FAXCOM Server
Administrator's Guide

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Figures

Getting Started

If you are building your own FAXCOM Server, start with Chapter One, skip Chapter Two, and continue with Chapter Three.

If you have received a pre-built system from Biscom, skip Chapter One, start with Chapter Two, and continue with Chapter Three.

Once you have completed the steps in Chapter Three, you have done what is necessary to implement a fully functioning system that sends and receives faxes. The remaining chapters provide a reference to the full capabilities of the system, which you can then implement as appropriate to the needs of your site.

This guide has the following organization:

Chapter One – Build the FAXCOM Server – explains how to create a FAXCOM Server yourself (by building the server platform, installing the appropriate Dialogic Brooktrout board(s) and installing the FAXCOM Server software from CD).

Chapter Two – Get Started with a Pre-built FAXCOM Server – describes how to login to a system pre-built at Biscom and specify its IP address.

Chapter Three – Perform the Basic Configuration and Send a Test Fax – explains how to quickly get the system up-and-running, by configuring the connection of the fax ports to your telephone network, sending a test fax to verify successful connection, and understanding the routing of incoming faxes to your front-end FAXCOM fax service (either FAXCOM Suite for Windows or FAXCOM for Domino).

Chapter Four – Configure Full Capabilities of the FAXCOM Server – gives an overview of all capabilities of the system, and how you can configure these capabilities within the FAXCOM Server Administrator program.

Chapter Five – Manage and Monitor the FAXCOM Server – provides an overview of the basic tasks you perform with the FAXCOM Server Administrator program in order to monitor the operations of the FAXCOM Server

Chapter Six – Install and Use Qdoctor – explains the procedures for installing and using Qdoctor, the utility that enables access to a log of faxes "quarantined" on the FAXCOM Server as possible Spam faxes.

Appendix A – Status Codes and Explanations – lists and explains the status messages (i.e., successful completion message and error messages) returned by the FAXCOM Server.

Appendix B – Configure Advanced Settings – describes some advanced features you can implement by working directly within the configuration files. There are three advanced configuration files – one for fax ports, one for host ports/sessions, and one for server settings.

Appendix C – Use the FAXCOM Control Utility – describes how to use the FAXCOM Control utility, a command line utility with which you can control certain functions of the FAXCOM Server.

Appendix D – Dialogic Brooktrout Fax Board Fax Driver Parameters – explains several Brooktrout fax board device driver parameters you may have to change to implement certain capabilities you require.

Appendix E – Supported Dialogic Brooktrout Fax Boards – lists the supported Brooktrout fax boards.

Appendix F – Install Translation Server Applications – gives instructions for installing Adobe Acrobat and the MS Office suite according to the needs of the Translation Server component

Appendix G – Implement the Dialogic Brooktrout SR140 Virtual Fax Board – lists the steps for implementing this software-only host-based fax-over-IP platform

Chapter One: Build the FAXCOM Server

Step 1: Build the Server Platform

You build the server platform by doing the following:

- Confirm the system meets these basic requirements:
    - Pentium® 4 system
    - 2 GB RAM
    - 36 Gigabyte available space

Note: If your FAXCOM Server has more than 48 ports and is also running the Translation Server function, Biscom recommends going beyond these basic requirements and using a Xeon processor-based system with additional RAM.

    - Either Windows 2008 R2 or 2003 SP2 – with NTFS file system

Note: Refer to the "Configure the Firewall to Open Ports on the FAXCOM Server" section immediately below to determine if the Operating System (OS) configuration you are running requires you to configure the Firewall to open ports on the FAXCOM Server.

- Internet Explorer 6.0 or higher
- Supported fax board, as listed in Appendix E

Note: You may also be using a FAXCOM Server with the Dialogic Brooktrout SR140 virtual fax board. In that case, refer to Appendix G for implementing this software-only solution on a FAXCOM Server.

- Confirm SNMP is installed (for use in generating alarms based on server status)
- ***If you are running the Translation Server function***, install the Windows applications you want automatically to translate. The supported applications are: MS Word, MS Excel, MS PowerPoint, MS Project, MS Access Snapshot files, MS Publisher, the Lotus suite, WordPerfect, Visio, Adobe Acrobat, and HTML documents.

Notes: The Translation Server function also translates Web Page HTML documents, using the Internet Explorer application already installed.

Refer to Appendix F for instructions on installing Adobe Acrobat and MS Office according to the requirements of the Translation Server.

Refer to the "Step 9: Install a Microsoft Hot Fix or Upgrade to a Higher Service Pack" section later in this chapter for more information on why Biscom requires specific OS versions on a FAXCOM Server performing MS Word document translations.

Configure the Firewall to Open Ports on the FAXCOM Server

If you have enabled Firewall on your FAXCOM Server, you must do the following to configure the Firewall to open ports on the FAXCOM Server.

In the vast majority of cases, the only TCP Port on the FAXCOM Server you need to open is 6001, used to communicate with the FAXCOM Queue(s). The following table, however, lists all ports likely to be used.

TCP PORT INFORMATION USED BY THE FAXCOM SERVER	
Host Port Name	**Default TCP Port Number**
TRAN Port (used to communicate with FAXCOM Queues)	6001
SMTP Host Port	25
TCP Host Port	6000, 6002-6005

Do the following to configure the Firewall:

1. Click *Start…Run.*

- In the Open box, type **netsh** to display a command prompt window.
- Type **`firewall`**.
- Type **`add portopening TCP`** <***`Port number to be allowed through the firewall`***> <***`name`***>

  as, for example, **`add portopening TCP 6001 FaxTran`**
- Repeat Step 4 until all needed FAXCOM host ports are opened; type **`Exit`**.

Consideration for Running Antivirus Scan Software on the FAXCOM Server

Assuming that you want to protect your FAXCOM Server from viruses and malicious code, be aware of the following important consideration for running antivirus scan software:

Exclude the FAXCOM Server's u directory (and all subdirectories) when running a real-time scan. It is recommended that you run only a scheduled antivirus scan of

the u directory. If you have installed a front-end Biscom product – such as FAXCOM Suite for Windows or FAXCOM for Domino – exclude the bisfax directory as well when running a real-time scan. Run only a scheduled antivirus scan of the bisfax directory.

In addition, if you are using Office 2007 on the FAXCOM Server to translate native files, you must exclude the following directory from real-time virus scanning: C:|Documents and Settings|Default User|Application Data|Microsoft|Office|Recent.

Step 2: Install the Appropriate Dialogic Brooktrout Fax Board

Refer to the Dialogic documentation to install the fax boards according to the board type and phone line requirements. **DO NOT INSTALL THE FAX BOARD DRIVERS**. If you have already installed the fax board drivers, remove them according to the instructions from Dialogic.

Note: Appendix E lists the supported Dialogic Brooktrout boards.

If using Direct Inward Dial (DID) lines, connect the DID power supply and cable to the DID board.

Set the Module Number of the TR1034 Board

Set each board to a unique module number to easily identify the resources associated with a specific board in a multi-board system.

Use the SW-1 rotary switch (Figure 1-2) to set a unique module number for each Dialogic Brooktrout board. Select a number from 2-F on the rotary switch. *Settings 0 and 1 are reserved and cannot be used.*

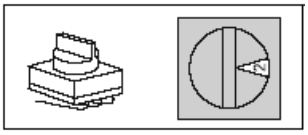


Figure 1-1. SW-1 Rotary Switch

In a multi-board installation, for example, set the boards as follows:

Board	Module Number
First installed board	2
Second installed board	3
Third installed board	4
Fourth installed board	5

Step 3: Physically Connect to the Telephone Network

Connecting the FAXCOM Server to the telephone network varies in complexity according to which of the following supported interfaces are used:

- Loop-start or DID individual analog lines
- TI- 24-channel E&M digital lines
- PRI - 23-channel Primary Rate ISDN digital lines
- E1 - 30-channel Euro ISDN digital lines

Notes: If necessary, refer to Appendix E for for a list of the supported fax boards and the telephone interfaces they support.

Step 4: Power On the System, Login, and Cancel the Hardware Wizard

When you power on your system and login, the Found New Hardware Wizard may automatically be displayed to help you install fax board driver software for the PCI fax board you just installed. Since the fax board driver software will be installed for you when you continue and install the FAXCOM software, you do **not** want the Wizard to help you install drivers. Do the following, therefore, to exit the Wizard:

- When the Welcome to the Found New Hardware Wizard screen (Figure 1-2) is displayed, click **Cancel** to exit the wizard.

Figure 1-2. Found New Hardware Wizard

Step 5: Have Available the Following Information

Before running the installation, you should have available the following general information:

- Whether you are using a physical fax board or the SR 140 virtual fax board
- Whether the physical fax board is a TR1034 or a TRUFAX board
- Whether the TR1034 board is Digital, Analog/DID, or BRI
- Whether the TRUFAX board is BRI
- If using digital lines (i.e., T1/E1/PRI/T38), the number of digital lines

Note: Biscom – as does Dialogic – strongly recommends use of a Channel Service Unit (CSU) for T-1 installations connecting directly (not through a PBX) to the phone company. For a fuller explanation of the functions provided by a CSU, refer to the Dialogic Knowledgebase Article #1146.

The following sections detail the specific information – according to telephone line type – for which you will be prompted:

T1 Parameters

- Number of boards
- Size of boards (i.e., number of ports)
- Whether the T1 signaling protocol is the default of robbed-bit E and M Wink or robbed-bit E and M Immediate
- Whether the framing is the default of Extended Superframe (ESF) or Superframe (SF)
- Whether the line coding is the default of B8ZS or AMI

PRI Parameters

- Number of boards
- Size of boards (i.e., number of ports)
- Whether the switch type is the default of AT&T #4 ESS or one of the following: AT&T #5 ESS, Nortel DMS 250, Nortel DMS 100

E1 Parameters

- Number of boards
- Size of boards (i.e., number of ports)
- Whether the ISDN variant is the default of Euro ISDN or Q.931

T.38 Parameters

Note: Be aware that Dialogic requires that any Cisco router you are deploying be running Cisco IOS version 12.3 (7) or higher of the Cisco Internet Operating System (IOS).

- Number of boards (=1)
- Size of boards (i.e., number of ports)
- T.38 SIP Gateway IP address (of the Cisco router)
- TR1034 board IP address
- TR1034 board subnet mask

Note: Be aware that the TR1034 board IP address and subnet mask are in addition to the IP address and subnet mask of the FAXCOM Server Network Interface Card (NIC) itself.

Step 6: Install the FAXCOM Server Software

Do the following to install the FAXCOM Mailbox Server:

If Installing from a CD:

1. Insert the FAXCOM Server CD into a CD-ROM drive. The installation program should automatically start for you. If it does not, run Setup.exe.

Or

If Installing from a Biscom Delivery Server (BDS) Package Download:

2. On the machine where you will install FAXCOM Server, use an unzip utility to unzip the FAXCOM Server 6.*x.x.xx* zip file and extract the archived files. Run Setup.exe.

Note: If you receive a Windows Installer message stating "Error opening installation log file. Verify that the specified log file location exists and is writable," right-click the setup.exe file and select "Run as Administrator."

3. Accept the license agreement and click **Next** to display the Customer Information screen (Figure 1-3).

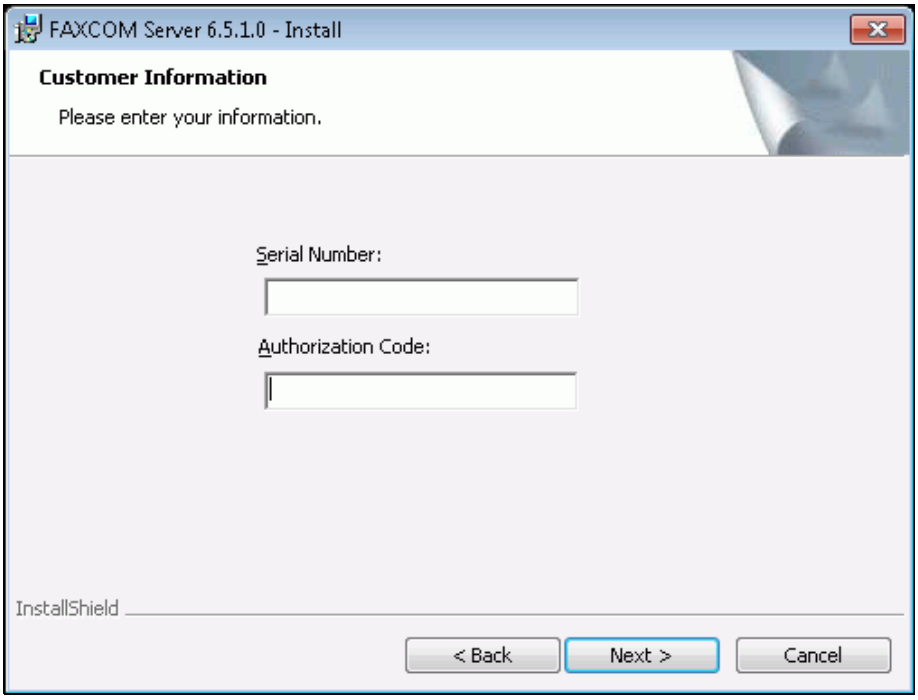


Figure 1-3. Customer Information Screen

4. Supply the information provided to you by Biscom (on the *Base License Information* sheet), and click **Next** to display the Custom Setup screen (Figure 1-4).

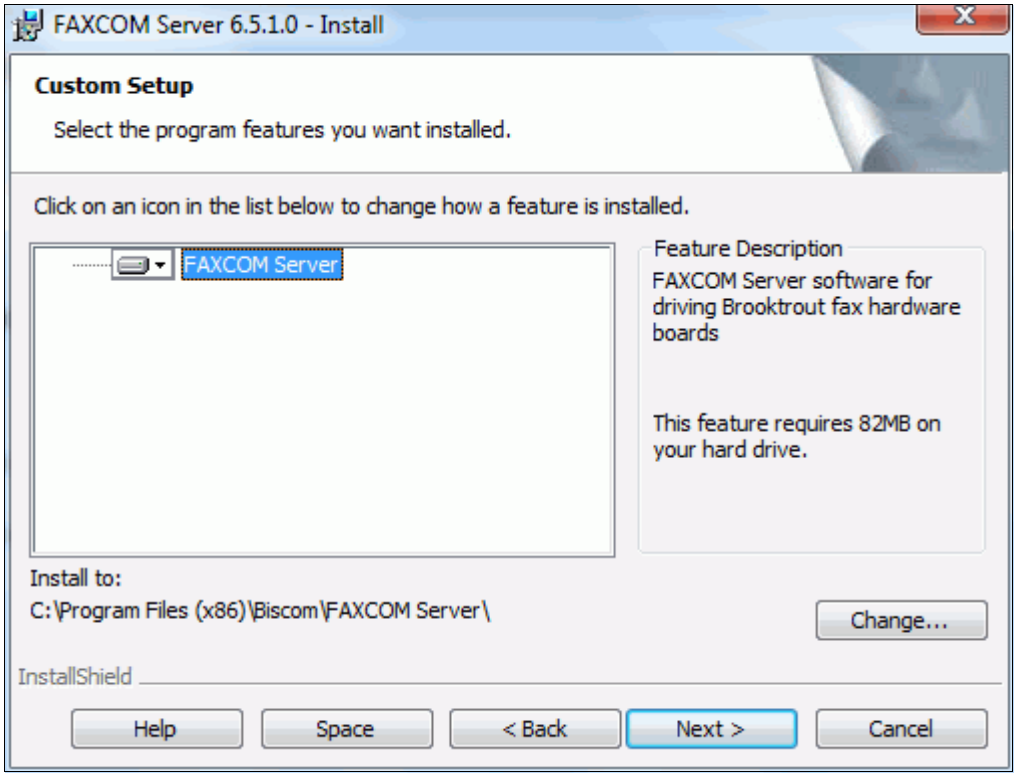


Figure 1-4. Custom Setup Screen

5. Either accept the default destination location or click the **Change** button, specify an alternate drive location, and click **OK**. Click **Next** to display the Fax Board Hardware Type screen (Figure 1-5).

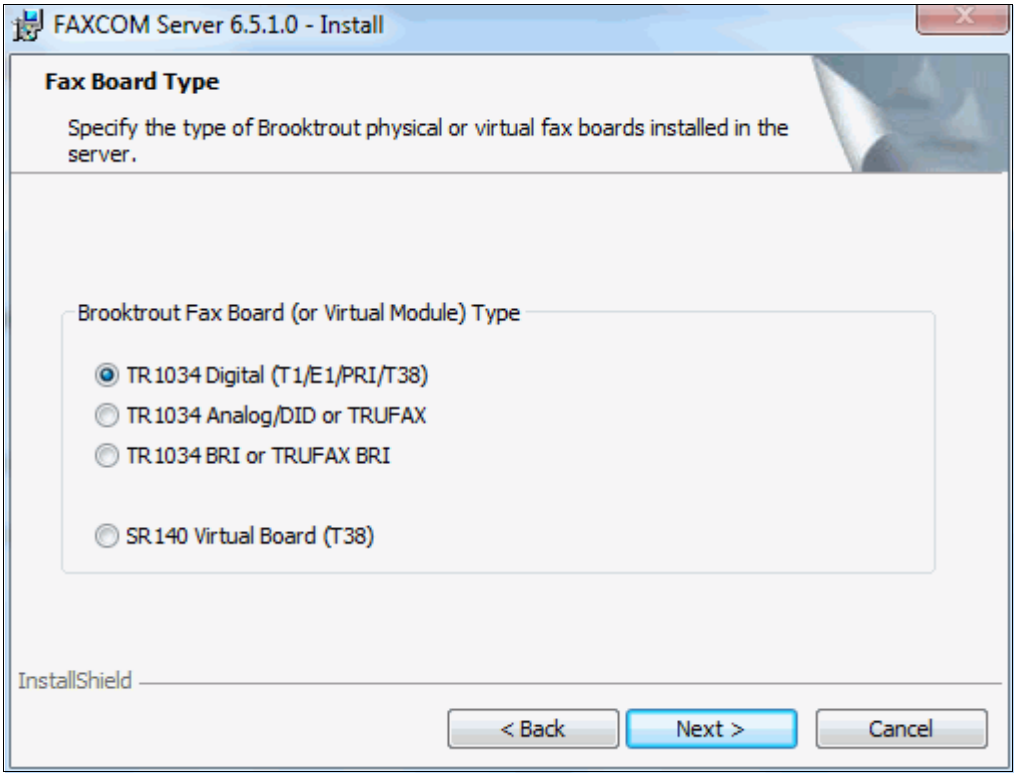


Figure 1-5. Fax Board Hardware Type Screen

6. Make the appropriate selection and click **Next**. With some selections, the Ready to Install screen (Figure 1-6) is displayed.

   For other selections, a subsequent screen may be displayed, prompting you for more information – as listed in the "Step 5: Have Available the Following Information" section immediately above. Supply the appropriate information and click **Next** to display the Ready to Install screen (Figure 1-6).

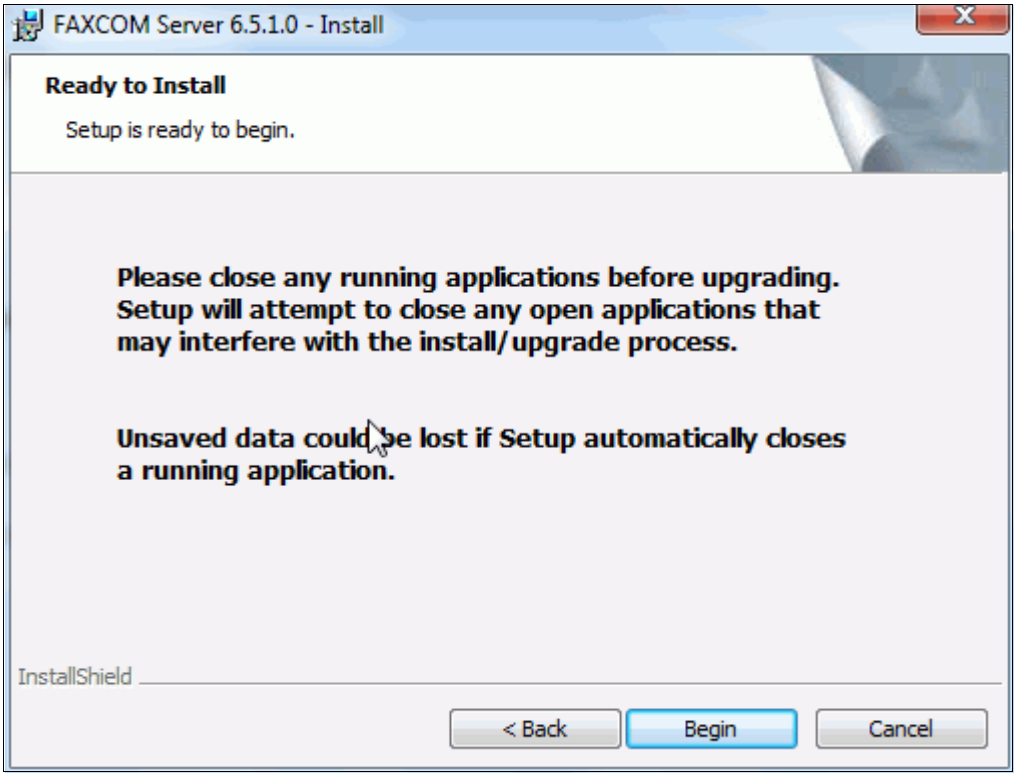


Figure 1-6. Ready to Install Screen

7. Click **Begin** to copy the files, and then display the Welcome to the FAXCOM Server Configuration Wizard screen (Figure 1-8).

   If a prompt is displayed (as shown in Figure 1-7), asking you whether to increase the number of ports according to your license, click ***Yes*** to continue and display the Welcome to the FAXCOM Server Configuration Wizard screen (Figure 1-10).

