the network server description. For information on checking the server monitor job log, see “Checking the Monitor Job Log” on page 19.
7. If you want to use an NWSD configuration file to change the server configuration, specify the name of the configuration file in the Configuration file field. In the Library field, specify the name of the library where it is located.

Note: An NWSD configuration file is required only if you need to change the existing server configuration files. The NWSD configuration file does not have to exist at the time it is specified on the NWSD, but it must exist before you vary on the NWSD.

You can find information on creating NWSD configuration files in the Windows server on AS/400 topic in the AS/400 Information Center.

8. In the Start NetBIOS field, specify whether you want AS/400 to activate the NetBIOS protocol when you vary on the Integrated Netfinity Server.
9. If you have already created any line descriptions, in the Ports field specify the names of the lines that are attached to the ports on the network server description. If you have not yet created a line description for the network server description, specify *NONE or leave the field blank. When you create your line description, you specify the network server description to which the line is attached. AS/400 then automatically associates the network server with the line description.

Note: You cannot change these line names once you create the network server description. If the line descriptions do not match the names specified for the ports, do not create a new network server description. Instead delete, then re-create the line description using the names entered here.
10. In the Authority field, specify the default public authority you are giving to users and group profiles who do not have specific authority to the NWSD or who are not on the authorization list.

Creating a Line Description

You can use either a token-ring or an Ethernet line description with Integrated Netfinity Server, depending on your network. Most of the configurations for line descriptions associated with using the Integrated Netfinity Server as a LAN adapter are very similar to those you already use for other AS/400 functions.

You cannot use token-ring or Ethernet line descriptions that were created prior to V3R1 of OS/400 to attach to a network server, because they do not support using a network server as a resource name. You can copy the information from an existing line description by using the Work with Line Description (WRKLIND) command. You can also create a CL program that uses the Retrieve Configuration Source (RTVCFGSRC) command to create a line description.

To create a token-ring line description:

1. To create a token-ring line description, you use the Create Line Description (Token-Ring) command. Type CRTLINTRN and press Enter. The Create Line Description (Token-Ring) display appears.
You can also select option 21 (Line commands) from the Configure Network Server menu; then select option 27 to create a token-ring line description.
2. Specify a name for the line description.
3. In the Resource Name field, specify *NWSD to indicate that the resource name is specified in the network server description that is associated with this line description.
4. In the NWI type field, you can specify the network interface type as either *FR (frame relay) or *ATM. Continue with step 4 under the directions for creating an Ethernet line description.

To create an Ethernet line description:

1. To create an Ethernet line description, you use the Create Line Description (Ethernet) command. Type CRTLINETH and press Enter. The Create Line Desc (Ethernet) display appears.
You can also select option 21 (Line commands) from the Configure Network Server menu, and then select option 20 (Create Line Desc (Ethernet)). You may need to page down to get to these options.
2. Specify a name for the line description.
3. In the Resource Name field, specify *NWSD to indicate that the resource name is specified in the network server description that is associated with this line description.
4. Press F10 to view additional parameters.
5. If you have not yet created a network server description (NWSD), leave the Network server description field blank. If you are attaching the line to an existing network server description, specify the name in this field and the port on that server to which the line is attached.
6. If you are attaching the line to an existing NWSD, use the Port number field to specify the port on that server to which the line is attached.

Specify 1, 2, 3, or *INTERNAL for all Integrated Netfinity Servers. *INTERNAL defines a virtual LAN port between the Integrated Netfinity Server and AS/400. The virtual LAN port can be used by applications in the Integrated Netfinity Server and on AS/400 for faster communications. It cannot be used for any type of client connection to the AS/400.

Note: Do **not** connect more than one cable to a single port. If you connect both a token-ring and an Ethernet cable to a single port, the hardware configuration uses the token-ring connection and ignores the Ethernet connection.

7. In the Local adapter address field, specify the adapter address for this line description within the range shown.

Notes:

- a. The default *ADPT value is not valid for Integration Services for FSIOP.
- b. If you have existing Ethernet or token-ring LANs, you may have to update servers and devices on those LANs to identify AS/400 by its local adapter address.

The address you use for such applications as 5250 emulation, Client Access, and the like, needs to match this address to access the AS/400 through the Integrated Netfinity Server.

8. Use the SSAP list field to specify the source service access point (SSAP) information, including a source service access point value, an SSAP maximum frame size, and an SSAP type. Do not use SSAP values of F0, F8, and FC for lines that are attached to network server descriptions. These values conflict with other protocols and may cause unexpected results. You can use the defaults for this parameter without conflict.
9. Page down until you see the Autocreate controller prompt. Specify *YES for this parameter. Otherwise, you must create a controller description before the Integrated Netfinity Server can be used for AS/400 communications.

For more information on configuring controller descriptions and AS/400 communications, see the book *Communications Configuration*, SC41-5401-00. Most changes to the line description require that you vary off the network server, change the line description, and then vary the network server on again. Some changes are allowed when the line is active. For a list of parameters that includes when the changes take effect, see the *Communications Configuration* book.

When you have finished installing and configuring the Integrated Netfinity Server as a LAN adapter, you can start the feature by varying on the network server. For more information, see “Starting and Stopping Integrated Netfinity Server” on page 13.

After you have successfully varied on the network server, save a copy of the working NWSD and server configuration files. Then, if later changes to the NWSD or server configuration files cause errors, you can restore the working version of the NWSD and the server configuration files. For more information, see “Saving a Network Server Description” on page 15 and “Saving Server Storage Spaces” on page 16.

Chapter 5. Managing your Integrated Netfinity Server

This chapter describes the following:

- Starting and stopping Integrated Netfinity Server
- Checking network server status
- Submitting network server commands
- Saving network server data
- Restoring network server data

Starting and Stopping Integrated Netfinity Server

Only one NWSD can be active for each Integrated Netfinity Server. Once an application is installed on the Integrated Netfinity Server, starting and stopping the network server also starts and stops the application, not just the operating system running on the Integrated Netfinity Server.

To **start** your Integrated Netfinity Server, you can use one of these methods:

- From the Network Server Administration menu, select option 2.
- Use the Vary Configuration (VRYCFG) command.
- Use the Work with Configuration Status (WRKCFGSTS) command:
 1. At the AS/400 command line, type `WRKCFGSTS *NWS` and press Enter.
 2. Type a 1 in the Opt field to the left of the network server description you want to vary on and press Enter.
- If you are using your Integrated Netfinity Server with AS/400 Integration for Windows Server, you can use AS/400 Operations Navigator:
 1. Expand **Network**.
 2. Expand **Windows Administration**.
 3. Expand **Integrated Netfinity Servers**.
 4. Select the server you want to start by clicking on it. If you want to start all Windows servers, right-click within the Integrated Netfinity Servers container and select **Start All**.
 5. Start the server either by right-clicking and selecting **Start** or by clicking the appropriate icon from the AS/400 Operations Navigator toolbar.

To **stop** your Integrated Netfinity Server, you can use one of these:

- From the Network Server Administration menu, select option 3.
- Use the Vary Configuration (VRYCFG) command.
- Use the Work with Configuration Status (WRKCFGSTS) command:

At the AS/400 command line, type `WRKCFGSTS *NWS` and press Enter.

Type a 2 in the Opt field to the left of the network server description you want to vary off.

If you are running AS/400 Integration for Windows Server, press F4 and specify *YES in the Force vary off field. (Forcing the vary off prevents your having to first end any external LAN interfaces for this server.)

Press Enter. The Integrated Netfinity Server shuts down.

- If you are using your Integrated Netfinity Server with AS/400 Integration for Windows Server, you can use AS/400 Operations Navigator:
 1. Expand **Network**.
 2. Expand **Windows Administration**.
 3. Expand **Integrated Netfinity Servers**.
 4. Select the server you want to stop by clicking on it. If you want to shut down all Windows servers, right-click within the Integrated Netfinity Servers container and select **Shut Down All**.
 5. Shut down the server either by right-clicking and selecting **Shut Down** or by clicking the appropriate icon from the AS/400 Operations Navigator toolbar.

Checking Network Server Status

To view the status of a network server, enter this command:

WRKNWSSTS SVRTYPE(*BASE). The Work with Network Server Status Display appears.

```
Work with Network Server Status
System:  SYSNAMXX
Server type . . . . . : *BASE
Type options, press Enter.
  8=Work with configuration status  14=Restart server  15=Work with storage
Opt  Server  Status      Text
---  -----  -----  -----
---  BENCC04  ACTIVE      *BLANK
---  BENICC09  INACTIVE   *BLANK

Parameters or command
====>
F3=Exit  F4=Prompt  F5=Refresh  F6=Print list  F9=Retrieve  F12=Cancel
F17=Position to

Bottom
```

Figure 4. Work with Network Server Status Display

This display shows you the list of base servers and their status (active, inactive, or pending).

This display also allows you to work with configuration status, restart a server, and work with network server storage spaces.

Submitting Network Server Commands

The default authority for the Submit Network Server Command (SBMNWSCMD) command is public *EXCLUDE. To use this command, you need *JOBCTL special authority. Access to this command should be restricted to only a few users. Restricting access should help prevent inadvertently submitting inappropriate commands, such as a command to reformat a drive.

The network server must be active for the command you submit to run. Additionally, AS/400 converts the data returned by an OS/2 command from ASCII to EBCDIC, but not to another language.

To submit a command to run on a network server, do this:

1. On the AS/400, type SBMNWSCMD and press F4.
2. Submit a command in the space provided. For example, you could submit a TYPE command to view the contents of a file in the server storage space.

You can prevent AS/400 from logging a command string that contains sensitive data, such as passwords, to the job log. To do this, specify *NOLOGCMD for the command (CMD) parameter and press Enter. Enter the command string in the Command (not Logged) field.