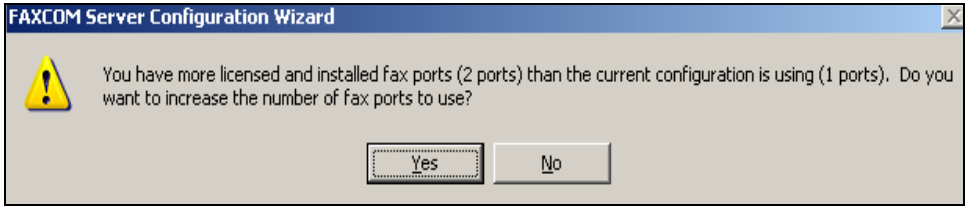


Figure 1-7. Configuration Wizard Prompt

Note: If it appears that the installation is not completing and displaying the Configuration Wizard, it may be that the Configuration Wizard window is hidden behind other windows. In that case, simply click the Configuration Wizard icon (which is next to the Installation program icon) in the Status bar

to display the wizard and complete the installation.

Figure 1-8. Welcome to the FAXCOM Server Configuration Wizard Screen

Step 7: Run the Configuration Wizard to Accept the Defaults

Do the following to run the Configuration Wizard, accept the configuration defaults and then exit the Configuration Wizard. (Once the installation completes and you have successfully set up FAXCOM Server, you can always run the FAXCOM Server Administrator program to change any configuration settings.)

1. On the Welcome to the FAXCOM Server Configuration Wizard screen (Figure 1-8), click **Next** to display the Configure FAXCOM Server dialog (Figure 1-9).

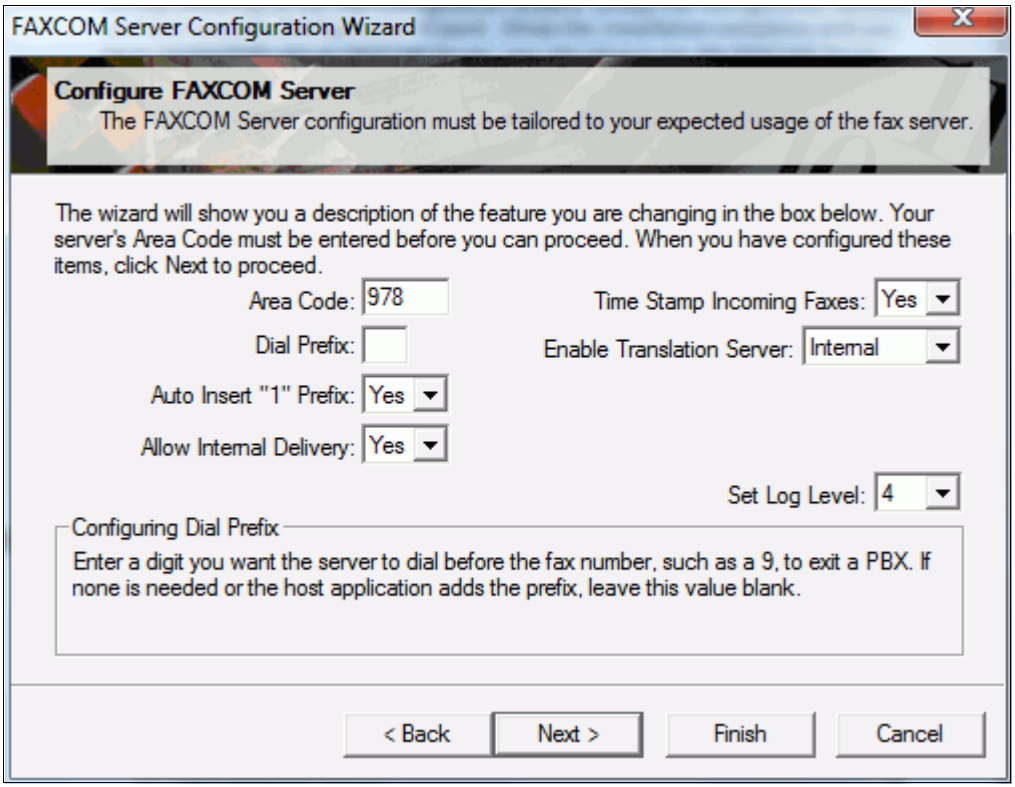


Figure 1-9. Configuration Wizard Configure FAXCOM Server Dialog

2. Click **Finish** to exit the wizard and complete the installation.

Step 8: Apply any Available Hotfixes

If your product CD includes a HOTFIX folder, do the following to upgrade your FAXCOM server software with the latest improvements.

1. Copy the HOTFIX folder to the hard drive where you installed the FAXCOM software.
2. Make sure the FAXCOM Server Administrator program is closed.
3. Open the HOTFIX folder on the hard drive.
4. Double-click the hotfix.cmd icon. A command window opens, and as the HOTFIX installation runs, the screen is updated as to the operation taking place and at certain intervals you are prompted to "Press any key to continue."

5. When so prompted, press any key to continue until the HOTFIX installation is complete and you are returned to the folder listing.
6. Remove the CD. The FAXCOM service is automatically started for you.

Step 9: Install a Microsoft Hot Fix or Upgrade to a Higher Service Pack

An instability in MS Windows 2000 SP4, XP, and 2003 occurs after the translation of thousands of Word documents.

To deal with the instability problem in MS Windows 2000 SP4, Microsoft has published Knowledge Base article, 826518. To access the article and obtain the hot fix, go to http://support.Microsoft.com/?id=826518 and follow the instructions for contacting Microsoft to obtain the hot fix.

To deal with the instability problem in Microsoft XP, you must install SP2.

To deal with the instability problem in Microsoft Windows 2003, you must install SP1.

Step 10: Create a New User Account with which the FAXCOM Server Service Will Run

If you will be using the Translation Server function to translate native file fax attachments, use the information in this section to create a new user account with which the FAXCOM Server service will run (in the event you choose not to use an existing user account for the purpose.)

Note: Be aware that the user account you create must be a Local Admin and have rights to any network resources to which faxes will be routed, such as printers or UNC paths not on the local system.

1. Select *Start…Settings…Control Panel…Administrative Tools…Computer Management*. Expand *Local Users and Groups* and select *Users* (as shown in Figure 1-10).

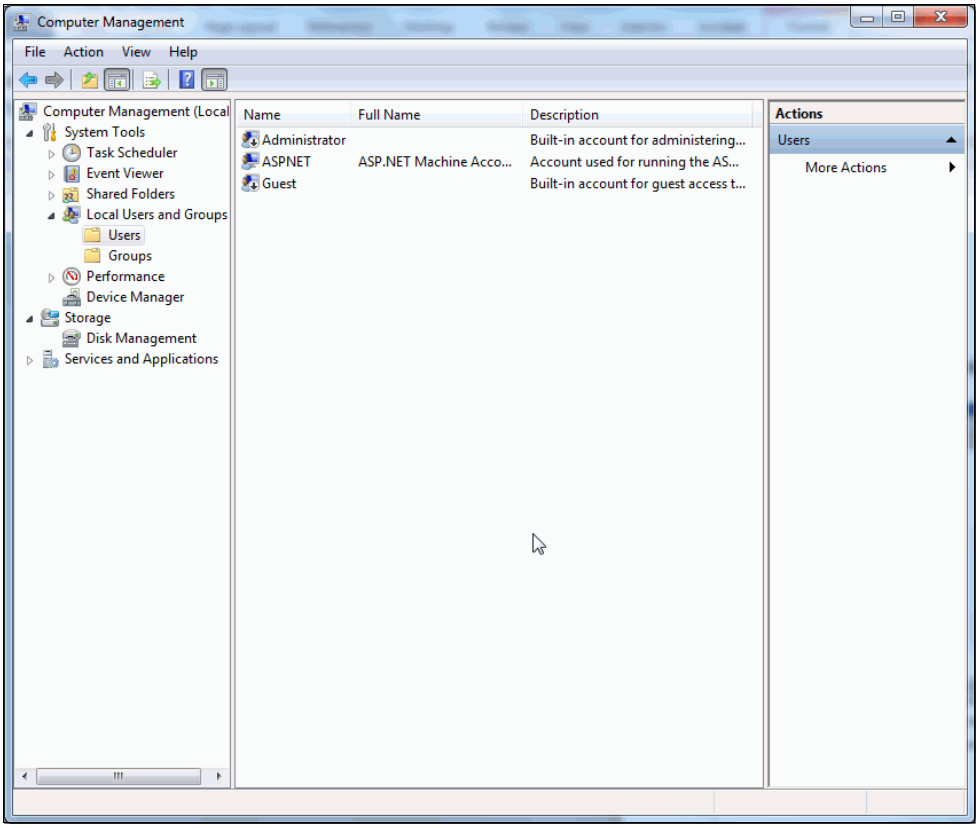


Figure 1-10. Computer Management Local Users and Groups…Users

2. Right-click *Users* and select *New User…* to display the New User dialog (Figure 1-11).

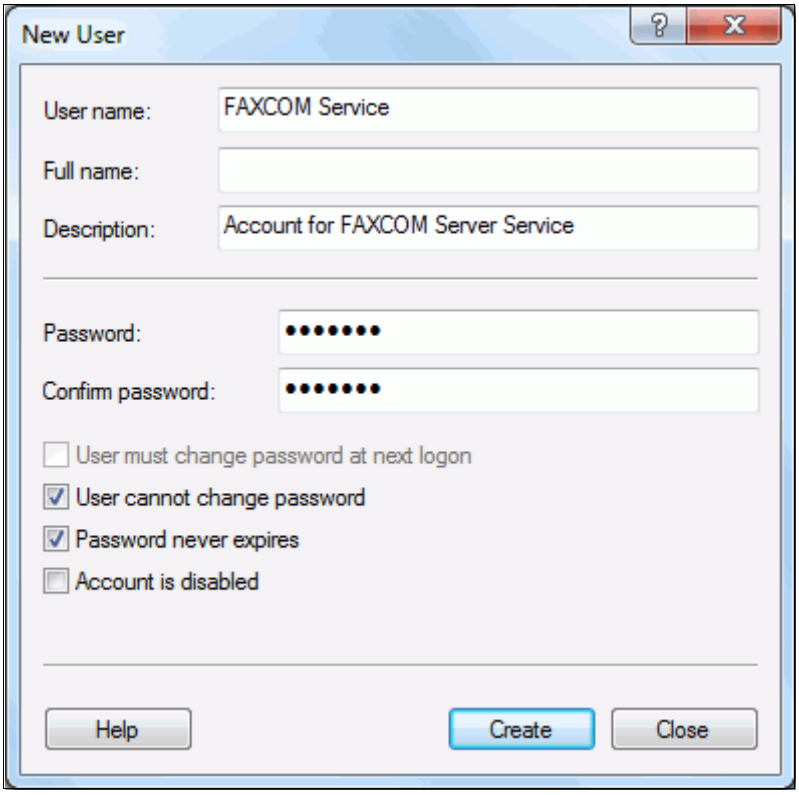


Figure 1-11. New User Dialog

3. As shown in the example in Figure 1-13, specify a User name and Description; make sure to select (check) the **User cannot change password** and **Password never expires** checkboxes; click **Create**; click **Close**.
4. When returned to Computer Management, select the newly-created user and select **Properties** from the shortcut menu. Select the **Member of** tab and click the **Add...** button to display the Select Groups dialog. Type in *Administrators* and click **OK**.
5. When returned to Computer Management, select *Services and Applications...Services*. Double-click the ***FAXCOM Server*** service to display its **Properties**.
6. Select the **Log On** tab (Figure 1-12).

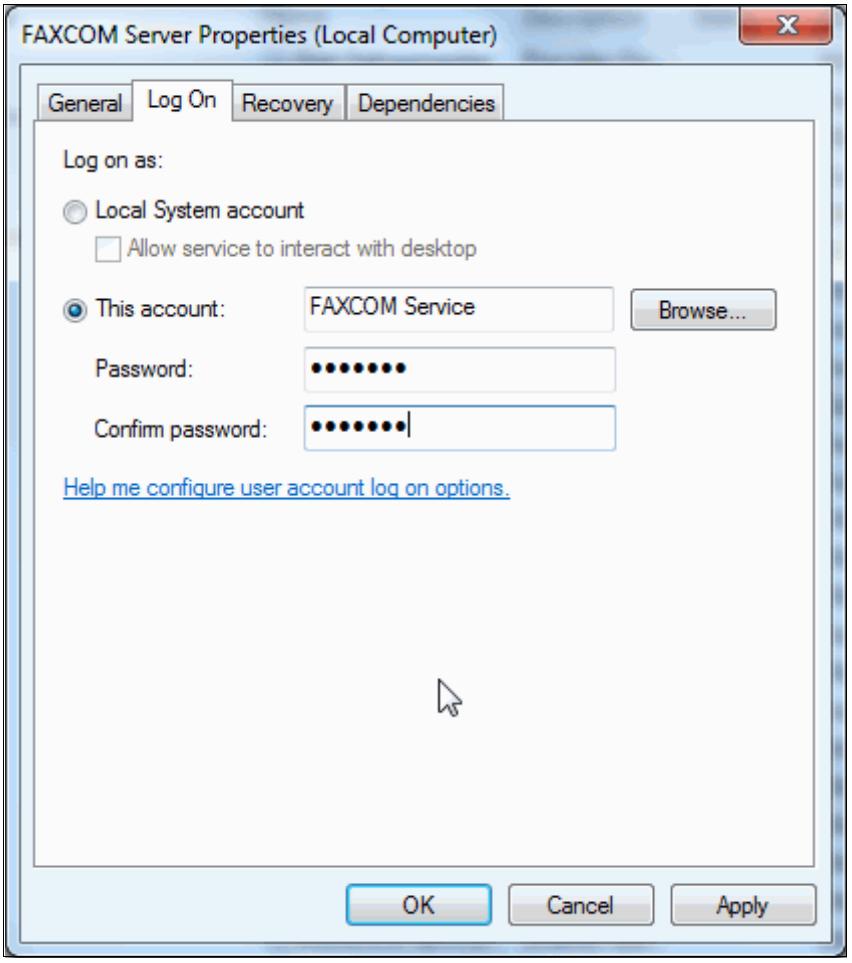


Figure 1-12. Log On Tab

7. In the *Log on as* section, select the **This account** radio button. Click the **Browse...** button to select the user account you created for the FAXCOM Service (in step 3 above). Enter the Password in the *Password* field, confirm the Password and click **OK**. You have now configured the FAXCOM Server service to run as the user account you created.

Step 11: Continue with the Steps in Chapter Three

Once you have completed steps 1 through 10, you are ready to continue with Chapter 3 and do the only configuration necessary to be up-and-running. Skip Chapter Two, as it pertains only to FAXCOM Servers pre-built at Biscom.

Chapter Two: Get Started with a Pre-built FAXCOM Server

When your FAXCOM Server is built, configured and tested at Biscom, you only have to perform the following preliminary steps before doing the minimal configuration required to be up-and-running:

- Physically connect to the telephone network
- Login to the server
- Change the IP address
- Change the Biscom-established user account configuration

Note: The information included in Chapter One does NOT apply to FAXCOM Servers pre-built at Biscom, and you can skip that chapter.

Physically Connect to the Telephone Network

Connecting the FAXCOM Server to the telephone network varies in complexity according to which of the following supported interfaces are used:

- Loop-start or DID individual analog lines
- TI- 24-channel E&M digital lines
- PRI – 23-channel Primary Rate ISDN digital lines
- E1 – 30-channel Euro ISDN digital lines

Note: If necessary, refer to Appendix E for for a list of the supported fax boards and the telephone interfaces they support.

Change the Biscom-Established User Account Configuration

With Office 2003, SP2, the FAXCOM Server service must run as a user, and beginning January 2006, all turnkey FAXCOM Servers created at Biscom will be configured accordingly.

Use the information in this section in order to change the Biscom-established user account configuration to a user account configuration unique to your site.

Biscom-Established Information:

The FAXCOM Server service has been configured at Biscom to run as a user called ***FAXCOMService***, with a password set to ***hello5***. As appropriate, either change the password for the *FAXCOMService* user account, or delete the ***FAXCOMService*** user account entirely, in order to run as a user account of your own choosing.

Note: Be aware that when you change the password, you must change it** both **for the user account with which the service runs and for the FAXCOM Server service itself. In addition, the user account you choose must be a Local Admin and have rights to any network resources to which faxes will be routed, such as printers or UNC paths not on the local system.

Login to the FAXCOM Server

Biscom ships a pre-built FAXCOM Server with a login account, as follows:

User Name: **`administrator`**

Password: **`hello5`**

You can select *Start…Control Panel…Administrative Tools* to specify different values for the Login Account and Password – so long as the Login Account has Administrator rights to the local machine.

Note: Be aware that systems running on Windows 2008 (only) require a longer password, which is** BiscomHello5**.

To login to the server, do the following:

1. After powering up the server, when prompted, press **Ctrl-Alt-Del**.
2. Enter the login name and corresponding password to display the desktop.

Change the IP Address

If you received a FAXCOM Server built at Biscom, Biscom sets an IP address of 128.1.1.2 for testing purposes, which you must change for your particular site. You change the IP address as follows:

Windows 2000/2003:

1. Select *Start…Settings…Control Panel…Network and Dial-up Connections…Local Area Connection…Properties…Internet Protocol (TCP/IP)…Properties*.
2. Enter the appropriate information and click **OK**.

Windows 2008:

1. Select *Start…Network…Network Sharing Center…Change Adapter Setting…Local Area Connection…Properties…Internet Protocol Version 4…Properties*.
2. Enter the appropriate information and click **OK**.

Understand the Default Configuration

When FAXCOM Server is shipped to you with the software pre-installed, a basic fax port/host port default configuration is established. You need only change the pre-configured IP address (as described immediately above) for your specific location to be up and running with the default configuration.

Fax Port Default Configuration

Direct Inward Dial (DID) Lines

Fax ports connected to DID lines are set to *Receive Only* (and **must** be set to *Receive* Only); all other fax ports are set to *Transmit Only*.

Non-DID Loop Start Lines

Fax ports are set to *Transmit/Receive* (unless otherwise requested).

Host Port Default Configuration

While all FAXCOM Server models support 6 host ports, only 2 are configured for you, with only *host1* enabled, meaning all incoming faxes can be automatically routed to host1. Host ports are set to the *TRAN* connection mode, with 6001 as the TCP Port Number – with the following exception: when used with the FAXCOM for NDS product, Host ports are set to the TRAN connection mode, with *BIS_RXSESS* specified as the Session Name and entered into the Inbound Routing tab (Figure 4-14).

Continue with the Steps in Chapter Three

You are now ready to peform the only configuration necessary to be up-and-running – as described in Chapter Three.

Chapter Three: Perform the Basic Configuration and Send a Test Fax

Note: Release 9.6 of the FAXCOM Suite for Windows MMC includes a snap in with which to remotely manage the FAXCOM Servers connected to the Suite environment. Release 5.5.13.70 or higher of the FAXCOM Server is required in order to use the FAXCOM Suite for Windows MMC for remote server management. Releases 5.5.13.70 and higher include the FAXCOM Data Manager service, which runs on each FAXCOM Server to support remote MMC management.

Although there are many capabilities of the FAXCOM Server that you can implement through configuration settings specified/selected via the FAXCOM Server Administrator program (and described in Chapter Four), you have to do only the following to quickly be up-and-running:

- Configure the fax ports
- Specify the number of digits to be detected for inbound routing
- Send a test fax to confirm successful installation
- Understand inbound routing to your front-end fax service
- ***If using the TR1034 fax board and unable to successfully send a test fax***, review the TR1034 configuration settings (as described later in this chapter), and, if necessary, reconfigure the TR1034 board
- ***If using the SR140 virtual fax board and unable to successfully send a test fax***, review the SR140 configuration settings (as described later in this chapter), and, if necessary, reconfigure the SR140 settings

Run the FAXCOM Server Administrator Program

To run the FAXCOM Server Administrator program, do the following:

- Select *Start…Programs…FAXCOM…FAXCOM Server Administrator*.

  When the FAXCOM Server Administrator program opens, a set of three windows is displayed on the FAXCOM desktop – the Job Statistics, Tasks, and Fax Ports windows.

  You can resize the windows, maximize them, close them or re-open them by clicking the **Window** menu and selecting the window you want to view.

Configure the Fax Ports

This section does not explain each of the fields you can configure on the Fax Ports tab, but only those fields you need to be concerned with to quickly get up-and-running. An explanation of all fields is included in Chapter Four.

Do the following to configure fax ports, the connections to the telephone lines:

1. Click the **Configure** toolbar button  and select the **Fax Ports** tab (Figure 3-1). (You can also select *Configure…Ports…Fax Ports* or *Configure…All Settings…Fax Ports*.)

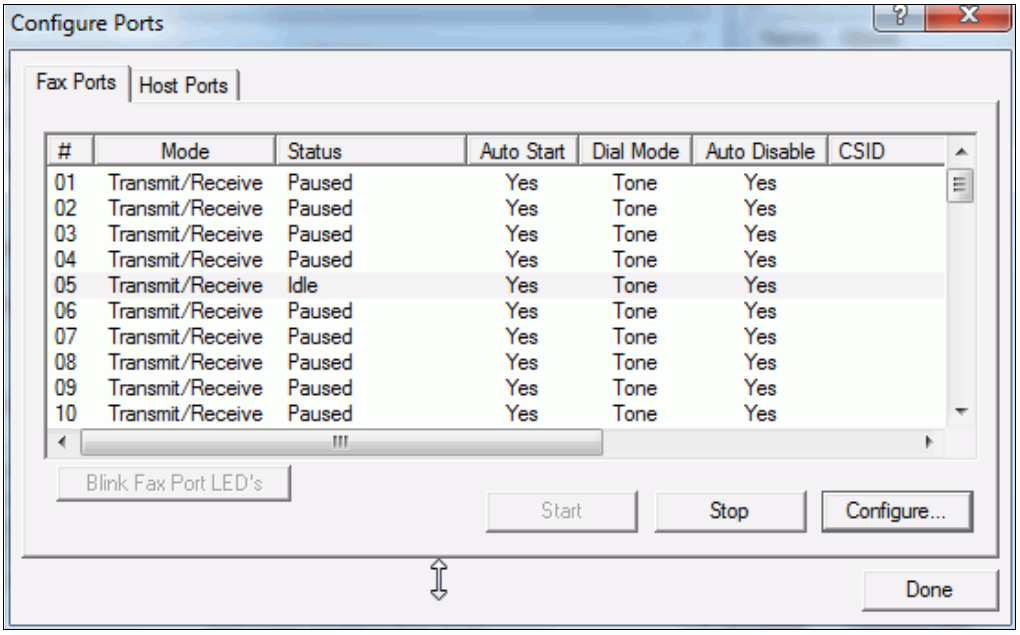


Figure 3-1. Configure Fax Ports Tab

2. To configure the port, highlight the port and click the **Configure** button to display the Fax Port dialog (Figure 3-2). (If the port is not stopped, you are prompted whether to stop the port since you cannot configure a port unless you first stop it. You can, however, view the configuration in read-only mode without stopping the port.)

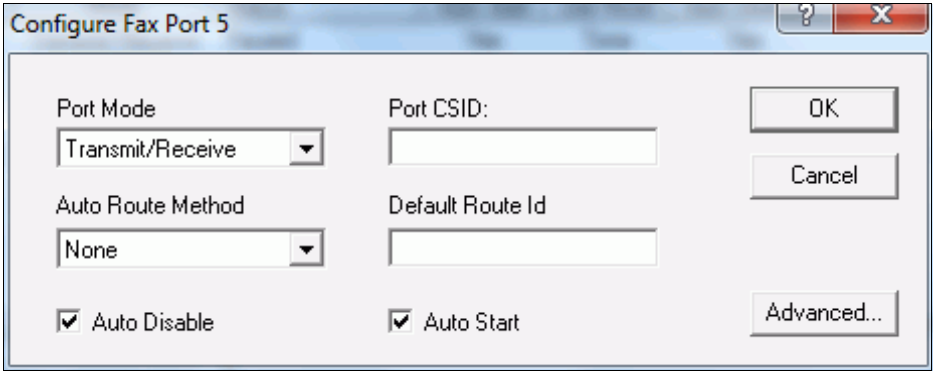


Figure 3-2. Fax Port Dialog

3. Specify the appropriate information as follows, clicking **OK** when done:

   Port Mode – either **Transmit/Receive** if both outbound and inbound fax traffic are to be handled over this port; **Transmit Only** if only outbound traffic is allowed, with no incoming calls answered; **Receive Only** if only inbound fax traffic is to be handled over this port, with no outbound fax jobs queued to the port.

Note: You MUST specify Receive Only when connecting the fax port to a DID trunk.

   Auto Route Method – set to **None** if no auto routing is configured; **DTMF** for DTMF routing; **DID** for DID routing. Refer to the "Configuring Inbound Routing" section later in this chapter for more information on routing incoming faxes.

Specify the Number of Digits to be Detected for Inbound Routing (if DID or TI/PRI/E1)

Do the following to specify the number of digits to be detected for inbound routing of received faxes. (If your FAXCOM Server was pre-built at Biscom, it is shipped with a default value of 4, which you may have to change.)

1. Click the Configure toolbar button  and select the Server Settings tab (Figure 3-3). (You can also select *Configure…Server Settings* or *Configure…All Settings…Server Settings*.)

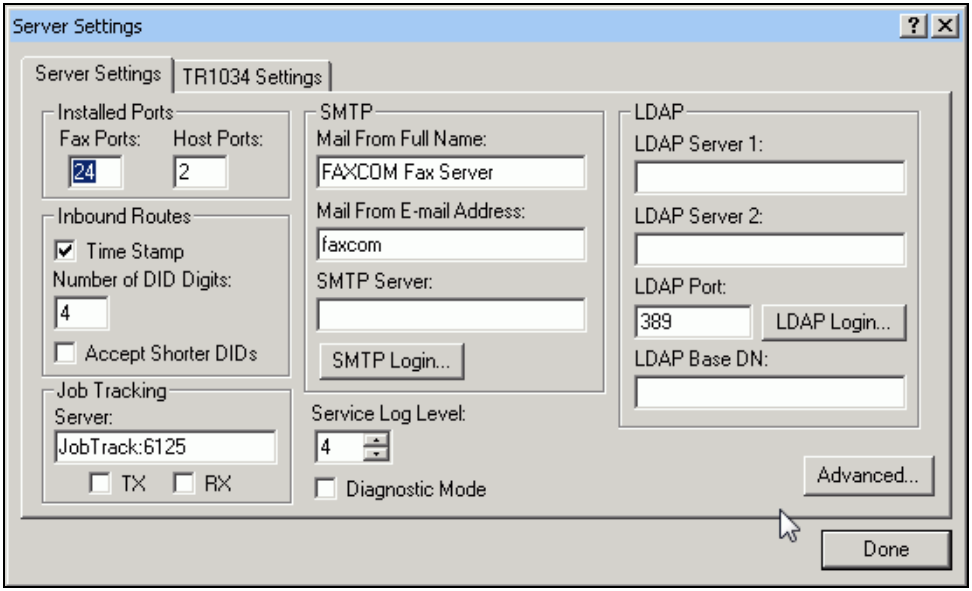


Figure 3-3. Server Settings Tab

2. In the *Inbound Routes Number of Digits box*, specify the appropriate number of digits. Click **Done**.

Send a Test Fax

Do the following to send a test fax in order to confirm successful installation of the FAXCOM Server:

1. From the **Action** menu, select **Send a Test Fax**. The FAXCOM Server Test dialog box (Figure 3-4) is displayed, with the name or internal IP Address of the FAXCOM Server itself and the default TCP port number prefilled.

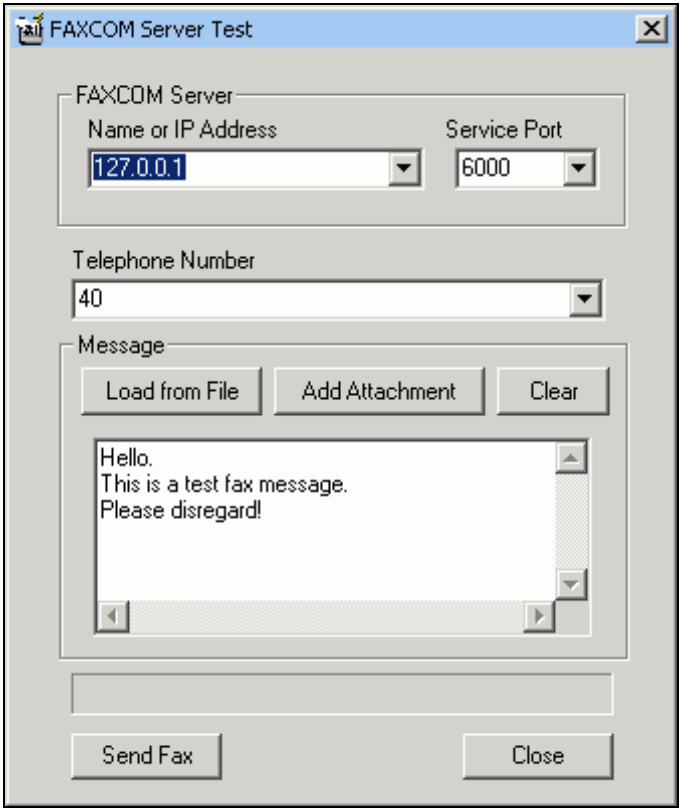


Figure 3-4. FAXCOM Server Test Dialog

2. In the *Telephone Number* box, specify the fax number of a nearby fax machine.
3. Either specify fax message text in the **Message** box, or click the **Load from File** button to select a file to comprise the fax message text. Note that you can click the **Clear** button to delete the default message text.
4. If appropriate, click the **Add Attachment** button and select a file attachment. Note that you can click the **Clear** button to remove a previously-added attachment.
5. Click the **Send Fax** button. After a pause, the Completion Status window is displayed.
6. Confirm the result is **trok** (for transmit ok).
7. When returned to the FAXCOM Server Test dialog, close the dialog.

Note: If your test fax was not successfully sent – and your telephone line type is T1/PRI/E1 – you may need to modify configuration information for the TR1034 fax board, as described in the "Configure TR1034 Setup" section later in this chapter.

Understand Inbound Routing (if DID or TI/PRI/E1)

If you are connecting to the FAXCOM Server with one FAXCOM Queue (i.e., front-end fax service gateway) only, you do not need to configure any inbound route entries. Routing is done to the Default Route, which is created automatically by the first FAXCOM Queue that attempts to pick up faxes from the fax server – and you can just accept this default route.

At this point, you have done what is necessary to implement a fully functioning system that sends and receives faxes.

If, however, you have multiple servers/FAXCOM Queues, you need to create additional inbound route entries to route to the additional FAXCOM Queues (as described in the "Configure Inbound Routing" section in Chapter Four). You would create these entries **after** installing your front-end fax service and creating the FAXCOM Queues.

Configure TR1034 Settings

Note: Biscom – as does Dialogic – strongly recommends use of a Channel Service Unit (CSU) for T-1 installations connecting directly (not through a PBX) to the phone company. For a fuller explanation of the functions provided by a CSU, refer to the Dialogic Knowledgebase Article #1146.

During the installation of the FAXCOM Server software, you were asked to specify information for your telephone line type (TI/PRI/E1) in order to work correctly with the TR1034 T1/PRI/E1 fax board. In the event you need to change the information you specified during the installation, do the following – ***being aware that the TR1034 tab is not visible if you do not have a TR1034 T1/PRI/E1 fax board***:

1. Click the **Configure** toolbar button  and select the **TR1034 Settings** tab (Figure 3-5). You can also select *Configure …All Settings… TR1034 Settings*. Note that the fields on the tab change depending on your selection of Telephone Line Type.

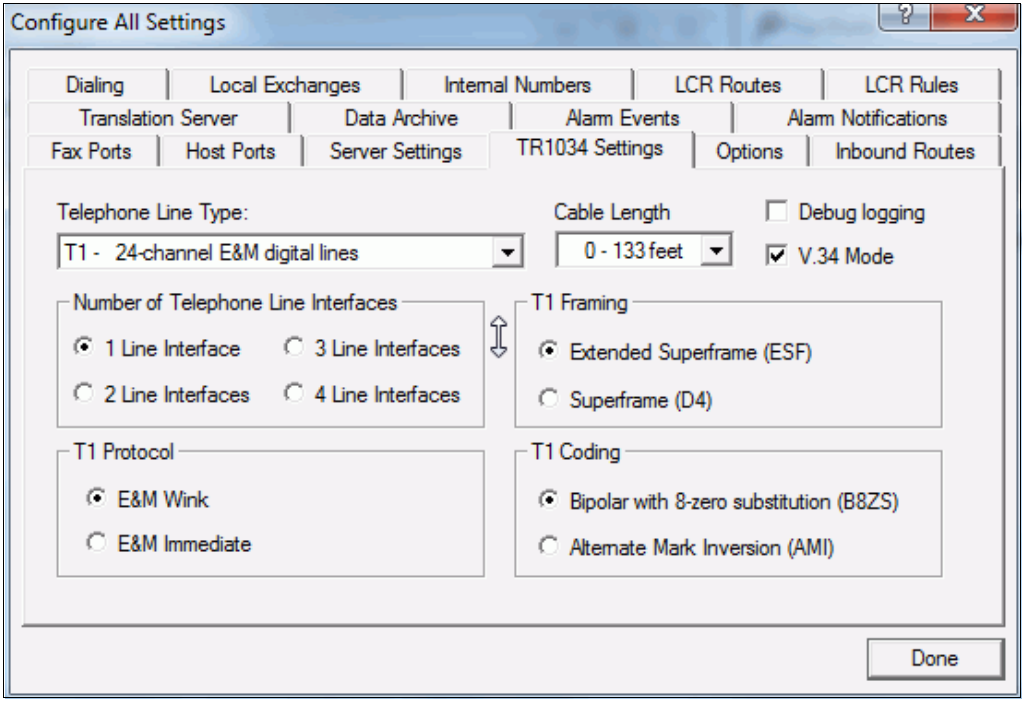


Figure 3-5. TR1034 Setup Tab (T1)

2. Change settings where appropriate, keeping the following in mind:

   Debug logging – select this option only if so advised by Biscom Support personnel.

   V.34 Mode – select this option in order to transmit faxes at a transmission speed faster than 14.4 kb/s and up to 33.6 kb/s.

   Cable length is the one aspect of T1/PRI setup you were **not** asked to specify during the installation of the FAXCOM Server software. If the length of your cable exceeds 132 feet, change the default setting to the setting that most closely corresponds to the actual length of your cable. Set the length as accurately as possible since an incorrect setting affects signal quality and proper operation of the board.

   You must restart the FAXCOM service for any changes to take effect.

   If you select T1- 24-channel E&M digital lines, make any appropriate changes to the following settings: Number of Telephone Line Interfaces, T1 Protocol, Cable Length, T1 Framing, T1 Coding. Click **Done**.

   If you select E1 - 30-channel ISDN digital lines, make any appropriate changes to the following settings (as shown in Figure 3-6): Number of Telephone Line Interfaces, ISDN Switch, ISDN Variant. Click **Done**.

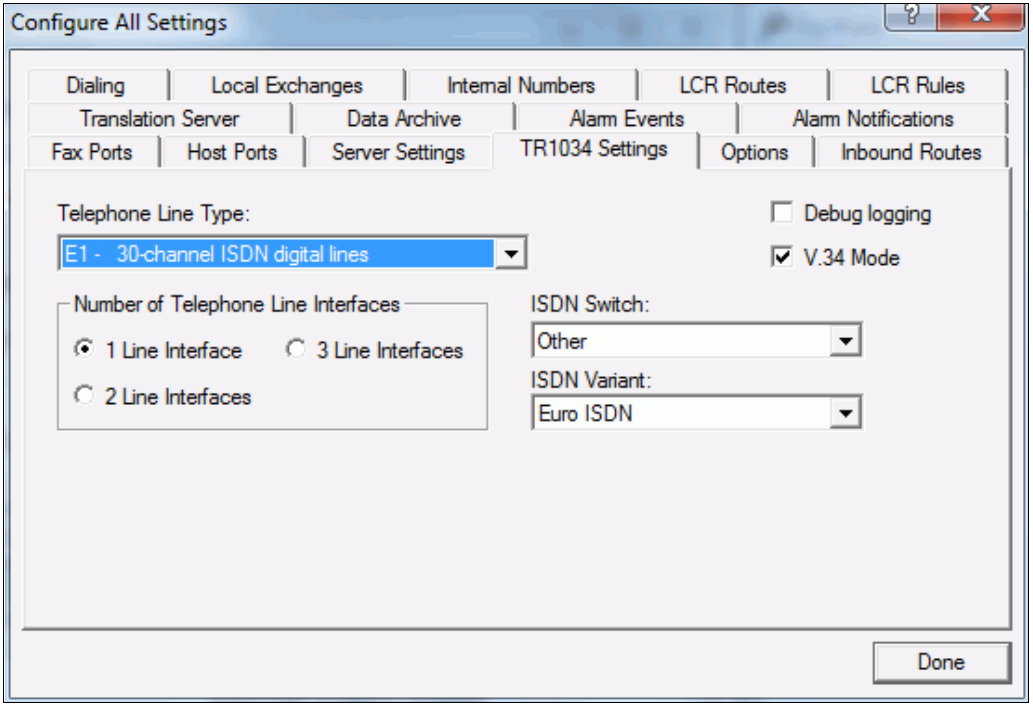


Figure 3-6. TR1034 Setup Tab (E1)

If you select PRI – 23-channel Primary Rate ISDN digital lines, make any appropriate changes to the following settings (as shown in Figure 3-7): Number of Telephone Line Interfaces, Cable Length, ISDN Switch, ISDN Variant.

Click **Done**.

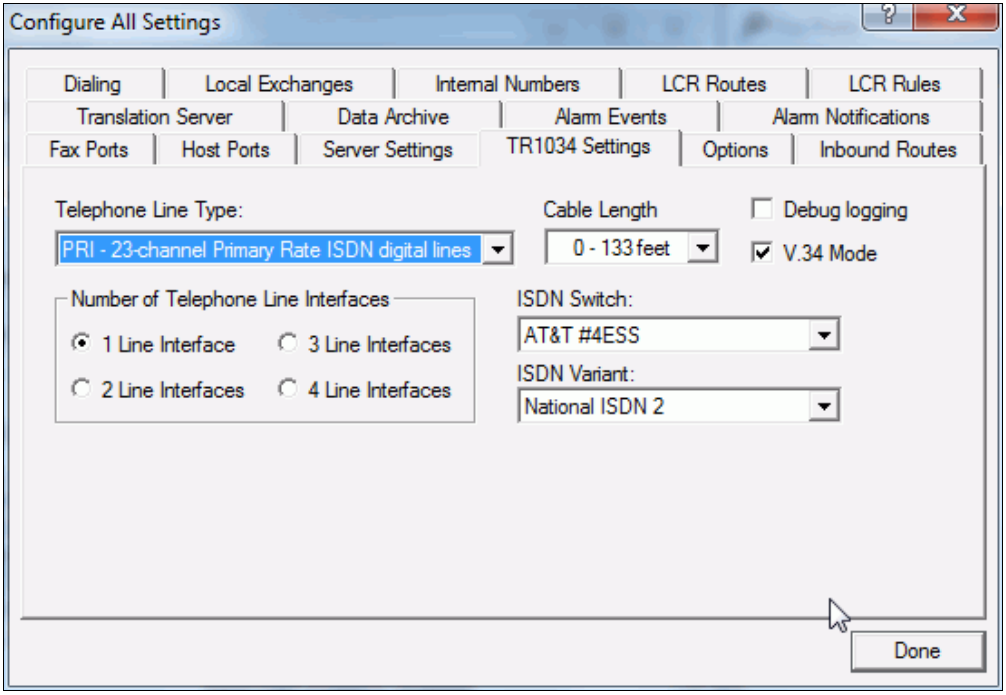


Figure 3-7. TR1034 Setup Tab (PRI)

Configure SR140 Settings

*If you chose **SR140 Virtual Fax Board (T38)** during the installation of the FAXCOM Server software, and implemented this boardless implementation according to the instructions in Appendix G* make any changes to the following settings:

1. Click the **Configure** toolbar button  and select the **SR140 Settings** tab (Figure 3-8). You can also select *Configure…All Settings… SR140 Settings*.

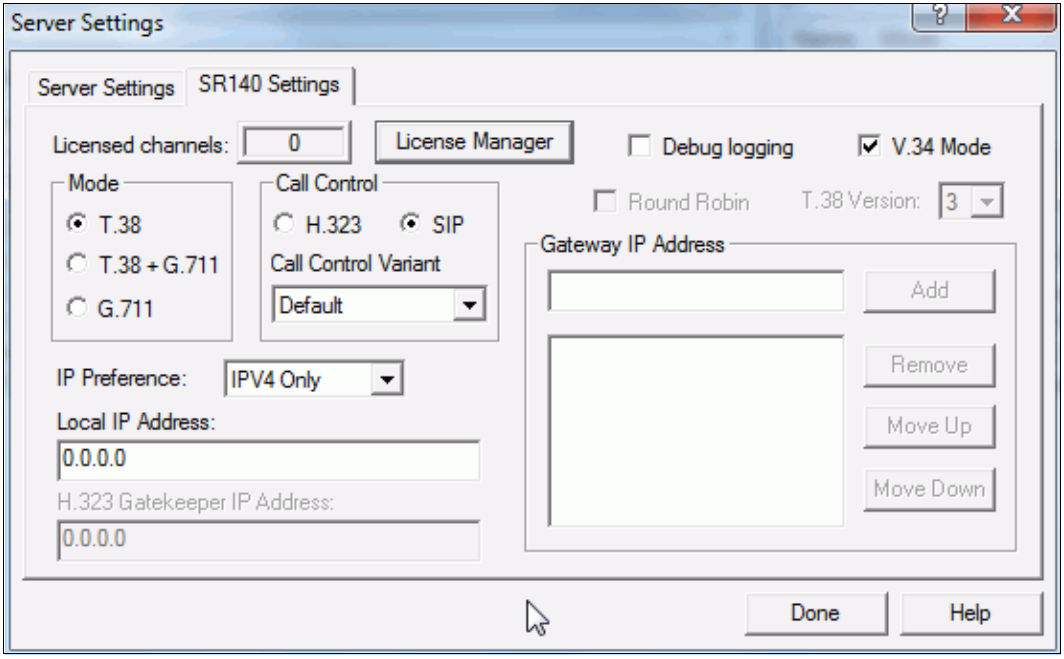


Figure 3-8. SR140 Settings Tab

2. Make the appropriate selections according to your implementation:

   Licensed channels – a read-only field that displays the number of fax ports for which you are licensed.

   License Manager – click this button to display the Brooktrout License Manager, with which to activate your SR140 license.

   Debug logging – select this option only if so advised by Biscom Support personnel.

   V.34 Mode – select this option in order to transmit faxes at a transmission speed faster than 14.4 kb/s and up to 33.6 kb/s.

   Mode – select T.38 to use T.38 only; select T.38 + G.711 to try to use T.38, falling back to G.711 if unsuccessful; select G.711 to use G.711 fax pass-through.

   Call Control – select the call control method used for Voice Over IP, either:

   SIP for the Session Initiation Protocol, a text-based protocol, similar to HTTP and SMTP, designed to manage multimedia sessions over the Internet; while SIP is responsible for determining the peer IP address and port number on which to communicate, it does not perform the actual physical transport of the media, which is typically done via TCP/IP.

H.323 for the standard that describes how multimedia communications occur between terminals, network equipment, and services, and which is part of a larger group of ITU recommendations for multi-media interoperability called H.3x. H.323 addresses call control and management for both point-to-point and multipoint conferences as well as gateway administration of media traffic, bandwidth, and user participation.