3. Specify the name of the server that you want to run the command.
4. The default for the command Type field is *SVRTYPE. AS/400 uses the information specified in the Type field this to determine what type of processing needs to occur for the command string.
5. The default for the Server type field is *NWSUSRA, which uses network server user attributes (CHGNWSUSRA command) for the user profile that is running this command. Specify *WINDOWSNT if you want to run a command on a Windows server on the Integrated Netfinity Server.
6. Press Enter to run the command.
7. View the output of the command in the job log.

Saving Network Server Data

You can save network server descriptions, server storage spaces, and network server storage spaces.

Saving a Network Server Description

You should save an NWSD whenever you change it. To save an NWSD, vary off the network server, then enter the Save Configuration (SAVCFG) command.

You cannot specify the name of the configuration object to save. When you enter the Save Configuration (SAVCFG) command, all configuration objects are saved. However, you can selectively restore the network server configuration with the Restore Configuration (RSTCFG) command.

Saving Server Storage Spaces

When you create the NWSD, you also automatically create two server storage spaces (*SVRSTG objects). These server storage spaces hold the entire disk that is created when you create the NWSD. They contain licensed programs and system files.

Note: If you are running Windows server on AS/400, refer to the Information Center for information on how AS/400 manages storage that is specific to that product.

The server storage spaces for each NWSD are stored in the QUSRSYS library. The names of the server storage spaces are the same as the name of the NWSD, followed by a 1 or 3. The first storage space (NWSD name followed by 1) holds the files and programs to start the Integrated Netfinity Server and is referred to as the C drive. The second storage space (NWSD name followed by 3) is often referred to as the E drive.

You should save these storage spaces after a successful configuration and then periodically after that.

To save these server storage spaces, first vary off the network server. Then, enter the Save Object (SAVOBJ) command and press F4 to prompt for these options:

Objects

Specify xxxx1 and xxxx3, where xxxx is the name of the network server description.

Library

Specify QUSRSYS.

Object types

Specify *SVRSTG.

Restoring Network Server Data

There are two ways to restore network server data:

- Restore the storage spaces and the configuration that you saved
- Delete and then re-create the network server storage spaces and configuration

Restoring a Network Server Description

To restore a network server description, enter the Restore Configuration (RSTCFG) command and press F4 for the following options:

Object

The network server description name.

Device

The tape that contains the configuration you saved.

Object type

Specify *NWSD.

Restoring Server Storage Spaces

To restore a server storage space, type the Restore Object (RSTOBJ) command and press F4 for the following options:

Objects

Specify xxxx1 and xxxx3, where xxxx is the name of the network server description.

Library

Use default of *QUSRSYS.

Object types

Specify *SVRSTG.

Deleting Network Server Data

You can delete network server descriptions (NWSDs), network server storage spaces, and line descriptions. When you delete an NWSD, you also delete the two server storage space objects that are automatically created when the NWSD is created.

Deleting a Network Server Description

To delete a network server description, enter the Delete Network Server Description (DLTNWSD) command and specify the NWSD that you want to delete.

When you delete an NWSD, you also delete the two server storage space objects that are automatically created when the NWSD is created.

For information on re-creating an NWSD, see “Creating a Network Server Description (NWSD)” on page 8.

Deleting Server Storage Spaces

There is no command to delete the storage spaces that AS/400 creates when you create a network server description (NWSD). AS/400 automatically deletes these storage spaces when you delete the NWSD. You can, however, delete user-created network server storage spaces that you own

Before you can delete a network server storage space, you must unlink it from the network server description. To unlink the storage space, you use the Remove Server Storage Link (RMVNWSSTGL) command. Specify the name of the storage space (usually the name of the NWSD followed by a number) and the server.

When you have unlinked it, you can delete these storage spaces by using the Delete Network Server Storage Space (DLTNTWSTG) command.

Deleting A Line Description

To delete a line description, enter the Delete Line Description (DLTLIND) command.

For information on re-creating a line description, see “Creating a Line Description” on page 10.

Chapter 6. Handling Problems

This chapter describes the following:

- Checking the monitor job log
- Recovering from problems
- Recovering from server configuration file errors

Checking the Monitor Job Log

Every active Integrated Netfinity Server has a monitor job that manages such functions as:

- Starting and stopping the Integrated Netfinity Server
- Monitoring errors, alerts, and audit events that occur on the Integrated Netfinity Server

When you vary on the network server description (NWSD), the monitor job starts running in the QSYSWRK subsystem. The job name corresponds to the name of the Integrated Netfinity Server that it is monitoring. The job runs under the QSYS user profile.

When the monitor job starts, the system sends an informational message, CPIA41B, to the QSYSOPR message queue. This message contains the job ID of the monitor job. You can use this job ID with the Work with Job (WRKJOB) command to find the monitor job log and other job-related information for the monitor job.

If an Integrated Netfinity Server does not appear to be functioning normally, you can check the monitor job log for any errors generated on the Integrated Netfinity Server. These errors may help you determine a course of action to correct them.

To check the monitor job log, do this:

1. Enter the Work with Active Jobs (WRKACTJOB) command by typing WRKACTJOB SBS(QSYSWRK) at any AS/400 command line;press Enter. The Work with Active Jobs display appears.
2. If the monitor job is still active, it appears on this display. The job runs under the QSYS user profile, and the job name is the same as the NWSD that was varied on. Locate the job and enter option 5 (Work with) next to the job name. The Work with Job display appears.
3. Select option 10 (Display job log) to display the active job log.
4. If you cannot locate the monitor job on the Work with Active Jobs display, then the job has either ended or not been started.

To locate a monitor job that has either ended or not been started, do this:

1. Display all spooled files that are associated with the QSYS user profile by using the Work with Spooled Files (WRKSPLF) command:
 - a. Type WRKSPLF QSYS on the AS/400 command line and press Enter.

The Work with All Spooled Files display appears. This contains all spooled files that are associated with the QSYS user profile. If the AS/400 has kept the monitor job log, it will appear here.

- b. Look for the NWSD name specified under the User Data column of the Work with All Spooled Files display.
2. Use the job ID of the monitor job to locate the job log:
 - a. Enter the Display Messages (DSPMSG) command as follows:
DSPMSG QSYSOPR
The Display Messages display appears.
Message CPIA41B is issued at the start of the monitor job and is sent to both the QSYSOPR message queue and the monitor job's job log. This message contains the name of the NWSD that was varied on and also the fully-qualified job name of the associated monitor job.
 - b. Locate the CPIA41B message that corresponds to the time the NWSD was varied on and record the job ID contained in the message.
 - c. Enter the Work with Job (WRKJOB) command as follows:
WRKJOB number/QSYS/job
where the CPIA41B message text provides number and job.
If the system cannot find the job, then it will not retain the spooled file that contains the monitor job log. Continue with "What to Do If There Is No Monitor Job Log".
If the system finds the job, continue with step 2d.
 - d. Select option 4 (Work with spooled files) on the Work with Job display.
 - e. Examine the contents of the job log to determine what, if any, errors occurred.

What to Do If There Is No Monitor Job Log

Whether the monitor job produces a job log depends on the value that is specified for the LOG keyword in the job description that is used to submit this job.

If there is no job log, follow these steps to change the job description for the job that controls this monitor job.

1. Enter the Display Job Description (DSPJOBDD) command as follows:
DSPJOBDD QGPL/QBATC
2. If you have set the message logging text parameter to "*NOLIST", change it to "*SECLVL".

Also, make sure that you have set the message logging level parameter to "4" and the message logging severity parameter to "00".

You must re-create the problem, so reset the Integrated Netfinity Server by varying it off and then on again. If the failure recurs, you should now be able to follow the steps in "Checking the Monitor Job Log" on page 19.

Analyzing Problems

This section discusses both problems or error conditions you may encounter and actions you can take to recover from them.

Network Server Status Remains at PENDING

Problem: When you first vary on a network server, the vary on appears to remain at a status of pending for a long time.

Recovery: If the network server remains at pending, the most likely cause is a NetBIOS error between the IOP and OS/400. Another likely cause could be a damaged server storage space for drive E.

If the cause is a NetBIOS error, check the monitor job log. The job log will display detailed error and recovery messages. See “Checking the Monitor Job Log” on page 19.

If the cause is a damaged server storage space for the E drive, you will see message CPDA442 when you vary the network server on. You can try one of the following:

- Vary the network server on again
For information, see “Starting and Stopping Integrated Netfinity Server” on page 13.
- Delete and re-create the NWSD
For information, see “Deleting a Network Server Description” on page 17 and “Creating a Network Server Description (NWSD)” on page 8.
- Restore a backup copy of the server storage space
For information, see “Restoring Server Storage Spaces” on page 17.

Vary Off Line Not Successful

Problem: You receive a message that indicates that you cannot vary off the line you specified.

Recovery: Vary off the network server to which the line is attached. Lines that are attached to network servers cannot be varied off independently of the network server.

Duplicate Address Message on Token Ring

Problem: You receive a message that indicates that another adapter that uses the same address is trying to insert into the token ring.

Recovery: Adapter addresses must be unique within a network. Specify a unique adapter address for your Integrated Netfinity Server.

Network Server Fails to Vary On or Remain Active, or Lines Fail

Problem: You receive a message that indicates that the IOP has failed or lines have failed. You will see error message CPI947F.

Recovery: Increase the machine pool size in increments of 2000K, attempting to vary on the network server after each increase.

To increase the machine pool size, enter the following command, then select option 2 to change the machine pool size.

```
WRKSYSVAL QMCHPOOL
```

Vary On Fails for Line Attached to Network Server

Problem: The line description attached to a varied on network server description did not vary on.

Recovery: If you are using the communications lines, you must vary the network server description off and on again. If you intend to access Integrated Netfinity Server through AS/400, you can use the network server as it is.

Network Server Description Dump

You can use the network server description dump tool to dump the different configuration and log files that are used with Integrated Netfinity Server.