Call Control Variant – select either *Default*, *Cisco CallManager*, or *Avaya*, and typically ***Default***.

Round Robin – if you have two or more entries for Gateway IP Address, select this option to specify a form of load balancing whereby faxes are cycled to each gateway on a rotating basis.

Be aware that In the event a gateway is unavailable, the application marks that gateway as unavailable for 10 minutes before trying again – regardless of whether or not the Round Robin ***option is selected.***

T.38 Version – a field that is activated when V.34 Mode is ***not*** checked, and which enables you to select the T.38 Version, either 0, 1, 2, or 3.

Gateway IP Address – specify the IP Address of the Cisco router in use and click the **Add** button to add it to the list. Use the **Move Up** and **Move Down** buttons as appropriate to move entries within the list (where the topmost entry is the first one that will be used); click the **Remove** button to delete a selected entry from the list.

Note that you can specify a machine name in the Gateway IP Address ***and*** Local IP Address ***fields and the application will convert the name to the corresponding IP Address.***

IP Preference – select either *IPV4 Only*, *IPV6 Only*, *IPV4 Preferred*, *IPV6 Preferred*, being aware of the following consideration:

Unless you have configured the system to use ***both*** IPV4 and IPV6, you ***must*** select *IPV4 Only*.

Local IP Address – specify the IP Address of the system, being aware that you can enter a machine name that will be converted to an IP Address.

H.323 Gatekeeper IP Address – if you have selected *H.323* for **Call Control**, specify the IP Address of the H.323 Gatekeeper.

Chapter Four: Configure Full Capabilities of the FAXCOM Server

This chapter describes all features of FAXCOM Server that you can implement through configuration settings specified/selected via the FAXCOM Server Administrator program. You implement these features by configuring:

- Fax Ports
- Host Ports
- Server Settings
- TR1034 Settings
- SR140 Settings
- Alarm Management Events and Notification Methods
- Inbound Routing
- Options and the Number of Fax Ports
- Dialing Rules and Least Cost Routing
- Translation Server
- Data Archive
- SMTP Integration

Configure Fax Ports

When you select a specific port (either host port or fax port) and click the **Configure** button to configure it, you can either make changes to the port configuration or view the configuration in read-only mode. For that reason, you are prompted whether or not to stop the port. While it is not necessary to stop the port just to view it, you must stop the port to configure it.

Do the following to configure fax ports:

1. Click the **Configure** toolbar button  and select the **Fax Ports** tab (Figure 4-1). (You can also select *Configure…Ports…Fax Ports* or *Configure…All Settings…Fax Ports*.)

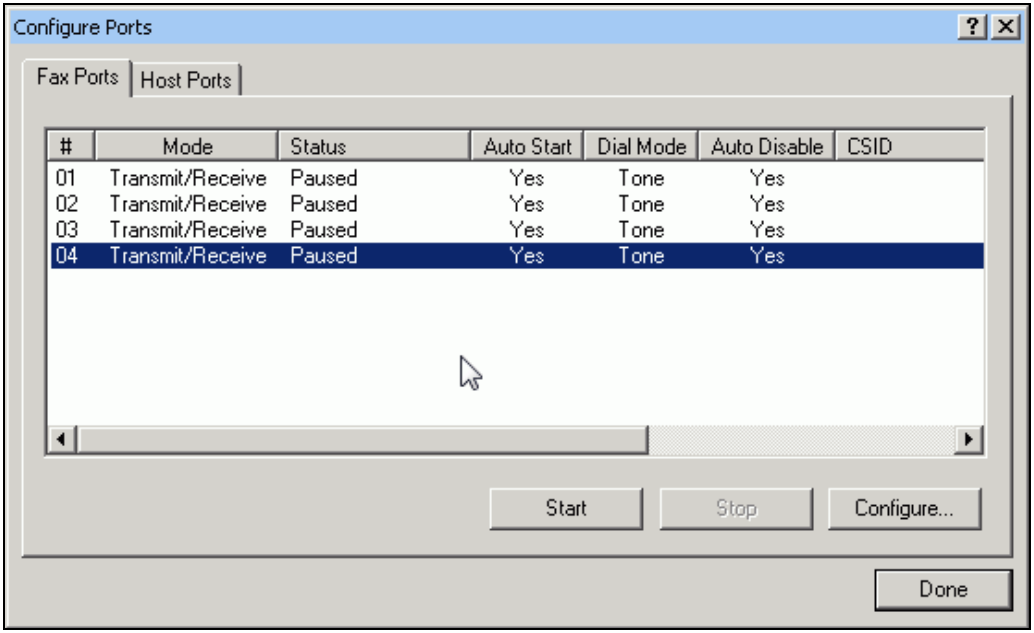


Figure 4-1. Configure Fax Ports Tab

2. To configure the port, highlight the port and click the **Configure** button to display the Fax Port dialog (Figure 4-2). (If the port is not stopped, you are prompted whether to stop the port since you cannot configure a port unless you first stop it. You can, however, view the configuration in read-only mode without stopping the port.)

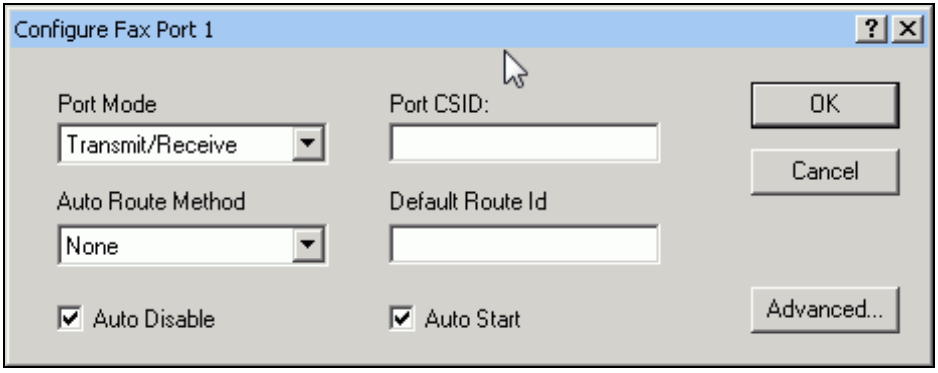


Figure 4-2. Fax Port Dialog

Note: You can also display the Configure Fax Port dialog box by either clicking the** View Fax Ports toolbar button **(or selecting** Fax Ports **from the** View pull-down menu**), then double-clicking the specific port you want to configure.

3. Specify the appropriate information as follows:

   Port Mode – either **Transmit/Receive** if both outbound and inbound fax traffic are to be handled over this port; **Transmit Only** if only outbound traffic is allowed, with no incoming calls answered; **Receive Only** if only inbound fax traffic is to be handled over this port, with no outbound fax jobs queued to the port. **Note that you must specify Receive Only when connecting the fax port to a DID or TIE line trunk.**

   Auto Disable – Check to cause the fax port to auto disable in the event of a phone line failure (two consecutive no-dial-tone errors). The server will then restart the auto-disabled port after 1 hour to check the line. If the alarm-events function is configured to monitor a fax port problem, the auto-disabled port would also trigger an alarm. (Refer to the "Configuring Alarm Management Events" section later in this chapter for more information.)

   Port CSID – enter an **up-to-20 character alphanumeric string** (alpha characters must be **UPPERCASE**) that is returned to the sender to identify the called machine. This ID is usually set to a company name or phone number associated with the port.

   Auto Route Method – set to **None** if no auto routing is configured; **DTMF** for DTMF routing; **DID** for DID routing. Refer to the "Configuring Inbound Routing" section for more information on specifying auto routing, including routing incoming faxes to a locally-attached printer.

   Default Route Id – Specify default inbound routing digits (extension) to be assumed if no auto-route digits are received. Covers both DTMF and DID routing.

   Auto Start – Check to set port so that it starts automatically next time the service is started. Note that stopping the port will disable Auto Start, and you will have to re-check this box.

   Advanced… – click to configure advanced fax port parameters

Configure Advanced Fax Port Parameters

When you configure advanced fax port parameters, you work directly in the configuration file and can edit parameter values, add parameter values and delete parameter values. (Typically, you should not have to access the configuration file unless so advised by Biscom support personnel.)

Do the following to configure advanced fax port parameters:

1. Click the **Configure** toolbar button  , and select the **Fax Ports** tab. (You can also select *Configure…Ports…Fax Ports* or *Configure…All Settings…Fax Ports*.)
2. To configure the port, highlight the port and click the **Configure** button. The Fax Port dialog is displayed (Figure 4-2).
3. Click the **Advanced** button to display the configuration file with the advanced parameter values (Figure 4-3).

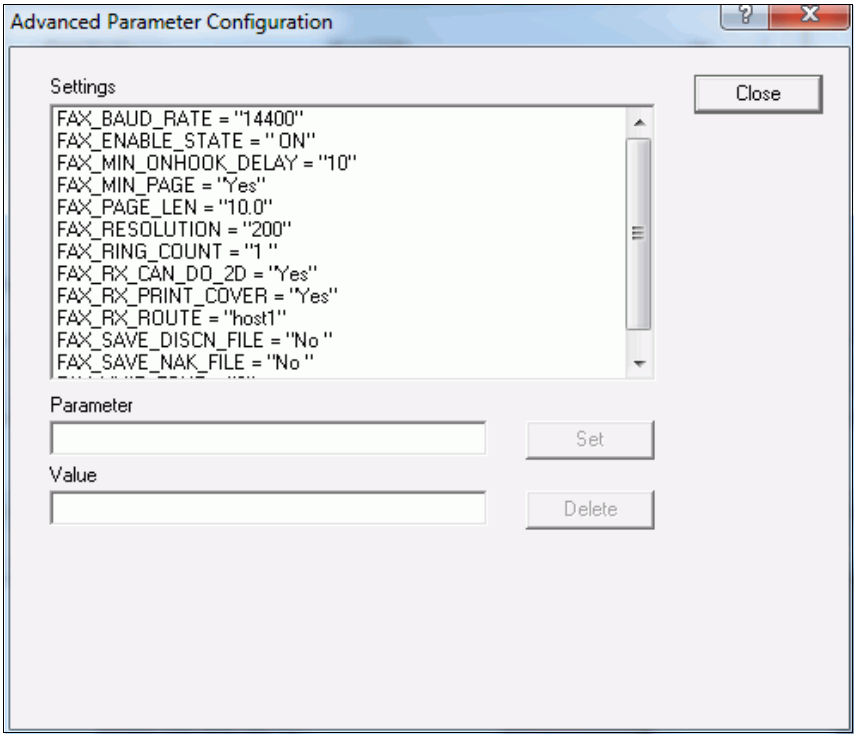


Figure 4-3. Advanced Fax Port Parameter Configuration

To delete a parameter value, highlight it and click the **Delete** button.

To edit a parameter value, highlight it and modify the parameter and/or value in the boxes provided. Click the **Set** button to save the newly-modified parameter value.

To add a value, enter the new parameter and its value in the boxes provided. Click the **Set** button to save the newly-added parameter value (which is placed in the parameter list in alphabetical order).

Configure Host Ports

When you select the **Configure Host Ports** function, you can either make changes to the port configuration or view the configuration in read-only mode. For that reason, you are prompted whether or not to stop the port. While it is not necessary to stop the port just to view it, you must stop the port to configure it.

Do the following to configure host ports:

1. Click the **Configure** toolbar button  , and select the **Host Ports** tab (Figure 4-4). (You can also select *Configure…Ports…Host Ports* or *Configure…All Settings…Host Ports*.)

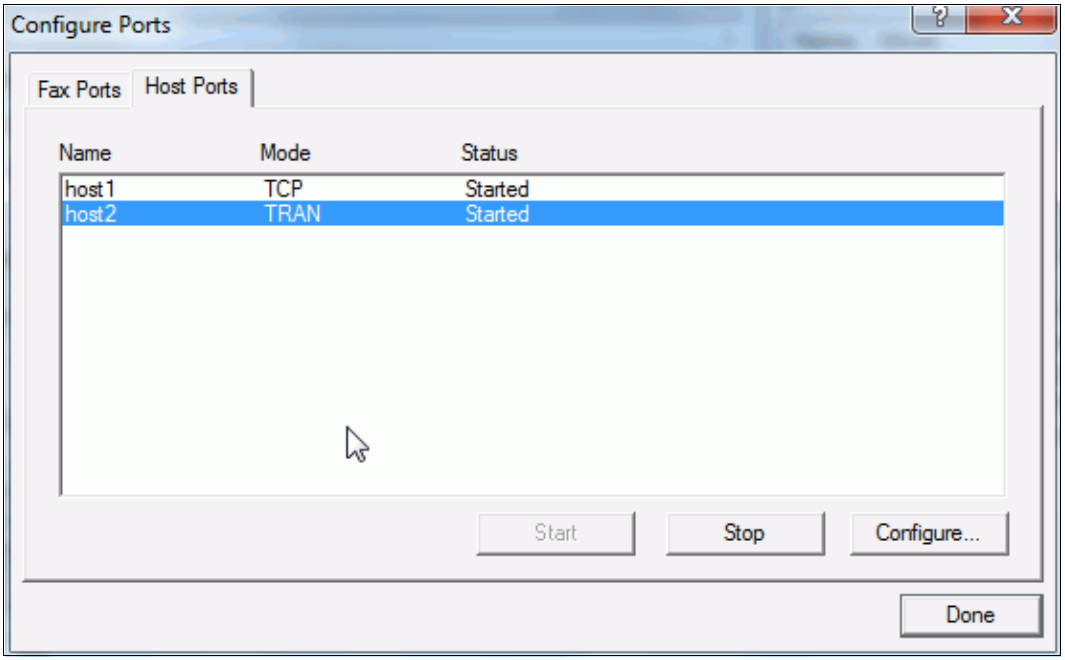


Figure 4-4. Host Ports Tab

2. To configure the port, highlight the port and click the **Configure** button. (If the port is not stopped, you are prompted whether to stop the port since you cannot configure a port unless you first stop it. You can, however, view the configuration in read-only mode without stopping the port.) The Host Port dialog is displayed (Figure 4-5).

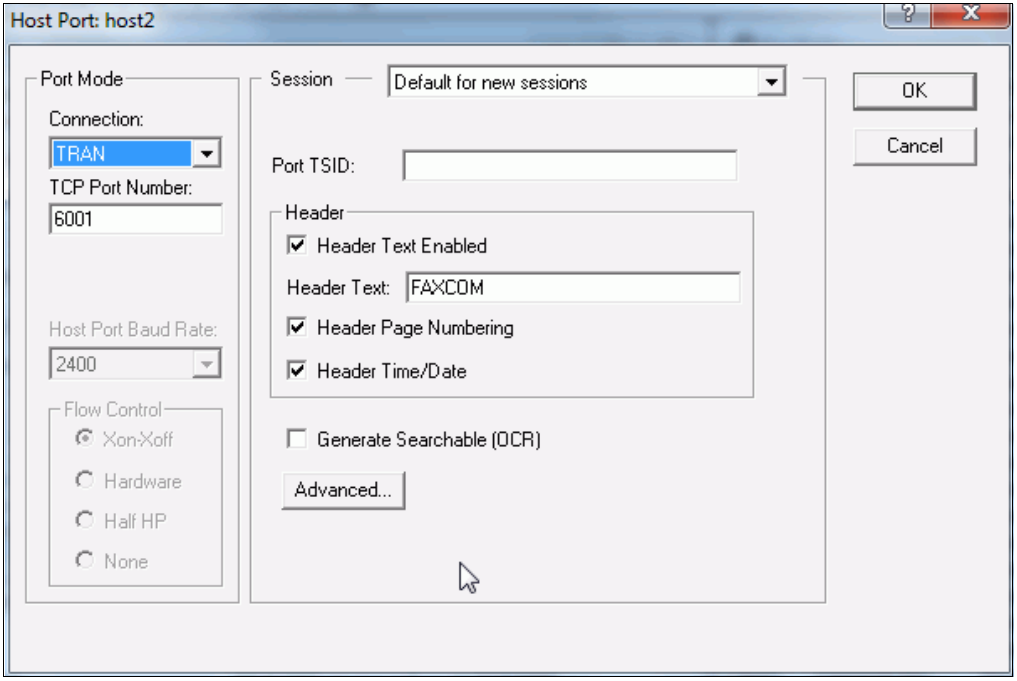


Figure 4-5. Host Port Dialog

Note: You can also display the Configure Host Port dialog box by either clicking on the** View Host Ports toolbar button **(or selecting** Host Ports **from the** View **pull-down menu), then double-clicking the specific port you want to configure.

3. Specify the appropriate information as follows:

   Connection Mode – **TCP** for communication over Ethernet or token ring TCP/IP connections. The port is dedicated to a single FAXCOM Queue. Generally used to send test faxes, except in some legacy environments where each FAXCOM Queue communicates with a dedicated TCP port on a FAXCOM Server; **TRAN** for communication over TCP/IP to enable multiple FAXCOM queues to share the same host port. Generally considered the main production port; **COM** for communication via serial port (COM 1 or COM2) to a single FAXCOM queue. Generally a much slower connection used in legacy environments, such as one without TCP/IP; **SSL** for Secure Sockets Layer communication (requires manual configuration for which you should contact Biscom Technical Support).

Notes: By default, the FAXCOM Server is shipped with host ports set to TRAN ***connection mode, 6001 as the TCP Port Number, and a default inbound route set to deliver received faxes to the first-connected*** TRAN ***session.***

If you are using the Least Cost Routing option, be sure to select TRAN ***as the Connection Mode when configuring the remote FAXCOM server on the remote side.***

TCP Port Number – (enabled only if you selected **TCP** or **SMTP** for Connection Mode); specify the TCP port number used to listen for incoming connections from the Ethernet/Token Ring network – of a value equal to or greater than 6000.

Host Port Baud Rate – enabled only if you selected COM1 or COM2 as the connection mode. The baud rate (bits per second), is the speed of data transfer and should match the baud rate specified on the remote system the FAXCOM server is connected to via the serial port. To specify the remote port settings, use the HyperTerminal application included in Windows. (*Start…Accessories…Communications…HyperTerminal.*) Baud rate should be set to the highest rate supported at both ends.

Flow Control – enabled only if you selected COM1 or COM2 as the connection mode. Settings in this box must correspond to the remote system the FAXCOM server is connected to via the serial port. To specify the remote port settings, use the HyperTerminal application included in Windows. (*Start…Accessories…Communications…HyperTerminal.*)

Xon-Xoff – select a compatible flow control protocol for proper operation of the asynchronous serial port. (Sometimes called software handshaking.)

Hardware – select to invoke hardware handshaking. This is the standard method of controlling data flow between a computer and a serial device.

Half HP – Select to connect to an HP 3000 proprietary half duplex flow control.

None – Select to disable flow control. (Not recommended under most circumstances, except at very low baud rates.)

Session – (enabled only if you selected **TRAN** for Connection Mode); *Default for new sessions* is displayed **before** a session is selected to enable you to use the specified settings for any new sessions that connect; otherwise, select the specific session to configure its own settings

Note that in most cases your front-end fax service (FAXCOM Suite for Windows/FAXCOM for Domino) automatically selects the values for the following settings:

Port TSID – Transmitting Station Identifier sent to the remote fax machine to identify the sender, typically the phone number of the sending device, that is

displayed on the console of the remote fax machine while the fax is being sent, and is also printed out in the remote fax machine logs. Alpha characters must be uppercase.

Header Text Enabled – check to implement printing of header text you specify in the Header Text field) on the top line of each transmitted fax page.

Header Text – up to 32 characters that are printed on the top line of each transmitted fax page if the **Header Text Enabled** option is checked. Typically, describes the location or company name that originated the fax.

Header Page Numbering – check to enable printing of page numbering on top line of each page.

Header Time/Date – check to enable printing of time and date stamp on top line of each page.

Generate Searchable – *active only if the OCR option is installed and enabled*, check to specify that a Host Port or Session receive faxes as searchable TIFF/PDF files

Note: For more information on performing OCR on received faxes and generating searchable files, refer to the "Performing OCR and Generating Searchable Documents" section immediately below.

Advanced... – click to configure advanced host port parameters

Performing OCR and Generating Searchable Documents

The OCR option enables you to perform Optical Character Recognition on received faxes in order to generate searchable documents – either searchable TIFF files or searchable PDF files. The received faxes can then be searchable either by individual FAXCOM Suite for Windows/FAXCOM for Domino recipients, or programmatically by the FAXCOM Suite for Windows Advanced Fax Routing option, whereby incoming faxes can be automatically routed according to data extracted from the fax itself.

You do the following to implement the OCR function:

1. If the option was not installed/configured at Biscom, click the **Configure** toolbar button  , select the **Options** tab (Figure 4-16), select (check) the **OCR** checkbox, and specify your OCR option authorization code.

Note: Because OCR is a CPU-intensive function, you enable the OCR option for the FAXCOM Server itself on the Options tab. You then specify just which Host Port/Session will actually be receiving searchable files on the Host Port dialog (Figure 4-5) for delivery to a particular FAXCOM Queue. In that way, you selectively implement the function as needed.

2. Refer to the "OCR Option System Requirement Guidelines" section later in this chapter for more information on the CPU power needed to perform OCR of received faxes.
3. When configuring a Host Port on the Host Port dialog (Figure 4-5), select (check) the **Generate Searchable** checkbox to specify that the Host Port/Session you are configuring deliver searchable files to the FAXCOM Queue(s) to which it routes received faxes.
4. Within your front-end product, confirm that you are running the version required for receiving searchable documents (FAXCOM Suite for Windows Release 9.17 or FAXCOM for Domino Release 8.3).
5. Within your front-end product, configure the format or received faxes, TIFF or PDF, to generate either searchable TIFF or searchable PDF files. If necessary, refer to the *FAXCOM Suite for Windows Administrator's Guide* or the *FAXCOM for Domino Administrator's Guide* for information on specifying receive fax options for the FAXCOM Queue to which the Host Port/Session is delivering received faxes.

Configure Advanced Host Port Parameters

When you configure advanced host port parameters, you work directly with the configuration file and can edit parameter values, add parameter values and delete parameter values.

Do the following to configure advanced host port parameters:

1. Click the **Configure** toolbar button  , and select the **Host Ports** tab. (You can also select *Configure…Ports…Host Ports* or *Configure…All Settings…Host Ports*.)
2. To configure the port, highlight the port and click the **Configure** button. The Host Port dialog is displayed (Figure 4-5).
3. Click the **Advanced** button to display the configuration file with the advanced parameter values (Figure 4-6).

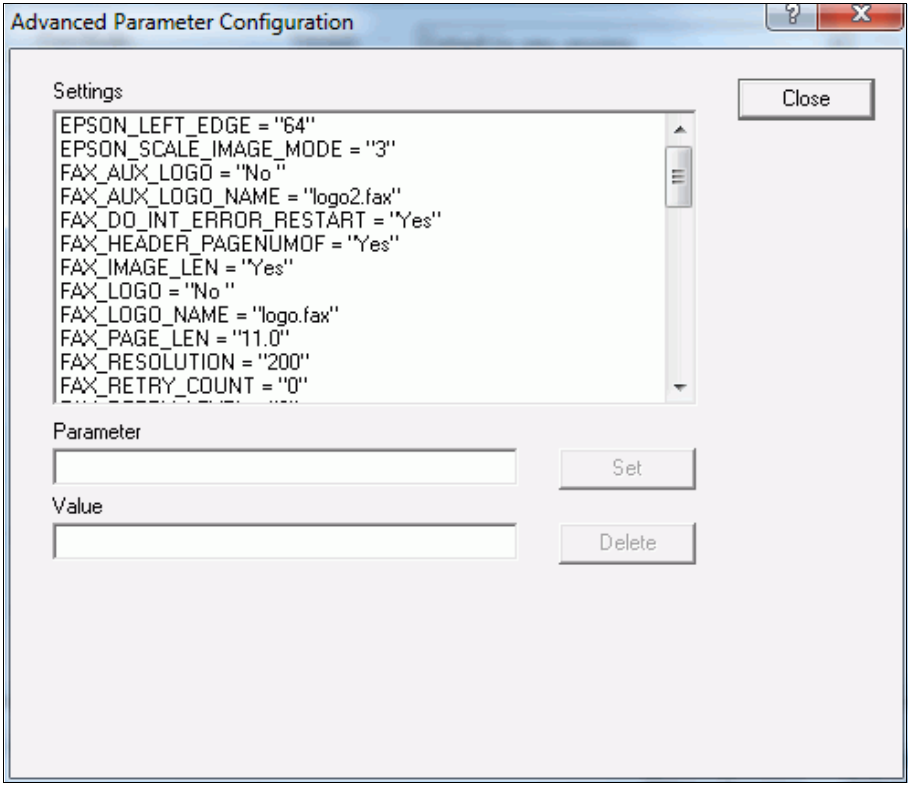


Figure 4-6. Advanced Host Port Parameter Configuration

To delete a parameter value, highlight it and click the **Delete** button.

To edit a parameter value, highlight it and modify the parameter and/or value in the boxes provided. Click the **Set** button to save the newly-modified parameter value.

To add a value, enter the new parameter and its value in the boxes provided. Click the **Set** button to save the newly-added parameter value (which is placed in the parameter list in alphabetical order).

Configure Server Settings

When you configure the server, you specify certain configuration parameters that affect the entire operation of FAXCOM Server.

Note: In many cases you can change a parameter with the change taking effect immediately; it is standard, however, to change configuration settings when the service is stopped, and then to restart the service after making changes.

1. Click the **Configure** toolbar button  , and select the **Server Settings** tab (Figure 4-7). (You can also select *Configure…Server Settings* or *Configure…All Settings…Server Settings*.)

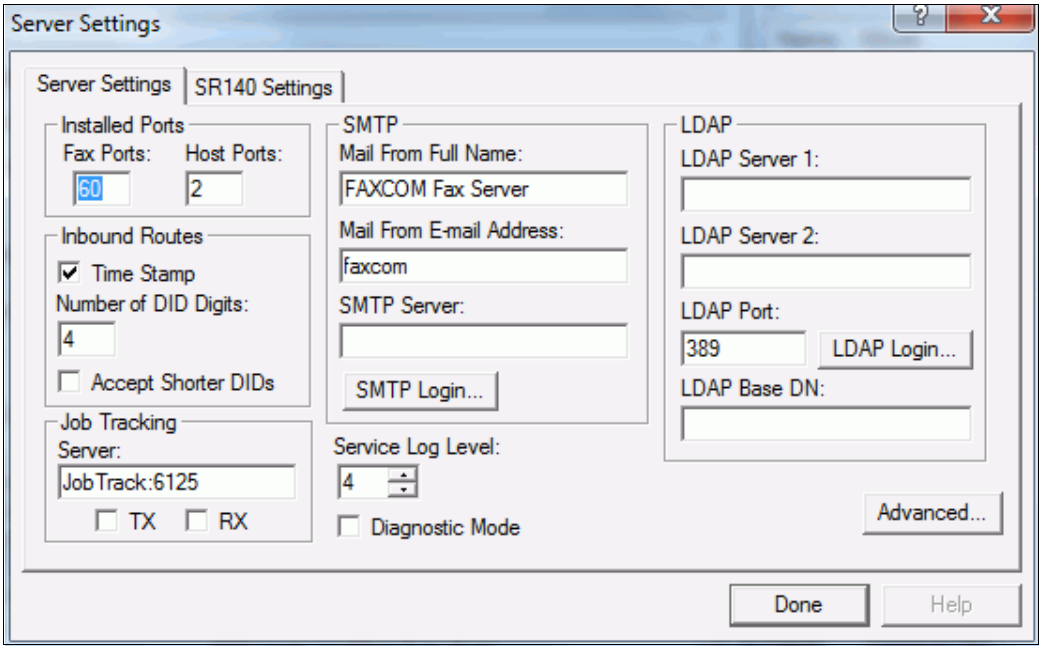


Figure 4-7. Server Settings Tab

2. Specify the appropriate settings, as follows:

Installed Ports

Fax Ports – number of fax ports to enable; on the Options tab (Figure 4-16), you can change the maximum number of fax ports you can enable up to the maximum number supported by your Authorization Code

Host Ports – number of host ports you plan to use. FAXCOM Server ships with one host port configured for TCP mode and one host port configured for TRAN mode; all FAXCOM Server models, however, support up to 6 host ports.

Inbound Routes

Time Stamp – check this box to specify that all received faxes automatically be stamped with the time they were received

Number of DID digits – number of digits to be detected for inbound routing. The FAXCOM server is shipped with a default value of **4** for this parameter, which you can change if appropriate

Accept Shorter DIDs – leave unchecked (which is the default), to specify that the FAXCOM Server *not* accept an incoming fax with fewer DID digits than are specified in the *Number of DID Digits* field. Check the option to specify that the FAXCOM Server *does* accept an incoming fax with fewer DID digits than are specified in the *Number of DID Digits* field.

Job Tracking

Server – specify the computer name or IP address of the machine where the Job Tracking service is running, where FAXCOM Job Tracking is a service that monitors the progress of both outbound and inbound faxes. ***To specify a secondary, i.e., backup, Job Tracking server***, follow the first entry with a comma or space followed by the computer name or IP address of the secondary machine.

Note: In the event you need to upgrade to Version 2 of Job Tracking from Version 1 (or downgrade to Version 1 from Version 2), refer to the "Specify the Job Tracking Protocol" section immediately following.

TX – Check this option to enable Job Tracking for transmitted faxes.

RX – Check this option to enable Job Tracking for received faxes.

SMTP

Mail From Full Name – enter the display name an SMTP recipient (usually an administrator) sees when viewing an e-mail message (usually an e-mail alarm notification) from the FAXCOM Server.

Mail From E-mail Address – specify an SMTP "from" mailbox for messages sent by the FAXCOM Server. The default value is *faxcom*. Enter a valid SMTP address such as admin@foo.com.

SMTP Server – specify the name or IP address of the SMTP server to use. If this field is left blank, then the FAXCOM Server will attempt to locate a server for each message using DNS and the host specified after the "@" in the destination SMTP address.

SMTP Login – click this button to specify your SMTP server user name and password.

Service Log Level – refers to the general service log (ims_log). Enter a value from 0-7, where 0 is the most verbose and 7 the least. The recommended level is the default of 4. Setting a value of 0, 1, 2 or 3 can cause so much information to be written to the logs that server throughput may be degraded. Consequently, a value of 0 through 3 should be used for troubleshooting purposes only. At a

value of 7, the ims_log provides only critical errors (and less detail than at lower levels), but the log will cover a much longer time span.

Diagnostic Mode – check this box to change the service log level to an extremely verbose mode (the equivalent of service log level 1) and to change the number of saved ims_log.old files to 100. Checking this box does not change the service log level you specified; the verbose display is only temporary and ends when you uncheck this box. Use this box for troubleshooting only.

LDAP

LDAP Server 1 – specify the IP address or name of the Primary LDAP server to be queried for inbound routing of faxes to SMTP mailboxes; this is a **required** field; if specifying a name for the server – rather than an IP address – an entry must be defined for the server in a DNS or host table.

LDAP Server 2 – specify the IP address or name of the Secondary LDAP server to be queried in the event the Primary Server cannot be contacted or does not respond; this is an **optional** field; if specifying a name for the server – rather than an IP address – an entry must be defined for the server in a DNS or host table.

LDAP Port – the default is the standard TCP/IP port on which LDAP service is provided; this value applies to both LDAP servers if you are using two. This parameter can be changed if appropriate, but both LDAP servers must be on the same standard port. If your LDAP server(s) require login, click the **LDAP Login** button to enter your user name(s) and password(s).

LDAP BASE DN – specify the Distinguished Name (DN) of the entry at which to start the search, for example, o=Biscom.

LDAP Login... – click to display the LDAP Login dialog (Figure 4-8) and specify the appropriate user name(s) and password(s) for logging on to the LDAP server(s).

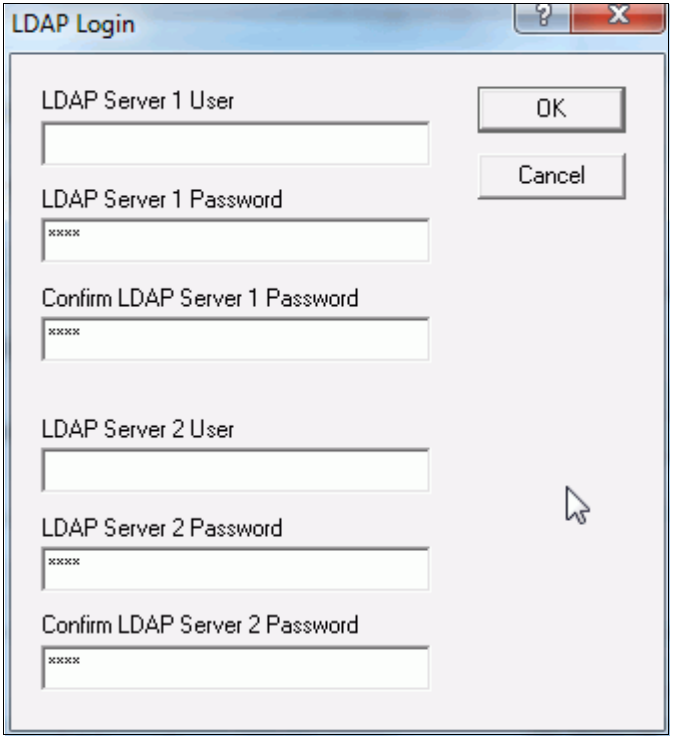


Figure 4-8. LDAP Login Dialog

Advanced... – click to configure advanced server setting parameters

Specify the Job Tracking Protocols

There may be cases in which you have to specify the specific protocols to use for Job Tracking, where there is the older Protocol 1 and the more recent Protocol 2. When peforming an upgrade of the FAXCOM Server, for example, it is necessary to specify the use of Protocol 2. When using Job Tracking with an older FAXCOM Server that does not support Protocol 2, you may have to specify use of Protocol 1.

Do the following to specify which Job Tracking Protocol to use:

1. On the Server Settings tab (Figure 4-7), click the **Advanced** button to display the configuration file with the advanced parameter values (Figure 4-9).
2. Enter the new parameter and its value in the boxes provided, either `Job_Track_Protocol = "1"` or `Job_Track_Protocol = "2"`.
3. Click the **Set** button to save the newly-added parameter value (which is placed in the parameter list in alphabetical order).

Configure Advanced Server Parameters

Typically, you should not have to configure advanced server parameters, and this information is primarily provided for your information.

When you configure advanced server parameters, you work directly with the configuration file and can edit parameter values, add parameter values and delete parameter values.

Do the following to configure advanced server parameters:

1. Click the **Configure** toolbar button  , and select the **Server Settings** tab (Figure 4-7). (You can also select *Configure…Server Settings* or *Configure…All Settings…Server Settings*.)
2. Click the **Advanced** button to display the configuration file with the advanced parameter values (Figure 4-9).

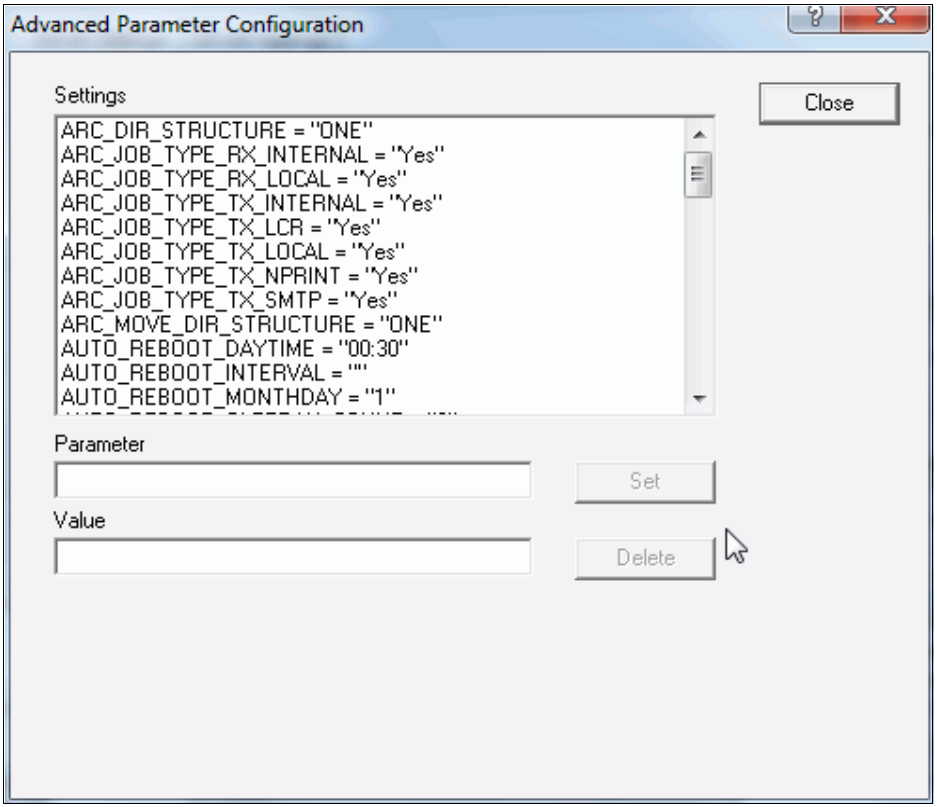


Figure 4-9. Advanced Server Parameter Configuration

To delete a parameter value, highlight it and click the **Delete** button.

To edit a parameter value, highlight it and modify the parameter and/or value in the boxes provided. Click the Set button to save the newly-modified parameter value.

To add a value, enter the new parameter and its value in the boxes provided. Click the **Set** button to save the newly-added parameter value (which is placed in the parameter list in alphabetical order).

Note: Refer to Appendix B for more information on a number of advanced capabilities you can implement through the Server Settings advanced configuration file.

Configure TR1034 Settings

Note: Biscom – as does Dialogic– strongly recommends use of a Channel Service Unit (CSU) for T-1 installations connecting directly (not through a PBX) to the phone company. For a fuller explanation of the functions provided by a CSU, refer to the Dialogic Knowledgebase Article #1146.

During the installation of the FAXCOM Server software, you were asked to specify information for your telephone line type (TI/PRI/E1). If your fax board is a TR1034, those settings are reflected on the **TR1034 Settings** tab of the Configure All Settings window.

Note: This tab will not be visible if you do not have a TR1034 fax board.

In the event you need to change the information you specified during the installation, do the following:

1. Click the **Configure** toolbar button  and select the **TR1034 Settings** (Figure 4-10). You can also select *Configure…All Settings…TR1034 Settings*. Note that the fields on the tab change depending on your selection of Telephone Line Type.

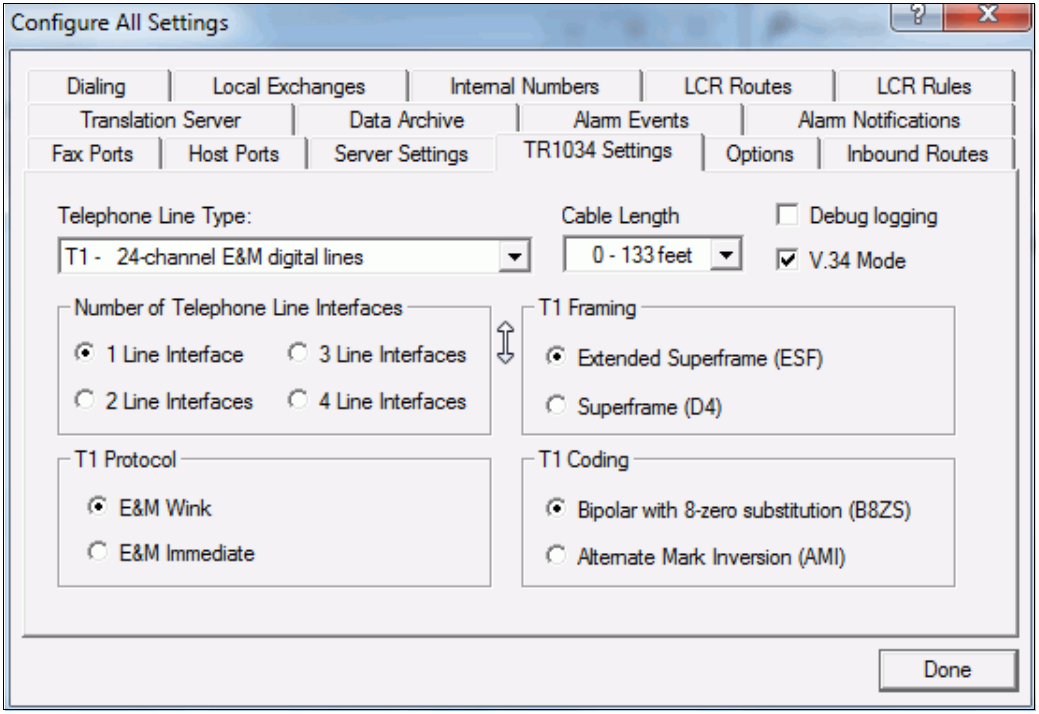


Figure 4-10. TR1034 Settings Tab (T1)

2. Change settings where appropriate, keeping the following in mind:

- Select the **Debug logging** option only if so advised by Biscom Support personnel.
- Select the V.34 Mode option in order to transmit faxes at a transmission speed faster than 14.4 kb/s and up to 33.6 kb/s.
- If you add or remove TR1034 fax boards, you will need to make sure the number of telephone line interfaces matches the number of TR1034 cards.
- If you have either T1 or PRI phone line type, you will have to configure the cable length. Cable length is the one aspect of T1/PRI setup you were not asked to specify during the installation of the FAXCOM Server software. If the length of your cable exceeds 133 feet, change the default setting to the setting that most closely corresponds to the actual length of your cable. Set the length as accurately as possible since an incorrect setting affects signal quality and proper operation of the board.
- Other settings must correspond to the telephone line type as determined by your telephone company.

3. Restart the FAXCOM service for any changes to take effect.

Configure SR140 Settings

In the event you need to view/modify SR140 settings, do the following:

1. Click the **Configure** toolbar button  and select the **SR140 Settings** (Figure 4-11). You can also select *Configure…All Settings…SR140 Settings*.

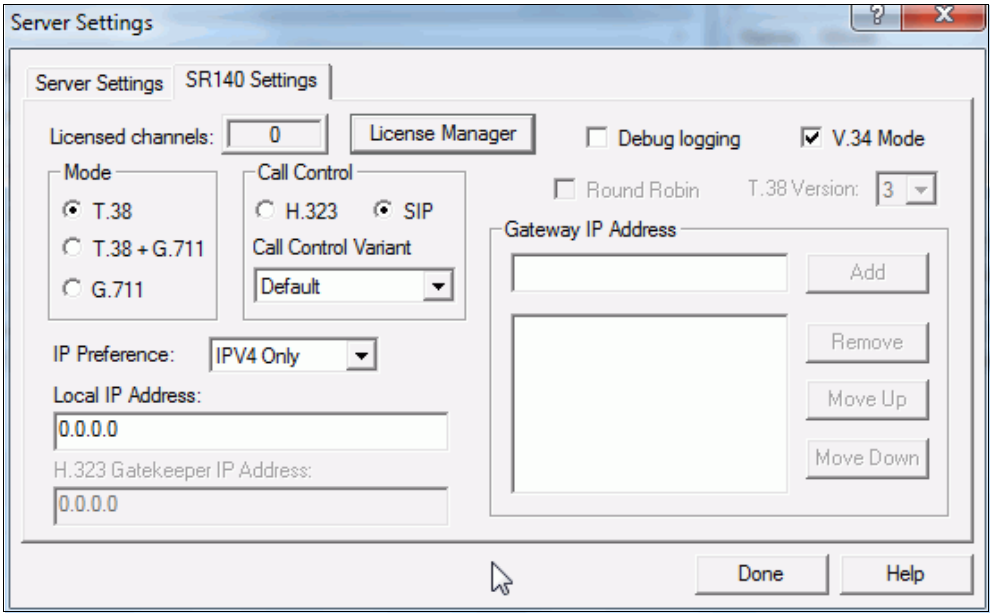


Figure 4-11. SR140 Settings

2. Make the appropriate selections according to your implementation:

   Licensed channels – a read-only field that displays the number of fax ports for which you are licensed.