To call the program enter the following command from a user ID with *ALLOBJ special authority:

```
CALL QFPDMPLS PARM(nwsdname)
```

The program creates a database file QGPL/QFPNWSMDMP with multiple members. Each database file member has the network server description name followed by two digits (01-99). For example, for an NWSD named *myserver*, the first member name would be *myserver01*.

Display the member to see the contents of the different configuration files associated with your server description. Different files are important for problem analysis, depending on which installation step is causing a problem. Table 1 is a reference between the member name and the file name and location.

Table 1. File List for BASE NWSD Types

Member	File Name	Location
nwsdname01:	CONFIG.SYS	Drive C, root dir
nwsdname02:	CONFIG.SYS	Drive E, root dir
nwsdname03:	PROTOCOL.INI	Drive E, IBMCOM subdir
nwsdname04:	NODISP.LOG	Drive E, OS2\SYSTEM subdir
nwsdname05:	LANTRAN.LOG	Drive E, IBMCOM subdir

Table 1. File List for BASE NWSD Types (continued)

Member	File Name	Location
nwsdname06:	QFPAADM.TRC	Drive E, root dir
nwsdname07:	POPUPLOG.OS2	Drive E, root dir
nwsdname08:	SERVICE.INI	Drive E, root dir
nwsdname09:	STARTUP.CMD	Drive E, root dir
nwsdname10:	SHUTDOWN.CMD	Drive E, root dir
nwsdname11:	SDTIME.TXT	Drive E, root dir
nwsdname12:	RESOLV	Drive E, MPTN\ETC subdir
nwsdname13:	HOSTS	Drive E, MPTN\ETC subdir
nwsdname14:	SETUP.CMD	Drive E, MPTN\BIN subdir
nwsdname15:	QYNANOTE.INI	Drive E, root dir
nwsdname16	FWPRCCTL.LOG	Drive E, FIREWALL\ERRORLOG subdir
nwsdname17	STDOUT.LOG	Drive E, FIREWALL\ERRORLOG subdir
nwsdname18	FWERROR.ERR	Drive E, FIREWALL\ERRORLOG subdir
nwsdname19	SENDMAIL.ERR	Drive E, FIREWALL\ETC subdir
nwsdname20	MAIL.LOG	Drive E, FIREWALL\ETC subdir

Recovering from Server Configuration File Errors

If a server configuration file causes errors, you can either repair that server configuration file or reset to a working server configuration file. If you are unsure whether a server configuration file is causing an error, reset the server configuration files to the version that is shipped with Integration Services for FSIOF. If the error disappears, it is likely there is a problem with one of the server configuration files.

For information on resetting the server configuration files, see "Using the Server Configuration Files Shipped with Integrated Netfinity Server" on page 25.

Repairing the Server Configuration File

If the server configuration file problems are caused by changes that were made with an NWSD configuration file or from a workstation, edit the NWSD configuration file to repair the server configuration file. You can then vary the network server on again. Information on NWSD configuration files is available in the AS/400 Information Center under the Windows server on AS/400 topic. To locate this information, go to <http://www.as400.ibm.com/infocenter> and search for "NWSD configuration file".

Errors in the NWSD configuration file do not cause the vary on of the network server to fail. AS/400 skips the configuration file and issues a "Vary on completed with errors" message.

If the NWSD configuration file has errors, check the job log for error and recovery information. From this information, correct the NWSD configuration file and then vary on the network server again to repair the server configuration file.

For information on varying on the network server, see “Starting and Stopping Integrated Netfinity Server” on page 13.

Resetting the Server Configuration File

You can choose to replace the server configuration file with either a previous working version or the file that shipped with Integrated Netfinity Server.

Using A Previous Version of the Server Configuration File

When you vary on a network server, the server configuration files are saved with a file extension of .BKU before any changes are made to the files.

If you have a copy of the server configuration file before the changes causing problems were made, you can reset the server configuration file that the network server uses back to this working version of the server configuration file.

Note: If an error occurs and you vary on the network server a second time, the server configuration file that may have caused the initial error is saved with an extension of .BKU. In this case, using the .BKU version of that server configuration file will not solve the problem.

To reset the server configuration file with a previous version of the file, do this:

1. Set the Configuration file parameter of the NWSD to *NONE to prevent the changes that are causing errors from being made to the server configuration file.
For information on setting this parameter, see page 7 on page 9.
2. Choose the server configuration file that you want to reset to a previous version.
3. Use the Submit Network Server Command (SBMNWSCMD) command to rename the file that is causing problems to another name. For example, to replace a CONFIG.SYS file that is causing problems, you could rename the file to CONFIG.ERR.

For information on using the Submit Network Server Command (SBMNWSCMD) command, see “Submitting Network Server Commands” on page 15.

4. Use the Submit Network Server Command (SBMNWSCMD) command to rename the previous version of the server configuration file to the original name. For example, to replace the non-working CONFIG.SYS file with CONFIG.BKU, you could rename the CONFIG.BKU file to CONFIG.SYS.