   License Manager – click this button to display the Brooktrout License Manager, with which to activate your SR140 license.

   Debug logging – select this option only if so advised by Biscom Support personnel.

   V.34 Mode – select this option in order to transmit faxes at a transmission speed faster than 14.4 kb/s and up to 33.6 kb/s.

   Mode – select T.38 to use T.38 only; select T.38 + G.711 to try to use T.38, falling back to G.711 if unsuccessful; select G.711 to use G.711 fax pass-through.

   Call Control – select the call control method used for Voice Over IP, either:

SIP for the Session Initiation Protocol, a text-based protocol, similar to HTTP and SMTP, designed to manage multimedia sessions over the Internet; while SIP is responsible for determining the peer IP address and port number on which to communicate, it does not perform the actual physical transport of the media, which is typically done via TCP/IP.

H.323 for the standard that describes how multimedia communications occur between terminals, network equipment, and services, and which is part of a larger group of ITU recommendations for multi-media interoperability called H.3x. H.323 addresses call control and management for both point-to-point and multipoint conferences as well as gateway administration of media traffic, bandwidth, and user participation.

Call Control Variant – select either *Default*, *Cisco CallManager*, or *Avaya*, and typically ***Default***.

Round Robin – if you have two or more entries for Gateway IP Address, select this option to specify a form of load balancing whereby faxes are cycled to each gateway on a rotating basis.

Be aware that In the event a gateway is unavailable, the application marks that gateway as unavailable for 10 minutes before trying again – regardless of whether or not the Round Robin ***option is selected.***

T.38 Version – a field that is activated when V.34 Mode is ***not*** checked, and which enables you to select the T.38 Version, either 0, 1, 2, or 3.

Gateway IP Address – specify the IP Address of the Cisco router in use and click the **Add** button to add it to the list. Use the **Move Up** and **Move Down** buttons as appropriate to move entries within the list (where the topmost entry is the one that will be used); click the **Remove** button to delete a selected entry from the list.

Note that you can specify a machine name in the Gateway IP Address ***and*** Local IP Address ***fields and the application will convert the name to the corresponding IP Address.***

IP Preference – select either *IPV4 Only*, *IPV6 Only*, *IPV4 Preferred*, *IPV6 Preferred*, being aware of the following considerations:

Unless you have configured the system to use ***both*** IPV4 and IPV6, you ***must*** select *IPV4 Only*.

If the application is unsuccessful using either *IPV4 Preferred* or *IPV6 Preferred*, it will fall back *to* using *IPV4 Only*.

Local IP Address – specify the IP Address of the system, being aware that you can enter a machine name that will be converted to an IP Address.

H.323 Gatekeeper IP Address – if you have selected *H.323* for **Call Control**, specify the IP Address of the H.323 Gatekeeper.

Configure Alarm Management Events

You can configure the Alarm Management function to automatically monitor certain significant events, as follows:

1. Click the **Configure** toolbar button  , and select the **Alarm Events** tab (Figure 4-11. (You can also select *Configure…Alarm Events* or *Configure…All Settings…Alarm Events*.)

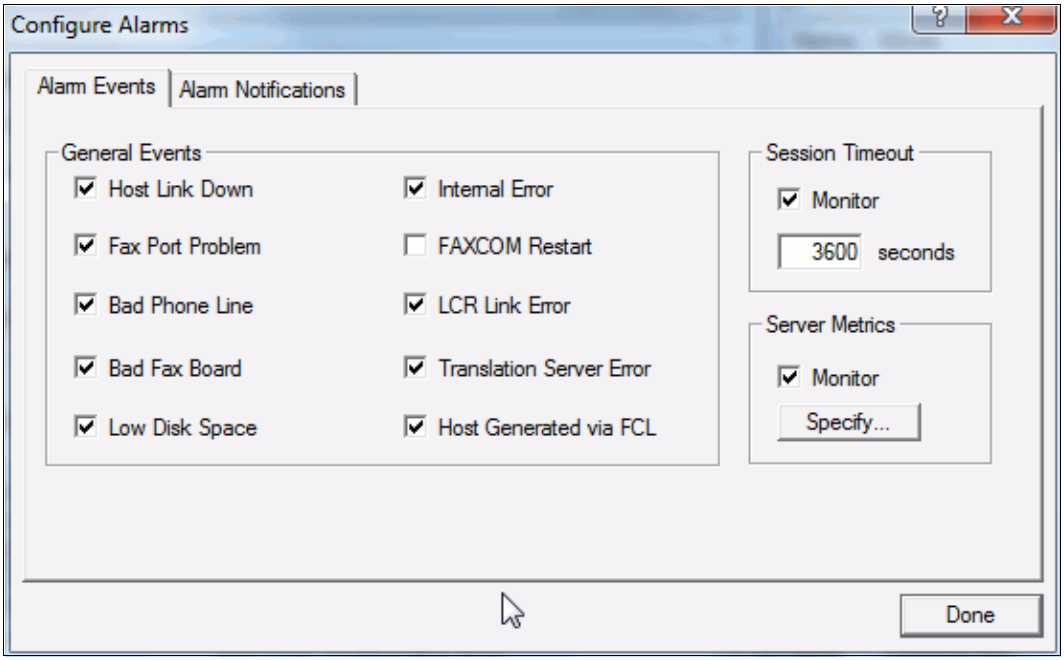


Figure 4-11. Alarm Events Tab

2. Check the events you want monitored. The events are:

   Host Link Down – TCP link has disconnected abnormally

   Fax Port Problem – a fax port hardware error was reported and the port has been marked out-of-service

   Bad Phone Line – a bad phone line, or phone cable, has been detected

   Bad Fax Board – a fax board has been marked out of service due to a detected hardware malfunction

   Low Disk Space – fax server disk is running low in disk space

   Internal Error – an internal error has occurred and should be reported to Biscom if it occurs repeatedly

FAXCOM Restart – fax server has been restarted

LCR Link Error – an error has been detected with the link to the remote server

Translation Server Error – an error has been detected with the connection to the Translation Server (if the Translation Server is an external machine), or the Translation Server has failed to successfully convert a document

Host Generated via FCL – a LAN/host-based application generated an alarm via FCL

Session Timeout – check to monitor whether a LAN/host session has not reconnected to the FAXCOM since the specified timeout; specify the timeout value in seconds

Server Metrics – check to specify that an alarm be generated whenever a set threshold is exceeded for certain key server parameters which you specify by clicking the **Specify** button and displaying the Specify Server Metrics dialog box (Figure 4-12).

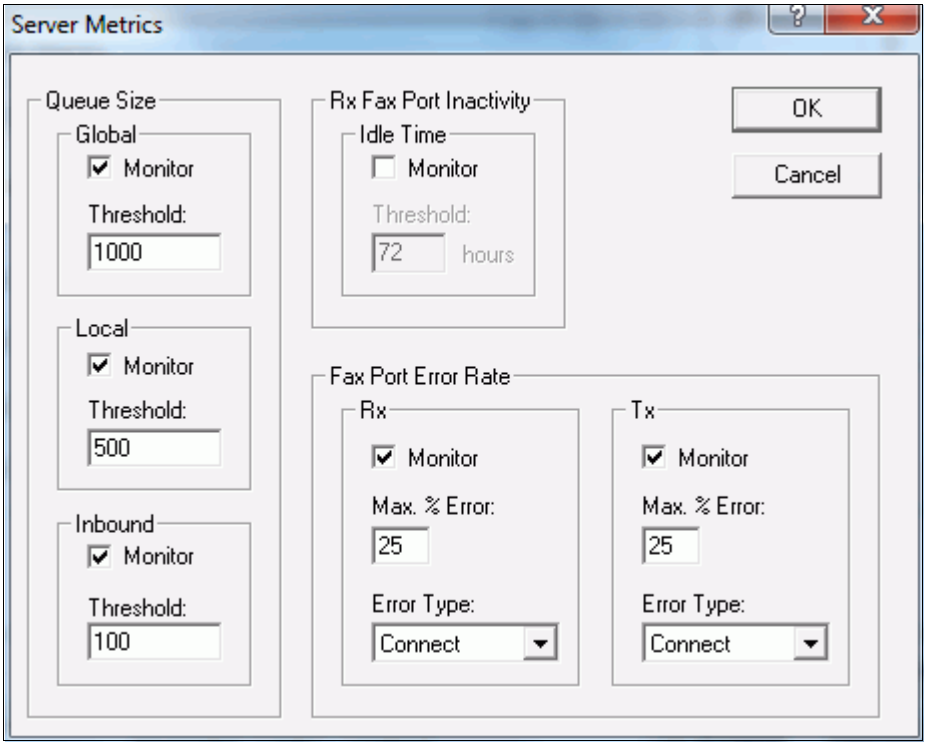


Figure 4-12. Server Metrics Dialog

Specify Server Metrics to be Monitored

You can monitor server metrics, whereby an alarm is generated whenever a set threshold is exceeded for the following key server parameters:

Queue Size

Global – contains all outgoing jobs in all external queues of FAXCOM host applications. The default threshold for the global outbound queue is 1000 jobs and is polled by the server in 30-minute intervals. The default setting should be appropriate for most configurations; however, you can change it to a reasonable value which exceeds the largest anticipated normal queue size. The global queue size also includes jobs in the local queue. If these queues grow exceedingly large, it could indicate either a bottleneck (more lines are required), a phone line problem, or a server malfunction which prevents the processing of jobs.

Local – contains staged jobs in the FAXCOM server's internal queue ready to be sent to an external queue. Most jobs are outbound since inbound jobs reside in the queue only briefly during the translation and routing phase. The default threshold is 500 jobs and is polled by the server in 30-minute intervals. While the default setting should be appropriate for most configurations, you can change it to be a reasonable value which exceeds the largest anticipated normal queue size. If this queue grows exceedingly large, it could indicate either a bottleneck (more lines are required), a phone line problem or a server malfunction which prevents the processing of jobs.

Inbound – inbound jobs moving from the FAXCOM to applications associated with host ports and host sessions; these queues serve as interim repositories of fax data since the data is periodically polled and picked up by the front-end fax services (FAXCOM Suite for Windows, FAXCOM for Domino); the threshold defaults to 100 jobs, and the threshold is polled by the server in 30-minute intervals.

When changing the threshold setting, specify a reasonable value that exceeds the largest anticipated normal queue size.

If these queues grow exceedingly large, it could indicate either a bottleneck (more lines are required), or an application malfunction (i.e., the application is down).

Note: Be aware that the threshold value for Global and Local applies to the sum of jobs from all queues (i.e., all host ports/host sessions), while the threshold value for Inbound applies to each queue individually.

Rx Fax Port Inactivity – any enabled inbound fax lines that are sitting idle for extended periods of time. This value defaults to 48 hours (to reflect a weekend of inactivity) and the threshold is polled by the server in 2-minute intervals. It is

recommended that this value be set to a reasonable value that exceeds the longest anticipated idle time interval.

If the idle time is too high, it could indicate a phone line malfunction.

Fax Port Error Rate

Rx – an error rate that is a percentage of the total attempts per hour per fax port, in 1 of 3 categories: *All Errors* (Connect and Non-Connect); *Connect Errors Only*; *Non-Connect Errors Only*. This value defaults to 25% of the total attempts of the specified error type, and a fax port must have processed a minimum of 20 jobs in an hour before its transmission error rate is calculated.

A high error rate could indicate a phone line or fax port hardware malfunction.

Tx – an error rate that is a percentage of the total attempts per hour per fax port, in 1 of 3 categories: *All Errors* (Connect and Non-Connect); *Connect Errors Only*; *Non-Connect Errors Only*. This value defaults to 25% of the total attempts of the specified error type, and a fax port must have processed a minimum of 20 jobs in an hour before its transmission error rate is calculated.

A high error rate could indicate a phone line or fax port hardware malfunction.

Configure Alarm Notification Methods

You can configure the Alarm Management function to notify you of a monitored event, as follows:

1. Click the **Configure** toolbar button  , and select the **Alarm Notifications** tab (Figure 4-13). (You can also select *Configure…Alarm Notifications* or *Configure…All Settings…Alarm Notifications*.)

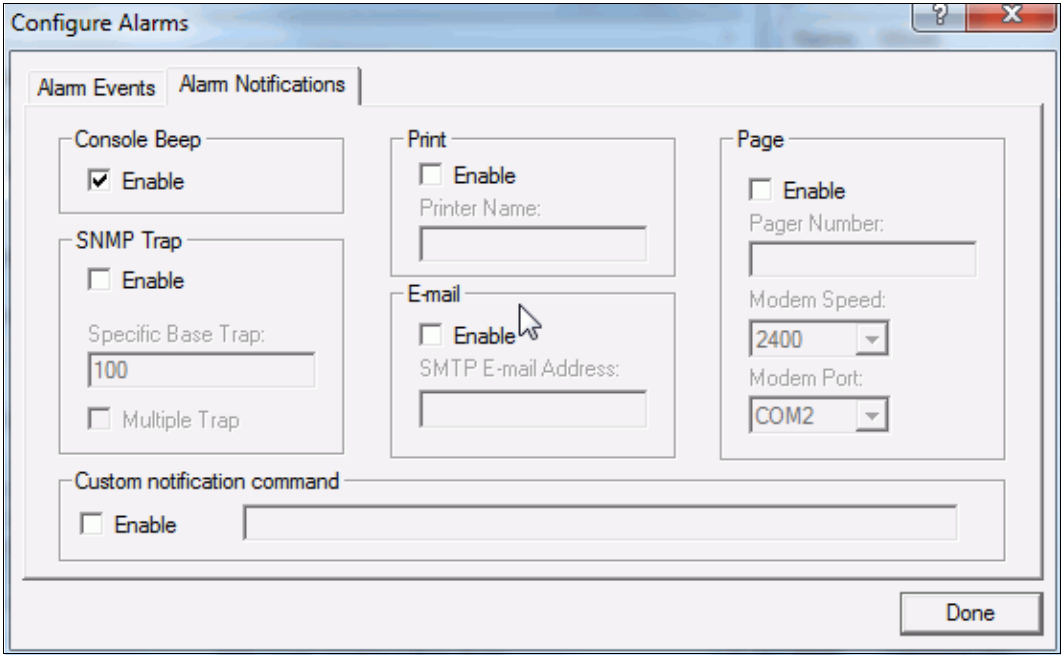


Figure 4-13. Alarm Notifications Tab

2. Check the notification methods you want to use, specifying the necessary information, as follows:

   Console Beep

   SNMP Trap – for which you must specify

   Specific Base Trap – the base trap value, such as 100

   Multiple Trap – when checked, specifies that each event generates a unique trap which is indexed from the Specific Base Trap value as follows:

   Base Trap + Event Index

   The **Event Index** values are automatically assigned by the system as follows:

Alarm Event Type	Description	Trap Index Number
10	Host link down	0
11	Host via FCL command	10
13	Diagnostic alarm	11
14	Session time-out	5
20	Fax port problem	1
21	Phone line out of service	2

23	Bad fax board	3
30	Low disk space	4
31	Internal error	6
33	FAXCOM restart	7
34	LCR-related problem	8
40	Translation Server error	9
50	Rx fax port error rate	12
51	Tx fax port error rate	13
52	Rx line idle	14
53	Internal Tx queue size	15
54	Internal Tx (local) queue size	16
55	Global Tx queue size	17

For example, if MultipleTrap is checked, and the Specific Base Index value is specified as 100, if a Session Time-out event is detected, an SNMP trap value of 100+5 – to equal **105** – is generated

Note: If using SNMP alarming on the latest Microsoft operating systems, you must do the following to install and configure the SNMP service:

Select **Control Panel…Programs…Turn Windows features on or off*****; select (check) the*** **Simple Network Management Protocol (SNMP) service** ***and click*** **OK*****.***

Once you have added the SNMP service, select **Control Panel…Administrative Tools…View local services*****; select the*** **SNMP service*****, right-click and select*** **Properties; *select the* Traps *tab; enter the appropriate information, keeping in mind that you can enter multiple IP addresses for multiple destinations.***

Print – for which you must specify

Printer Name – name of printer (as created and defined through the Control Panel Printer applet)

E-mail – for which you must specify

SMTP E-mail Address – any valid Internet user domain name of the Mailbox to receive the SMTP mail message, such as billa@faxcom.com

Page – for which you must specify

Pager Number – paging system access phone number, followed by one or more commas (each of which denotes a 2-second pause), followed by a numeric string (any combination of numbers 1 through 9) to denote a generic FAXCOM alarm event

Modem Speed – speed of connected modem (either 300, 2400, or 9600)

Modem Port – async serial port to be used for pager modem connection (either COM1, COM2)

Custom notification command – click the **Enable** check box to specify a program to be invoked when an alarm is generated; a file containing the text of the alarm is then passed as an argument to the specified program

Configure Inbound Routing

The FAXCOM Server supports the following methods, i.e., criteria, for inbound routing of faxes:

Fax Port – whereby all faxes over a given port or range of ports are routed to a specified destination type

Dialed Digits – whereby all faxes are routed to a specified destination type according to the phone number dialed; this option includes **Dual Tone Multi Frequency** (**DTMF**); **Direct Inward Dial** (**DID**) that requires the lines to be configured as receive-only; **PBX TIE Line**, an option that uses DID trunk interfaces connected directly to an on-premises Private Branch Exchange (PBX); with this option, the PBX (not the FAXCOM Server) terminates the DID trunks.

TSID – whereby all faxes received from the specified Transmitting Station Identifer (TSID) are routed to the specified destination type

Caller ID – whereby all faxes received from the specified sending telephone number are routed to the specified destination type

LDAP Query – whereby an LDAP query is run for each received fax

MS Exchange UM – whereby faxes will be delivered to an email destination specified by MS Exchange UM

You can choose from the following Destination Types when configuring the routing methodsHIDD_INROUTINGPARAMS_DLG:

Host Port, Session, Printer, SMTP E-mail, SMTP E-Mail via LDAP, FTP, UNC, Quarantine, Hang up, SFTP

If no Inbound Routing entries are configured, routing is done to the Default Route, which is created automatically by the first fax queue that attempts to pick up faxes from the fax server. If you have just one fax server and one fax queue, you can simply accept this default route. If, however, you have multiple servers/queue, you can change the Default Route on the Inbound Routes tab.

Do the following to configure the FAXCOM Server for your inbound routing interface:

1. Click the **Configure** toolbar button  , and select the **Inbound Routes** tab (Figure 4-14). listing any currently-configured Inbound Routing entries. (You

can also select *Configure…Inbound Routing* or *Configure…All Settings…Inbound Routes*.)

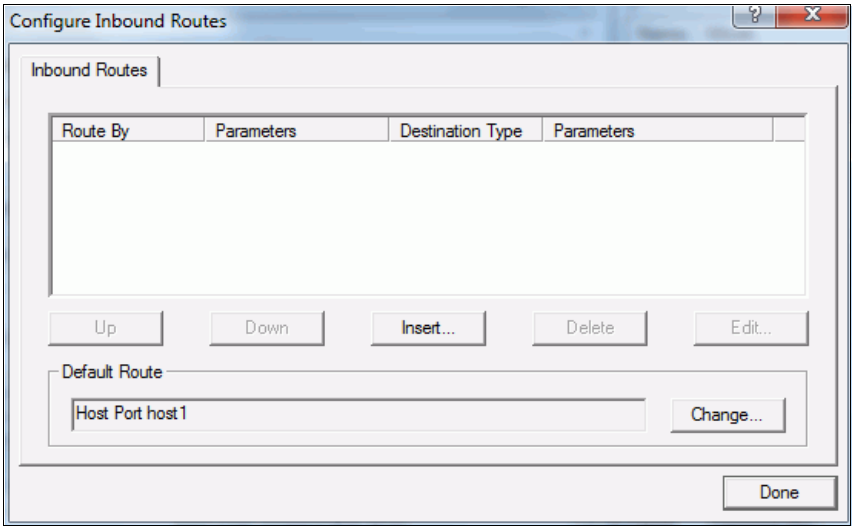


Figure 4-14. Inbound Routes Tab

2. Either highlight an existing entry and press the **Edit** button, or press the **Insert** button to insert a new entry. The Inbound Route dialog (Figure 4-15) is displayed.

Note: Be aware that a new entry will be inserted** above **the current cursor position on the Configure Inbound Routing dialog box list** AND THE ORDER OF THE ENTRIES IS CRUCIAL **since the routing is done according to the first match found in the list. Therefore, if appropriate, you can always highlight an entry on the list and click either the Up or Down button to move it.