Note: The Submit Network Server Command (SBMNWSCMD) will not work if the server configuration file errors are so severe that the code necessary to run the command is not running.

5. Vary on the network server.

AS/400 uses the previous version of the server configuration file.

Using the Server Configuration Files Shipped with Integrated Netfinity Server

When you use the Vary Configuration (VRYCFG) command to vary on a network server, you can optionally reset some of the server configuration files to the version of those files that is shipped with Integrated Netfinity Server. To do this, you specify a value of *YES for the Reset configuration file parameter of the Vary Configuration (VRYCFG) command.

When you specify *YES, the current server configuration files are saved with a file extension of .QRS. Then the server configuration files are copied from the storage spaces shipped with Integrated Netfinity Server to the storage spaces used for varying on the network server. The server configuration files that are reset are as follows:

- CONFIG.SYS
- SERVICE.INI
- STARTUP.CMD
- PROTOCOL.INI

To reset the server configuration file to the version shipped with Integrated Netfinity Server, do this:

1. Set the Configuration file parameter of the NWSD to *NONE to prevent the changes that are causing errors from being made to the server configuration file.
For information on setting this parameter, see page 7 on page 9.
2. Set the Reset configuration file parameter of the Vary Configuration (VRYCFG) command to *YES.
3. Vary on the network server.
The server configuration file with any changes made by IBM-supplied NWSD configuration files is used.

Appendix. National Language Support

National Language Support (NLS) allows you to communicate with the system in the language you choose and obtain results that are culturally acceptable, for example:

- Date and time format
- Collating sequence
- Numbers presentation
- Currencies

When ordering an Integrated Netfinity Server, you order the language version that matches your Operating System/400 primary language version. You can order multiple Integrated Netfinity Servers, each with a different language version. Each Integrated Netfinity Server can only run in the language with which it was installed. It cannot run multiple languages at once. If you need more than one language, you must install multiple Integrated Netfinity Servers.

Country Code

Country code specifies the notation of dates and time. It does not influence numeric presentation, currency, monocasing, and other NLS-sensitive functions.

Code Page

A code page is a collection of graphic characters. Each character is assigned to a unique hexadecimal value within that code page.

When you create the NWSD on AS/400, you can specify the country code and ASCII code page as described in “Creating a Network Server Description (NWSD)” on page 8. The default is *LNGVER, corresponding to the language version of the system. You can specify another country code, but the language must be one of the installed language versions. Use the Display Software Resource (DSPSFWRSC) command to determine the installed languages. Then, use Table 2 on page 28 to determine the country code and code page for your NWSD.

Integration Services for FSIOF and AS/400 System National Language Versions

Table 2 on page 28 shows how valid parameter values for network server descriptions map to AS/400 system national language versions. The country code and code page values shown are valid for that language version when you use *LNGVER. The first code page value (for example, 864) is the default when you use *LNGVER.

Table 2. Integration Services for FSIOP and AS/400 System National Language Versions

Language	AS/400 National Language Version	Country Code for Server Descrip	Code Page ID for Server Descrip	Language Group
Arabic	2954	785	864, 437, 850	BIDI
Belgian Dutch multinational character set	2963	032	850, 437	SBCS
Belgian French multinational character set	2966	032	850, 437	SBCS
Brazilian Portuguese	2980	055	850, 437	SBCS
Canadian French multinational character set	2981	002	863, 850	SBCS
Croatian	2912	044	850, 852	SBCS
Czech	2975	042	850, 852	SBCS
Danish	2926	045	850, 852	SBCS
Dutch Netherlands	2923	031	850, 437	SBCS
English uppercase	2950	044	850	SBCS
English uppercase and lowercase	2924	001	850, 437	SBCS
English uppercase double-byte coded character set	2938	001	850	SBCS
English uppercase and lowercase double-byte coded character set	2984	044	850	SBCS
Farsi	2998	785	864	BIDI
Finnish	2925	358	850, 437, 865	SBCS
French	2928	033	850, 437	SBCS
French multinational character set	2940	002	850	SBCS
German	2929	049	850, 437	SBCS
German multinational character set	2939	049	850	SBCS
Greek	2957	044	850	SBCS
Hebrew	2961	972	862, 437, 850	BIDI
Hungarian	2976	036	850, 852	SBCS
Icelandic	2958	354	850, 861	SBCS
Italian	2932	039	850, 437	SBCS
Italian multinational character set	2942	039	850	SBCS
Japanese double-byte coded character set	2962	081	932, 437, 850, 942	DBCS
Korean double-byte coded character set	2986	082	949, 437, 850	DBCS
Norwegian	2933	047	850, 865	SBCS
Polish	2978	048	850, 865	SBCS
Portuguese	2922	351	850, 860	SBCS
Portuguese multinational character set	2996	351	850, 860	SBCS

Table 2. Integration Services for FSIOP and AS/400 System National Language Versions (continued)

Language	AS/400 National Language Version	Country Code for Server Descrip	Code Page ID for Server Descrip	Language Group
Russian	2979	044	850, 866	SBCS
Slovakian	2994	044	850, 852	SBCS
Slovenian	2911	044	850, 852	SBCS
Spanish	2931	034	850, 437	SBCS
Swedish	2937	046	850, 437, 865	SBCS
Thai	2972	044	850	SBCS
Traditional Chinese double-byte coded character set	2987	088	948, 938, 947, 950	DBCS
Turkish	2956	090	850, 857	SBCS

DBCS Support of Integration Services for FSIOP

DBCS support on an Integrated Netfinity Server allows double-byte character set characters to be used in network administration. Descriptive parameters can be in DBCS characters. On AS/400, Integration Services for FSIOP supports the following DBCS languages:

- Japanese
- Korean
- Simplified Chinese
- Traditional Chinese

The Integrated Netfinity Server menu and command prompt screens have been translated into the above national languages.

Multiple Languages in a DBCS Environment

If you are in a DBCS environment and want more than one language on your system, you must first load the primary language for your system as a DBCS English version as shown below:

Primary language 2938 (upper case English for DBCS)
 Secondary language 2962 (Japanese)

or

Primary language 2984 (upper/lower case English for DBCS)
 Secondary language 2986 (Korean)
 Secondary language 2987 (Traditional Chinese)
 Secondary language 2989 (Simplified Chinese)

When you order language 2938 for Integration Services for FSIO, you get the same version as in 2924 (English).

Similarly, when the English requester (provided with 2984) is put on a Korean DOS workstation, the same manual changes are required.

Integration Services for FSIO Code Page Identifiers

Integration Services for FSIO and OS/400 have different levels of national language support. Because of these differences, you need to understand how to choose the correct national language support parameters for server descriptions. The following tables identify which combinations of country code, code page, and language version values you can use when setting the server description parameters.

Integration Services for FSIO supports the code page identifiers shown in Table 3.

Table 3. Code Page Identifiers Supported by Integration Services for FSIO

Code Page Identifier	Description
437	IBM Personal Computer USA Code Page
850	IBM Personal Computer Multilingual Code Page
852	IBM Personal Computer 852 Code Page (this code page is the equivalent of ISO 8859-2)
857	IBM Personal Computer Turkey Code Page (this code page is the equivalent of ISO 8859-5)
860	IBM Personal Computer Portugal Code Page 860
861	IBM Personal Computer Iceland Code Page 861
862	IBM Personal Computer Israel Code Page 862
863	IBM Personal Computer Canadian French Code Page 863
864	IBM Personal Computer Arabic Code Page 864
865	IBM Personal Computer Nordic Code Page 865
866	IBM Personal Computer Russian Code Page 866
874	IBM Personal Computer Data Thailand with extended.
932	Japanese Personal Computer mixed-byte ASCII. This is equivalent to the combination of single-byte coded character set code page 897 and double-byte coded character set code page 301. For the AS/400 system, this combination is handled as a CCSID. The equivalent CCSID is CCSID 932.
934	Korean Personal Computer mixed-byte ASCII. This is equivalent to the combination of single-byte coded character set code page 891 and double-byte coded character set code page 926. For the AS/400 system, this combination is handled as a CCSID. The equivalent CCSID is CCSID 934.
938	Chinese Personal Computer mixed-byte ASCII. This is equivalent to the combination of single-byte coded character set code page 904 and double-byte coded character set code page 927. For the AS/400 system, this combination is handled as a CCSID. The equivalent CCSID is CCSID 938.
942	Japanese Personal Computer Extended mixed-byte ASCII. This is equivalent to the combination of single-byte coded character set code page 1041 and double-byte coded character set code page 301. For the AS/400 system, this combination is handled as a CCSID. The equivalent CCSID is CCSID 942.

Table 3. Code Page Identifiers Supported by Integration Services for FSIOP (continued)

Code Page Identifier	Description
944	Korean Personal Computer Extended mixed-byte ASCII. This is equivalent to the combination of single-byte coded character set code page 1040 and double-byte coded character set code page 926. For the AS/400 system, this combination is handled as a CCSID. The equivalent CCSID is CCSID 944.
948	Chinese Personal Computer Extended mixed-byte ASCII. This is equivalent to the combination of single-byte coded character set code page 1043 and double-byte coded character set code page 927. For the AS/400 system, this combination is handled as a CCSID. The equivalent CCSID is CCSID 948.
949	IBM KS Code (Korean) Personal Computer Data mixed
950	IBM B5 Code Personal Computer Data mixed (Traditional Chinese)
1381	IBM GB Code Personal Computer Data mixed (Simplified Chinese)

Integration Services for FSIOP Country Codes

Integration Services for FSIOP supports the country codes shown in Table 4.

Each language is specified as a language group, such as single-byte character set (SBCS), bi-directional (BIDI), or double-byte character set (DBCS). It is important to determine what language group you plan to use because certain country codes and code pages are only supported for certain language groups. If you specify a language that is either SBCS or BIDI, you can use other SBCS and BIDI languages with it. If you specify a language that is DBCS, you can use any other language with it.