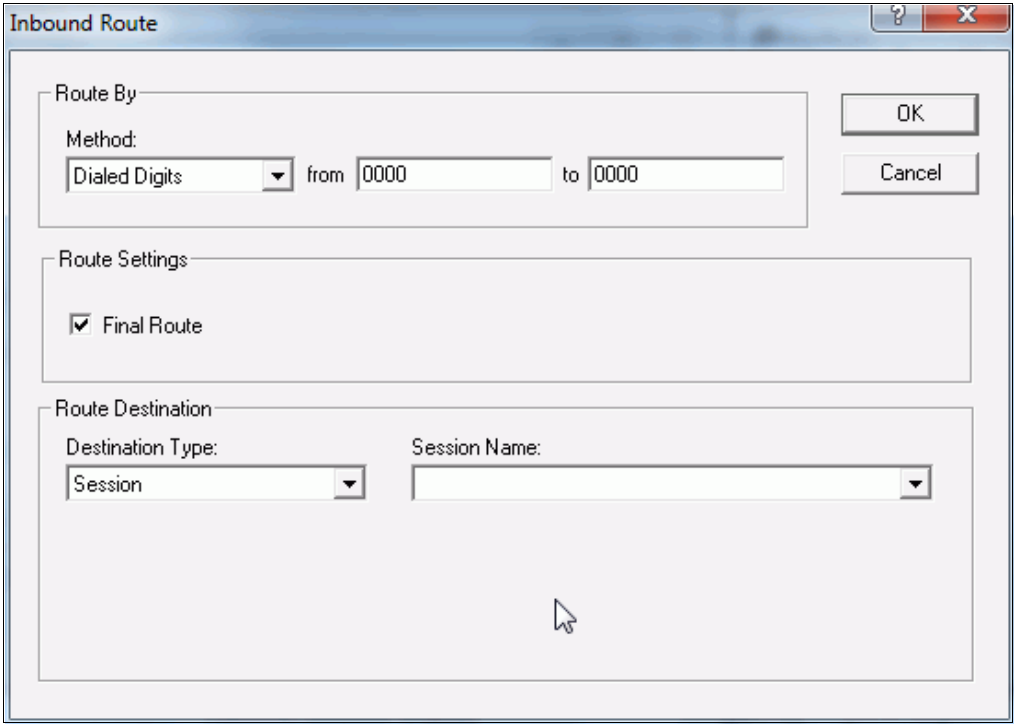


Figure 4-15. Inbound Route Dialog

Note that the fields on the Inbound Route dialog change depending on what you select for *Method* and *Destination Type*, as follows:

3. In the **Route By** box, select either **Fax Port** for Fax Port routing, **Dialed Digits** for DTMF, DID or PBX Tie Line routing, **TSID** to route on the Transmitter Subscriber ID (TSID), **Caller ID** to route on the Sending telephone number, **LDAP Query** for routing on directory look-ups, or **MS Exchange UM** for delivering to an email destination specified by MS Exchange UM.

   *If you selected **Fax Port**,* specify the port(s) in the **from** and **to** boxes.

   *If you selected **Dialed Digits***, specify the extension number or range of extension numbers, using the number of digits specified in the *Inbound Route Number of Digits* field on the Server Settings tab (Figure 3-3).

   *If you selected **TSID***, specify the TSID in the **Match TSID** box. The TSID is generally found in the metadata of a fax already received. You can match exact

alphanumeric strings or use one of two wildcard characters: an asterisk (*) to specify a string of matching alphanumeric characters (e.g. to route all faxes from area code 978, enter 978* in the **Match TSID** box) or a question mark (?) to specify and match any character at a single position in a string.

*If you selected **Caller ID***, specify a digits-only string in the **Match Caller ID** box.

*If you selected **LDAP Query*** , specify a phone mask with x characters and possibly dots and an LDAP query. For each received fax, the query is run. If no matches are found, the next rule is evaluated. If matches are found, the query looks at the specified attribute (which in the example shown in Figure 4-16 is the Session Name Attribute) and sends the incoming job to that session (or sessions if multiple matches are returned).

The DIDs are formatted as follows: all characters except "x" and "." are preserved as is. The "x" characters are replaced with digits from the received DID. The phone mask is needed because the number in AD is typically formatted.

Use the following examples as a guide:

- The DID digits received are **9783672748**, but the number in AD is formatted as **(978) 367-2748**, therefore requiring the phone mask (as shown in Figure 4-16).
- The DID digits received are **9783672748**, but the number in AD is specified as **x2748**, therefore requiring the phone mask to be **.....*xxxxx***, which specifies skip the first 6 digits of the received DID, insert an **x** (which is escaped with a back slash), and route on the last four digits of the received DID.

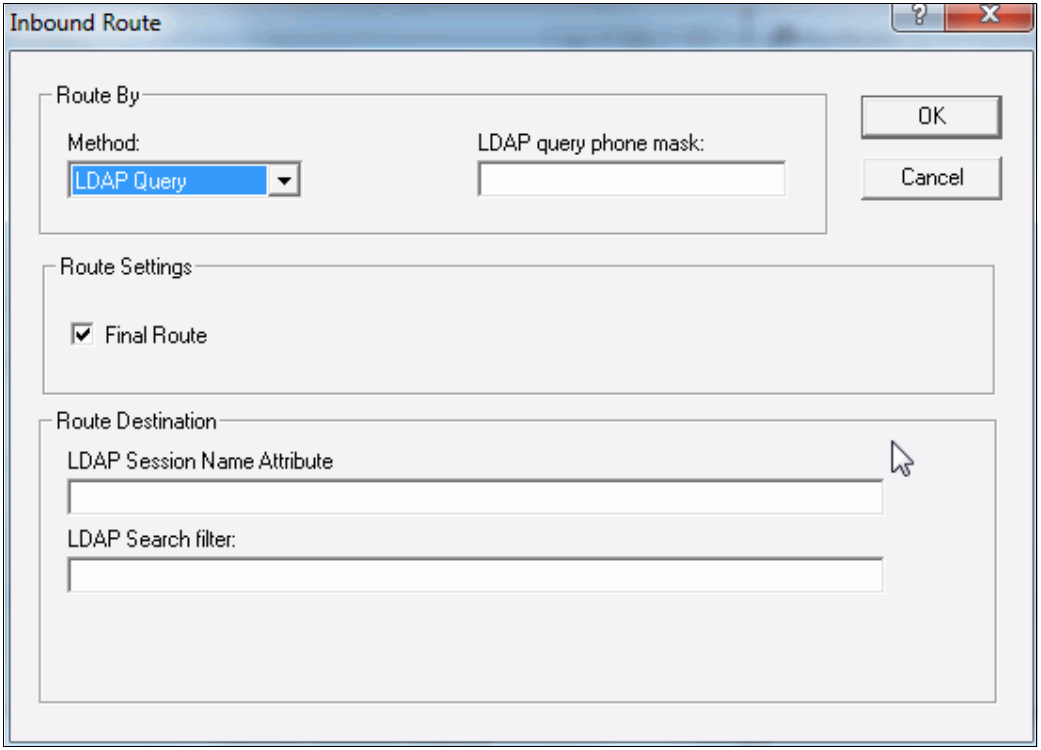


Figure 4-16. Route by LDAP Query

Note: Through the Fax Port, Dialed Digits, LDAP Query, and MS Exchange UM methods, faxes are routed based on where they're going to (known recipients) By routing inbound faxes via TSID or Caller ID, faxes are routed based on where they're coming from. (The latter methods are rarely used and, then, mostly to block unwanted inbound faxes.)

If you selected ***MS Exchange UM***, it is not necessary to specify any information as routing is done by MS Exchange UM.

4. In the **Route Settings** box, check the **Final Route** checkbox to specify that a Destination Type you will configure in the Route Destination Destination Type field is the final route, with no more attempts at matching routing method and destination. The **Final Route** option is available for every Destination Type except **Hang up**.

5. In the **Destination Type** box, select the appropriate destination from the pull-down list.

   If you selected ***Host Port*** (to route incoming faxes to a FAXCOM Queue or your own FCL application), specify the host port number in the **Host Port** box.

Note: If you want to configure the Host Port to receive faxes as searchable PDF files, check the Generate Searchable check box on the Host Port dialog (Figure 4-5).

If you selected ***Session*** (to route incoming faxes to a FAXCOM Queue or your own FCL application), select a session name from those available in the **Session Name** box.

Note: If you want to configure the Session to receive faxes as searchable PDF files, check the Generate Searchable check box on the Host Port dialog (Figure 4-5).

If you selected ***Printer*** (to route incoming faxes to a specific local or network printer), specify the destination printer name in UNC notation in the **Printer Name** box, select the printer type in the **Printer Data Type** box, and check/uncheck the **Banner** box according to whether or not to print a banner page.

If you selected ***SMTP E-mail*** (to route incoming faxes to an SMTP email address), specify any valid Internet user domain name to receive the mail in the *SMTP E-mail Address* box, select the format of the fax attachment in the **Attachment Type** box, and check/uncheck the **Banner** box according to whether or not to create a text file to which to attach the fax.

If you selected ***SMTP E-Mail via LDAP***, specify the query search string to use in the **LDAP Search Filter** box. Search string syntax for the search filter is rigid – click the **Sample** button to see an example. Enter the string in the following format:

(**keyword=matchstring**)

where `keyword` is a keyword (such as "facsimiletelephonenumber" or "mail") from LDAP database schema, and where **`matchstring`** is an exact value for a single user or a construct containing 1 of 4 substitution strings (often$RID) for multiple users:

Substitution String	What it queries and routes by:
`$RID`	Dialed Digits
`$LINE`	Fax Ports
`$TSID`	TSID
`$CALLERID`	Caller ID

The substitution string is based on the Route By method as specified above.

If the LDAP lookup fails, the inbound fax is routed to the entry in the **Default SMTP E-mail Address** field. Specify an address that is active and that will

periodically be checked by an administrator who will forward and/or reroute faxes delivered there.

Select the format in which to attach the fax in the **Attachment Type** box, and check/uncheck the **Banner** box according to whether or not to create a text file message to which to attach the fax.

*If you selected **FTP*** (to route incoming faxes to a destination directory on a specific server on the internal network), specify the IP address or host name of the FTP server in the **FTP server** box; if appropriate, change the default of **Port 21**; specify any User Name and Password required to login to the FTP server in the **User Name** and **Password** boxes, the type of file to route to the FTP server in the **File Type** box, the specific directory on the FTP server in which to deposit the file in the **Directory** box (otherwise, it is deposited in the root), and check/uncheck the **Banner** box according to whether to create a banner page.

*If you selected **UNC*** (to route incoming faxes to an internal file directory), specify a destination directory in UNC format, or browse for a folder using the Browse button, the file type in the **File Type** box, and check/uncheck the ***Banner*** box according to whether to create a banner page.

*If you selected **Quarantine** or **Hang up*** (to route incoming faxes to a local destination [drive:\u\Quarantine] where you can identify possible spam faxes, or to hang up and not route faxes), there are no settings to specify. To view, delete, and/or manually process quarantined faxes, refer to Chapter Six, "Install and Use Qdoctor." Senders of faxes to the **Hang up** destination receive an error message.

*If you selected **SFTP*** (to route incoming faxes are routed to a destination directory on a specific server over a secure encrypted network), specify the IP address or host name of the secure FTP server in the **SFTP server** box; if appropriate, change the default of **Port 21**; specify any User Name and Password required to login to the SFTP server in the **User Name** and **Password** boxes, the type of file to route to the SFTP server in the **File Type** box, the specific directory on the SFTP server in which to deposit the file in the **Directory** box (otherwise, it is deposited in the root), and check/uncheck the **Banner** box according to whether to create a banner page.

Note: When selecting Searchable PDF as the received fax file type, refer to the "OCR Option System Requirement Guidelines" section later in this chapter for information on the CPU power needed to perform OCR of received faxes.

6. Click **OK**.

Configure Options and the Number of Fax Ports

Follow this procedure to configure the installation of optional software (if the option was not installed/configured at Biscom). When you enable a particular feature, you are prompted for its authorization code if the feature is a separate option.

1. Click the **Configure** toolbar button  , and select the **Options** tab (Figure 4-17). (You can also select *Configure…Options* or *Configure…All Settings…Options*.)

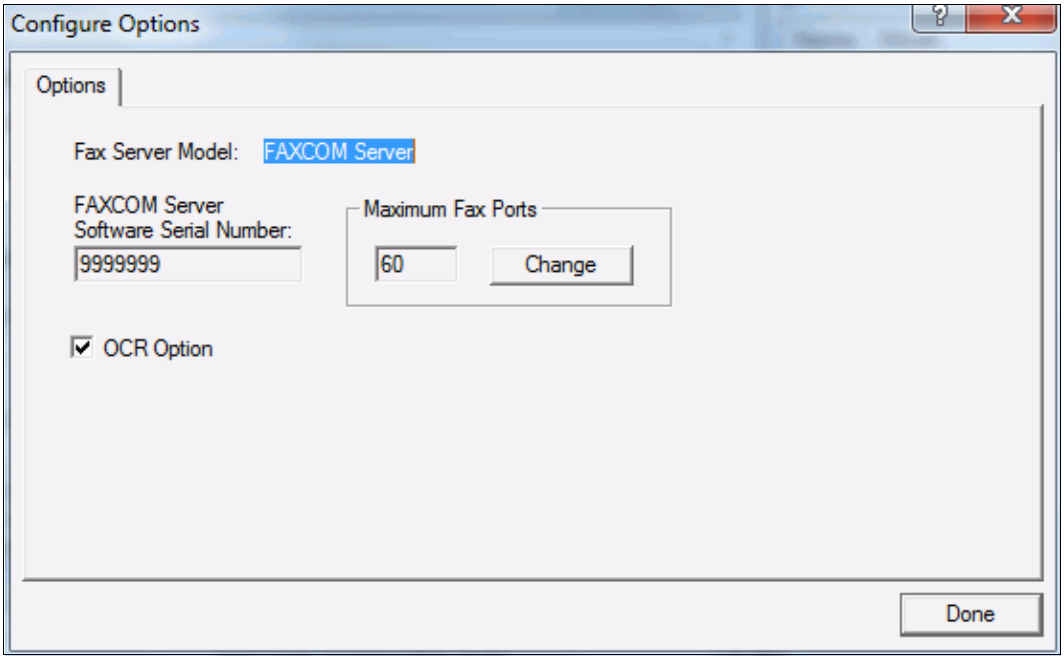


Figure 4-17. Options Tab

2. If appropriate, click the **OCR Option** checkbox, and, when prompted, enter the authorization code communicated to you by Biscom to enable the option.

Notes: Once an option has been enabled, you can disable it and then reenable it without having to reenter an authorization code.

If enabling the OCR option, refer to the following section for OCR system requirement guidelines.

3. To increase the maximum number of fax ports that can be enabled on this fax server model (so long as your authorization code supports enabling that number), click the Maximum Fax Ports **Change** button. You are prompted to enter an authorization code that supports enabling the higher number.

OCR Option System Requirement Guidelines

You enable the OCR option in order to generate received faxes as searchable files. Since OCR is a CPU-intensive and time-consuming process, your system configuration – i.e., how many ports are receiving, how many ports are transmitting, how many transmit ports are translating from a native file format to TIFF – must be considered to conclude what CPU is needed. A CPU of appropriate power is required to ensure that more faxes are not being received than the system can OCR.

Internal performance testing has indicated that the typical server configuration of Dual Xeon 3.06Ghz, with 1 Gb RAM can support up to 48 receiving ports doing OCR and 24 transmit ports performing native file translation. This performance testing transmitted typical two-page Word documents with dense text and a cover page, and represented *not* a peak load but rather a continuous, full load (i.e., all ports receiving one fax right after the other), with both transmit and receive ports configured for v.34 mode.

The following table can be used as a guideline for estimating CPU requirements, where all configurations assume a dedicated FAXCOM Server and fax length of three or four pages.

RX Ports	TX Ports	Mode	TX Attachment Types	System Configuration
48	48	v.34	TIFF (no translation)	Dual Xeon 3.06 Ghz, 1Gb RAM
48	24	v.34	Mix of doc, xls, pdf,…	Dual Xeon 3.06 Ghz, 1Gb RAM
24	24	v.17	TIFF (no translation)	Pentium 4 2.4 Ghz, 512 Mb RAM
12	24	v.17	Mix of doc, xls, pdf,…	Pentium 4 2.4 Ghz, 512 Mb RAM

Configure Dialing Rules and Least Cost Routing

Least Cost Routing (LCR) is an function that enables you to use your TCP/IP-based data network to route a fax to a remote FAXCOM Server, thereby minimizing the costs incurred when delivering faxes via long distance and international calls.

It is **NOT** necessary to enable the full Least Cost Routing function in order to take advantage of two of its dialing rules features: the capability to designate that certain phone numbers be delivered to internally by the fax server, rather than dialed out over the telephone network; the capability to specify multiple area codes for a server located where an Area Code Overlay Plan has been implemented. For more information on using these features – **even if Least Cost Routing has not been**

enabled on the Options tab (Figure 4-16) – refer to the "Configuring Internal Phone Numbers," "Configuring Dialing" and "Configuring Local Exchanges" sections later in this chapter

Least Cost Routing Overview

Least Cost Routing (LCR) is a function that enables you to use your TCP/IP-based data network to route a fax to a remote FAXCOM Server, thereby minimizing the costs incurred when delivering faxes via long distance and international calls. Least Cost Routing – whereby the fax is converted to Group 3 or Group 4 format before being transmitted – occurs transparently and automatically once you have specified the necessary information.

When a fax request is received by the FAXCOM Server, it parses the recipient phone number and classifies the call as either local, long distance, international or internal. Based on a set of rules you have previously defined, the server may determine that the fax should be routed to a remote fax server for delivery via the telephone network, or dialed internally from the server – without any call made over the telephone network. (In fact, the flexibility of Least Cost Routing rules enables you to specify a back-up, secondary route over your data network to be used automatically in the event the primary route you have specified is unavailable.)

When the fax call completes, confirmation is sent back via the data network to the originating FAXCOM Server, in order to return transmission status to the fax sender – who is unaware that the fax was re-routed via the data network.

Figure 4-18 shows a basic implementation of Least Cost Routing.

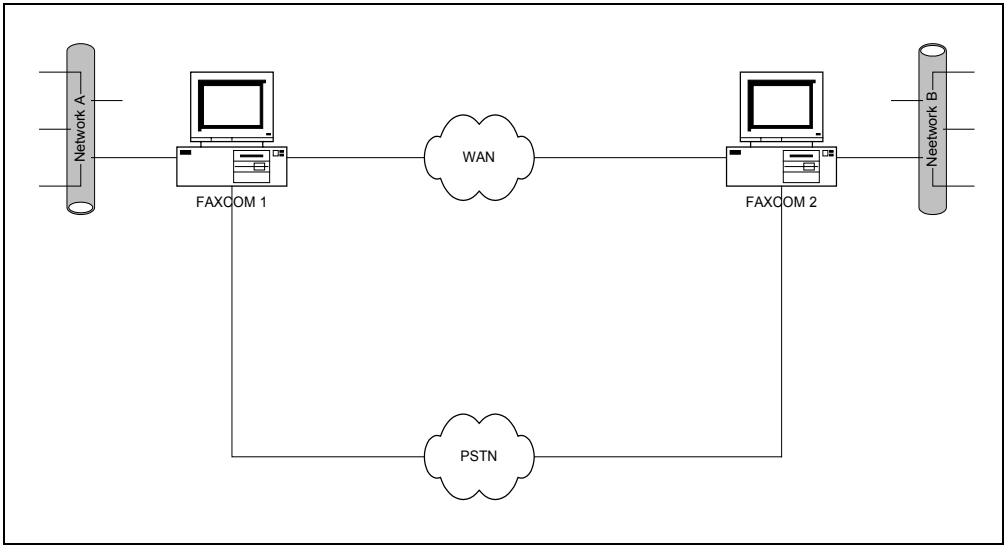


Figure 4-18. Basic Least Cost Routing Implementation

Least Cost Routing is integrated with the Alarm Management function to enable you to automatically monitor the Least Cost Routing links. (Refer to the "Configuring Alarm Management Events" and "Configuring Alarm Notification Methods" sections earlier in this chapter for more information on the Alarm Management function.)

Product Requirements

Least Cost Routing has the following requirements:

- At least two FAXCOM Servers in separate geographical locations
- A TCP/IP-based network (public or private) with routing between all locations where the FAXCOM Servers are located
- The TCP/IP option installed on each UNIX FAXCOM server in use; (TCP/IP is standard on the Windows FAXCOM Server)
- Remote FAXCOM Server(s) must use **TRAN** host port mode
- The Least Cost Routing program running on each FAXCOM Server
- First 8 characters of the computer name of each FAXCOM Server must be unique

Implement Least Cost Routing

To implement Least Cost Routing, you perform the following tasks:

- Configure the function
- Enable the function

Configure Least-Cost-Routing

For Least-Cost-Routing to occur automatically and transparently, you specify information on the **Dialing**, **Local Exchanges**, **Internal Numbers**, **LCR Routes** and **LCR Rules** tabs for each participating server. The **Dialing** information specifies the location of this server (i.e., the one on which you are running the Least Cost Routing configuration utility), and its associated area codes; the **Local Exchanges** information specifies the central office exchanges classified as local calls from this server, with the dialing format to use; the **Internal Numbers** information specifies those numbers that should be dialed internally by the server, rather than dialed externally over the telephone network; the **LCR Routes** information specifies the host IP address (or host name which maps to an IP address) and IP port of each remote server; the **LCR Rules** information specifies the matching pattern of digits that determines which route is used (and whether any alternate route is to be used automatically in the event the primary route you have specified is unavailable.

You can do the configuration locally or remotely, via the modem and pcANYWHERE communications software shipped with the FAXCOM.

Note: Since your FAXCOM server is shipped to you with only the pcANYWHERE Host PC component (i.e., server component), you would also have to purchase the pcANYWHERE Remote Control component (i.e., the client component) for a server that you wanted to configure remotely for Least Cost Routing. You can purchase the Remote PC component either from Biscom or from Symantec.

Configure Dialing

An aspect of configuring the location of a server used in Least Cost Routing is specifying its associated area code(s). A server can be associated with more than one area code because the demand for new telephone numbers has made it necessary to add new area codes for certain metropolitan regions of the United States and Canada (for example, in Massachusetts, Maryland and New York) by implementing an Area Code Overlay Plan. With an Area Code Overlay Plan, a new area code is simply added to the same geographic region where an existing code already works. That means that two area codes work in the same area (although only new phone lines and new telephone numbers will be given the new area code), without the need to change anyone's telephone number. For that reason, the Least Cost Routing option includes both the flexibility to specify multiple area codes for a server and support for both 7-digit and 10-digit (the Area Code + the 7-digit phone number) format dialing.

Notes: The Least Cost Routing function** does not **have to be enabled for you to associate your FAXCOM Server with more than one area code.

Do the following to specify the location of this server:

1. Click the **Configure** toolbar button  , and select the **Dialing** tab (Figure 4-19). (You can also select *Configure…Dialing* or *Configure…All Settings…Dialing*.)