Table 4. Country Codes Supported by Integration Services for FSIOP

Language	Country Code	Code Page Identifiers Supported	Language Group
Arabic	785	437, 850, 864	BIDI
Belgium	032	437, 850	SBCS
Brazilian	055	437, 850	SBCS
Canadian French	002	850, 863	SBCS
Chinese	088	938, 948, 950, 1381	DBCS
Czech	042	850, 852	SBCS
Danish	045	850, 865	SBCS
English US	001	437, 850	SBCS
English UK	044	437, 850	SBCS
Finnish	358	437, 850	SBCS
French	033	437, 850	SBCS
German	049	437, 850	SBCS
Hebrew	972	437, 850, 862	BIDI
Hungarian	036	850, 852	SBCS
Icelandic	354	850, 861	SBCS

Table 4. Country Codes Supported by Integration Services for FSIOIP (continued)

Language	Country Code	Code Page Identifiers Supported	Language Group
Italian	039	437, 850	SBCS
Japanese	081	437, 850, 932, 942	DBCS
Korean	082	437, 850, 934, 944, 949	DBCS
Netherlands Dutch	031	437, 850	SBCS
Norwegian	047	850, 865	SBCS
Polish	048	850, 852	SBCS
Portuguese	351	850, 860	SBCS
Russian	007	850, 866, 915	SBCS
Spanish	034	437, 850	SBCS
Swedish	046	437, 850, 865	SBCS
Thai	044	437, 850, 874	SBCS
Turkish	090	850, 857	SBCS

Notices

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This publication is intended to help you to install, configure, and manage your Integrated Netfinity Servers. This publication documents General-Use Programming Interface and Associated Guidance Information provided by Integration Services for FSIOP.

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Bibliography

The IBM publications listed here provide additional information about topics described or referred to in this book.

Information Sources for Licensed Programs Running on an Integrated Netfinity Server for AS/400

1. For information about installing and using the IBM Firewall for AS/400 product on an Integrated Netfinity Server, refer to the the AS/400 Information Center on CD-ROM or online at <http://www.as400.ibm.com/infocenter>. You will find these topics under the Security heading in System Administration, Availability, and Maintenance: "Firewall: Getting Started" and "Firewall: Advanced Topics".
2. For information about installing and using AS/400 Integration for Windows Server on an Integrated Netfinity Server, refer to the AS/400 Information Center on CD-ROM or online at <http://www.as400.ibm.com/infocenter>. Look for Windows server on AS/400 under the heading Network Operating Systems.

AS/400 Communications Information

- *LAN, Frame-Relay and ATM Support*, SC41-5404-01, describes the AS/400 support for distributed data interface (DDI), and wireless local area networks. This book includes information about bridged local area networks and the use of frame relay networks for connection to remote local area networks.
- You can find information about IBM Token-Ring, Ethernet, and frame relay wide area networks in the AS/400 Information Center. Expand the Networking heading, and look for the Network Hardware Interfaces topic. You can access the Information Center either on CD-ROM or at <http://www.as400.ibm.com/infocenter>.
- The Information Center also provides information for configuring TCP/IP support and applications. The applications included are

TELNET, File Transfer Protocol (FTP), Simple Mail Transfer Protocol (SMTP), line printer requester (LPR), and line printer daemon (LPD). You can access the Information Center either on CD-ROM or at

<http://www.as400.ibm.com/infocenter>. Expand Networking, then TCP/IP, and look for the TCP/IP Services and Applications topic.

- Some additional TCP/IP information remains in *TCP/IP Configuration and Reference*, SC41-5420-03.
- The Information Center topic TCP/IP configuration fastpath describes how to set up and use TCP/IP on AS/400. Simplified installation and configuration scenarios illustrate the basics needed to use TCP/IP.

Other AS/400 Information

- *Backup and Recovery*, SC41-5304-04, provides information about restoring your AS/400 system and recovering from system failures.
- Information about planning a backup strategy and backing up your system is available in the Information Center. You can access the Information Center either on CD-ROM or at <http://www.as400.ibm.com/infocenter>. Refer to the Backup, Recovery, and Availability topic under the System Administration, Availability, and Maintenance heading.
- *CL Programming*, SC41-5721-03 provides an overview of CL programming topics, including information about built-in functions and system-supplied programs that can be used by CL programs, program debugging, and how to create and use user-defined messages and commands.
- The Information Center provides information about OS/400 commands.
- The Information Center provides information about the structures, use, and management of the AS/400 database.
- *System Operation*, SC41-4203-00, provides information on starting and stopping the system, using commands, and solving problems.

- The Information Center provides information about planning, setting up, managing, and auditing security.
- *Work Management*, SC41-5306-03, provides information about creating and using subsystems.

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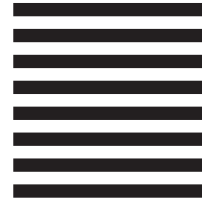
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