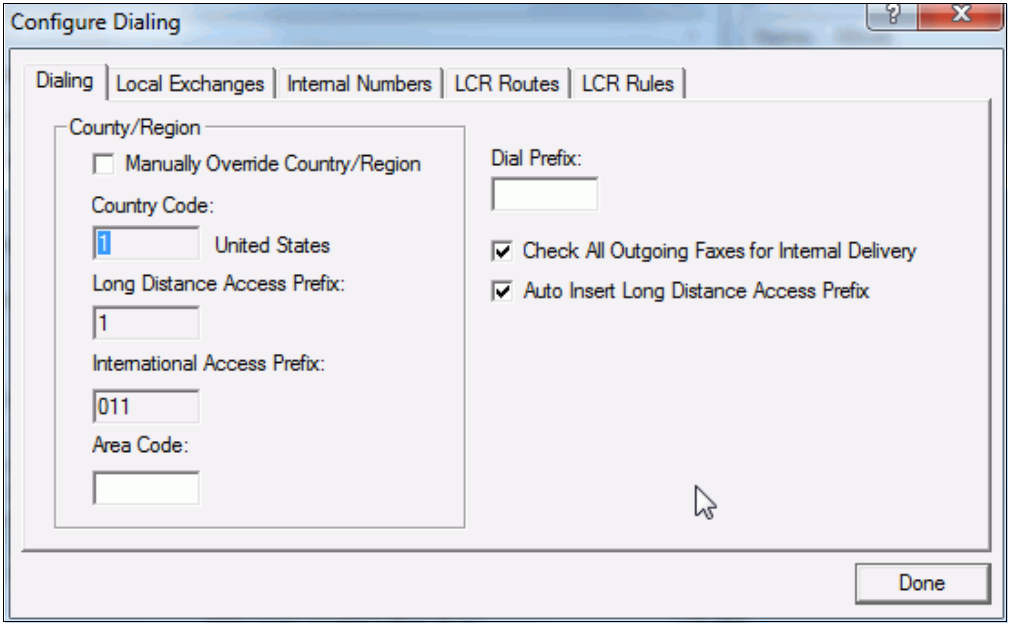


Figure 4-19. Dialing Tab

2. Fill out the Dialing tab as follows:

   Manually Overrride Country/Region – check this option if you live outside the US and want to and want to change any of the following fields on the Dialing tab:

   - Country Code
   - Long Distance Access Prefix
   - International Access Prefix

   Country Code – country code of this server's location, for example, 1 for USA, 44 for UK. The country code is computed automatically from the locale for which you configured Windows. If the displayed country code is incorrect, check the **Manually Override Country/Region** box and then enter the correct country code and access prefixes.

   Long Distance Access Prefix – long distance access prefix to be dialed by the server for long distance calls, for example, 1 in the USA. This number is automatically assigned based on the locale for which you configured Windows. If the displayed country code is incorrect, check the **Manually Override Country/Region** box and then enter the correct international access prefix.

   International Access Prefix – international access prefix to be dialed by this server for international calls, for example 011 for USA. This number is automatically assigned based on the locale for which you configured Windows. If

the displayed country code is incorrect, check the **Manually Override Country/Region** box and then enter the correct international access prefix.

Area Code – enter the telephone area code of this server's location; to specify multiple area codes if the server is in a region where an Area Code Overlay Plan has been implemented and local calls (not toll calls) can be made to an area code different from the server's, do so on the Local Exchanges tab (Figure 4-19) – explained in the "Configure Local Exchanges" section immediately following. If you need to configure the server so that it avoids dialing a long distance access prefix (such as 1), do so by selecting the Local Exchanges tab (Figure 4-19), and then configuring the appropriate Dial Format for the local exchanges for a specific area code.

Dial Prefix – any digit you want the server always to dial before the fax number, such as a 9 to exit an office exchange; if the host application already prefixes the digit, do not enter the prefix value here, since it would cause the server to dial an extra digit and be unable to connect to the remote fax machine

Check All Outbound Calls for Internal Delivery – check this box to specify that **all** outgoing fax calls be checked for whether they are found in the Dialing Rules and LCR Current Internal Phone Numbers table. If you do not check this box, **only those calls that arrive from a remote server to this server via Least Cost Routing** are checked against the Current Internal Phone Numbers table.

(Since it is necessarily time-consuming to check **all** outgoing numbers against the table, it is recommended that you do **not** check this box unless your site has a particular reason to route many calls internally [as, for example, when employees frequently fax material to themselves before faxing to a customer].)

Note: You can designate phone numbers as internal by entering them into the Dialing Rules and LCR Current Internal Phone Numbers table** even though **the Least Cost Routing function is not enabled at your site. For more information on entering phone numbers into the Dialing Rules and LCR Current Internal Phone Numbers table, refer to the "Configuring Internal Numbers" section later in his chapter.

Auto Insert Long Distance Access Prefix – check to specify that the server should automatically insert a 1 **only** if it detects the specified long distance fax number to be dialed contains only 10 digits. If, for example, the fax sender entered 978-250-1800 as the destination fax number, the server would dial 1-978-250-1800, enabling the call to go through correctly. This capability applies only to servers in countries with Country Code 1 (i.e., US, Canada, some Caribbean countries).

Configure Local Exchanges

On the Dialing tab (Figure 4-18), you specified an area code for the server. Use the Local Exchanges tab (Figure 4-19) to configure local exchanges and dialing formats to use with the area code you specified on the Dialing tab.

You can also use the Local Exchanges tab to define additional area codes (and their associated local exchanges and dialing formats) if, for example, you are located where an Area Code Overlay Plan has been implemented.

Note: If necessary, refer to your telephone directory, or contact your telephone services provider, to obtain a list of the local exchanges used in your region.

Do the following to specify the local exchanges and dialing formats associated with the area code you specified on the Dialing tab (Figure 4-18), and, if appropriate, define additional area codes and their local exchanges/dialing formats:

1. Click the **Configure** toolbar button  , and select the **Local Exchanges** tab (Figure 4-20). (You can also select *Configure…Local Exchanges* or *Configure…All Settings…Local Exchanges*.)

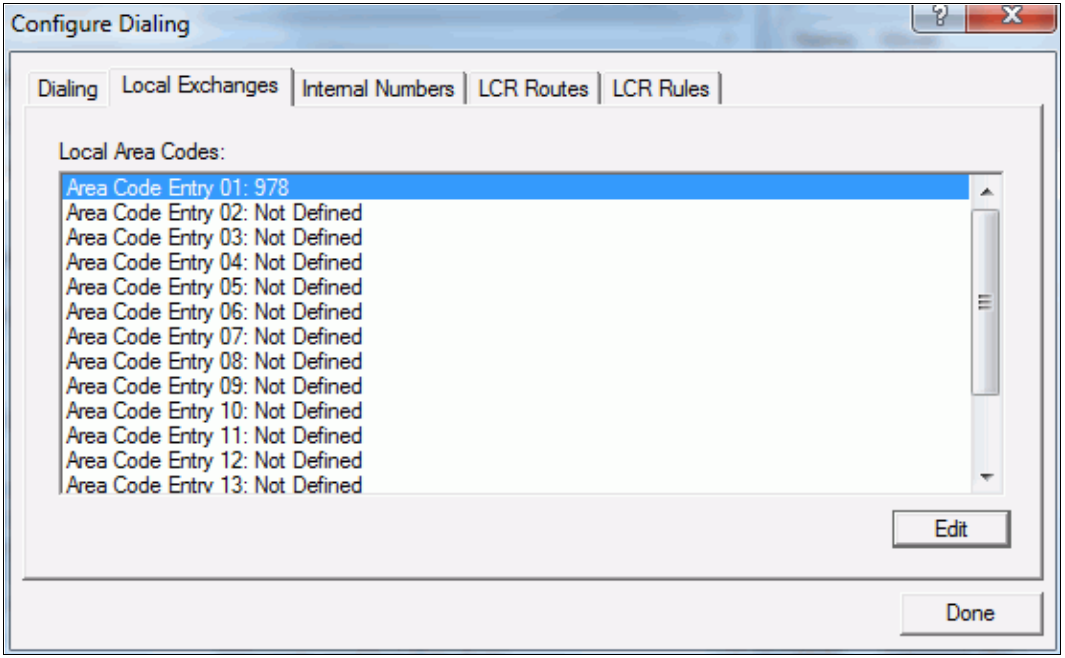


Figure 4-20. Local Exchanges Tab

2. Do either of the following:

- Select the area code you previously specified on the Dialing tab and click the **Edit** button to display the Local Exchanges dialog box for that area code (Figure 4-21).

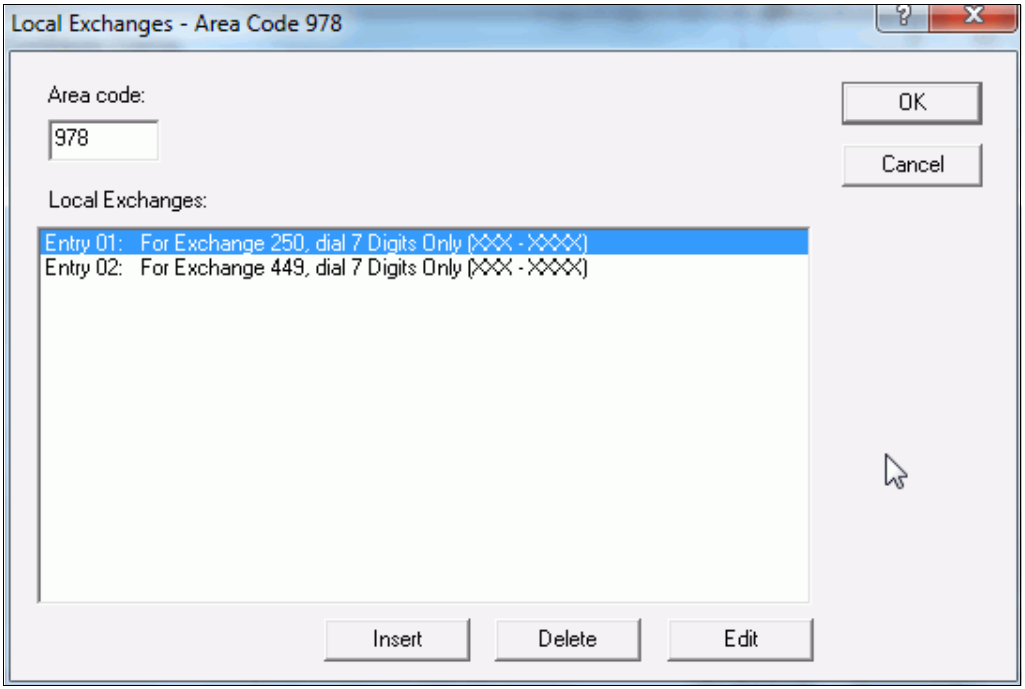


Figure 4-21. Local Exchanges Dialog Box for Specified Area Code

Or

- Select an entry such as "Area Code Entry 2: Not Defined" and click the **Edit** button to display the Local Exchanges – Define new Area Code dialog box (Figure 4-22). Specify an area code in the *Area code* box.

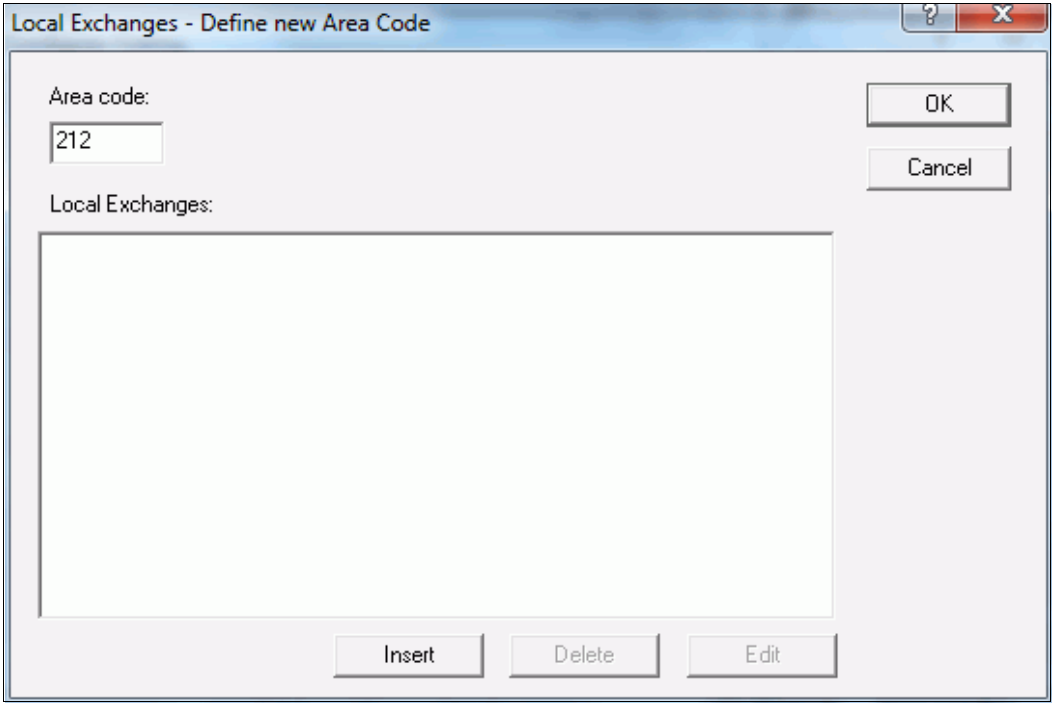


Figure 4-22. Local Exchanges – Define New Area Code Dialog Box

3. To insert a new exchange, click the **Insert** button. A Local Exchange dialog box is displayed (Figure 4-23).

Figure 4-23. Configure Local Exchange Dialog

4. In the **Local Exchange** box, specify a central office exchange within that particular area code) classified as a local call from this location. *When specifying multiple exchanges, you can use the **X** wildcard character, as, for example, 25**X**, **XXX**, etc.*

5. In the **Use Dial Format** list box, select the appropriate dialing format from the two dialing formats available. Click **OK**.

6. Repeat steps 4 and 5 to add as many local exchange entries as is appropriate.
7. To modify/delete a previously-specified local exchange, select the entry (on the Local Exchanges dialog box) and click **Edit**/**Delete** as appropriate.

Configure LCR Routes

Do the following to define remote routes (up to a maximum of 30) to other servers by specifying the Host IP address/Host Name and IP port of each remote FAXCOM fax server:

1. Click the **Configure** toolbar button  , and select the **LCR Routes** tab (Figure 4-24). (You can also select *Configure…LCR Routes* or *Configure…All Settings…LCR Routes*.)

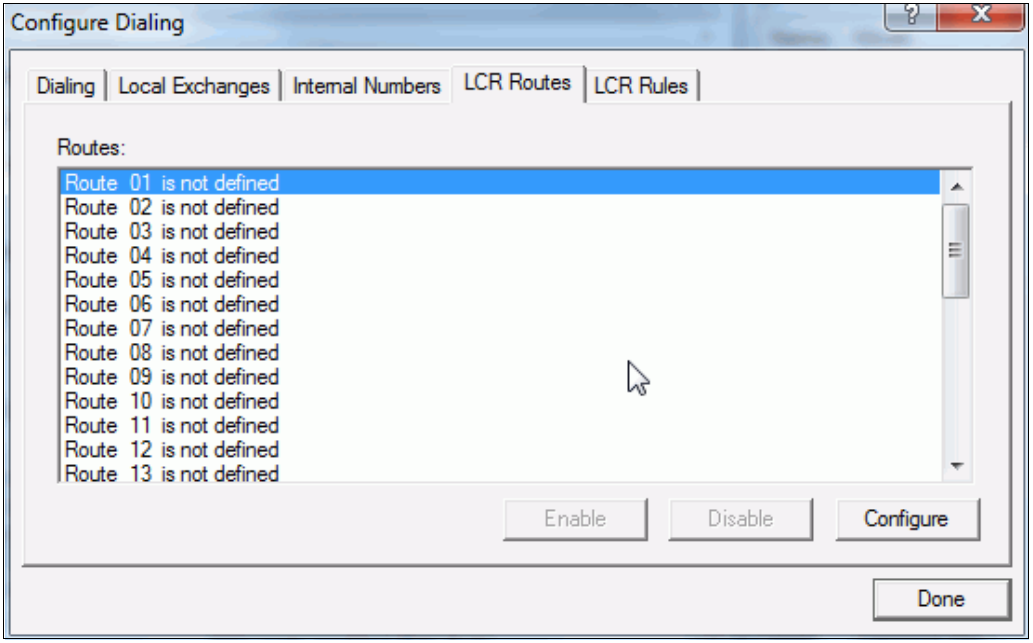


Figure 4-24. LCR Routes Tab

2. Select the route for which you want to specify information, and click the **Configure** button to display the LCR Route dialog (Figure 4-25).

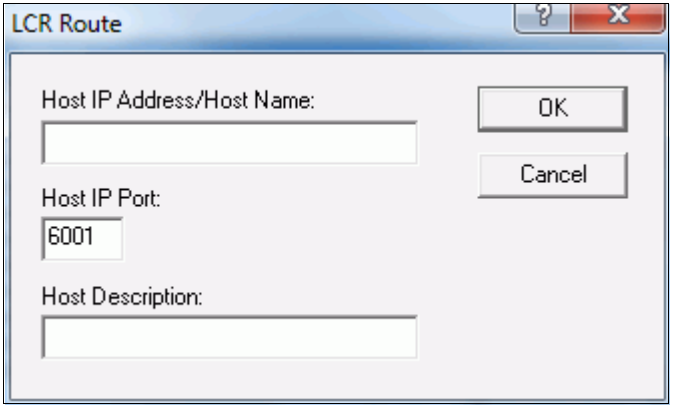


Figure 4-25. LCR Route Dialog

Note: You can enter either an IP address or a host name** – the first 8 characters of which must be unique for each FAXCOM server – **into the Configure Route dialog box Host IP Address/Host Name field. If you enter a name, however, you must have previously entered that name into either the local Host table** (…`\WINNT\system32\drivers\etc\host`**), or DNS and mapped the host name to an IP Address. The fax server program then does a look-up in either the local host table or DNS to determine the IP address to which that host name is mapped. (The advantage to being able to specify a host name, rather than the IP address, is that you can change the IP address of the host without having to respecify the entry in the Configure Route dialog box Host IP Address/Host Name field.) If you enter an IP Address, it is not necessary to have an entry in the Host table or DNS.

3. Specify the host IP address (in dot notation, for example, 128.1.1.4), or the host name (in the exact format in which you entered it into the Host table or DNS) in the **Host IP Address/Host Name** box, the host IP port in the **Host IP Port** box and a brief description (such as "Server in New York"), for a specific route and press **OK** to save the information. **Be aware that you cannot leave this field blank.**
4. If appropriate, repeat the process of specifying the Route information for additional routes.
5. Once you have specified the information for each route to be configured and are returned to the LCR Routes tab (Figure 4-24), select either **Enable** (for a Disabled route) or **Disable** (for an Enabled route), as is appropriate for each route.

   Depending on your choice, the route is either enabled or disabled.

   You are now ready to establish the Rules that pertain to a given route.

Configure Rules

Do the following to configure the rules used to dynamically select a given route based on telephone number:

1. Click the **Configure** toolbar button  , and select the **LCR Rules** tab (Figure 4-26). (You can also select *Configure…LCR Rules* or *Configure…All Settings…LCR Rules*.)

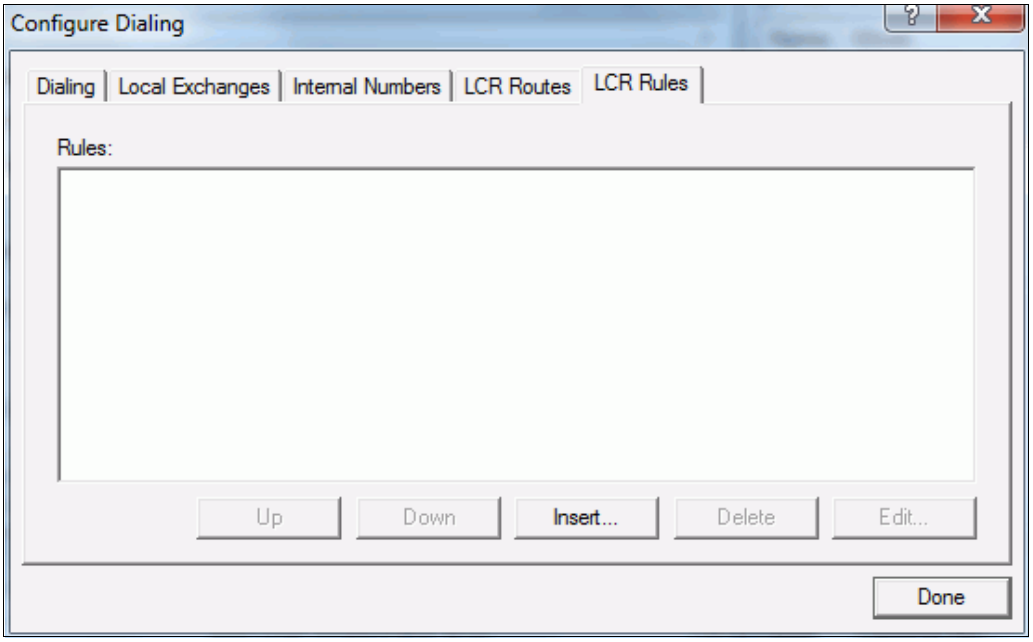


Figure 4-26. LCR Rules Tab

2. Either select a current rule entry and click the **Edit** button, or click the **Insert** button to add a new entry above the current cursor position. (Bear in mind that the order of entries is crucial since the rules are selected according to the first match found in the list. Therefore, if appropriate, you can always highlight an entry on the list and click either the **Up** or **Down** button to move it.) The LCR Rule dialog is displayed (Figure 4-27).

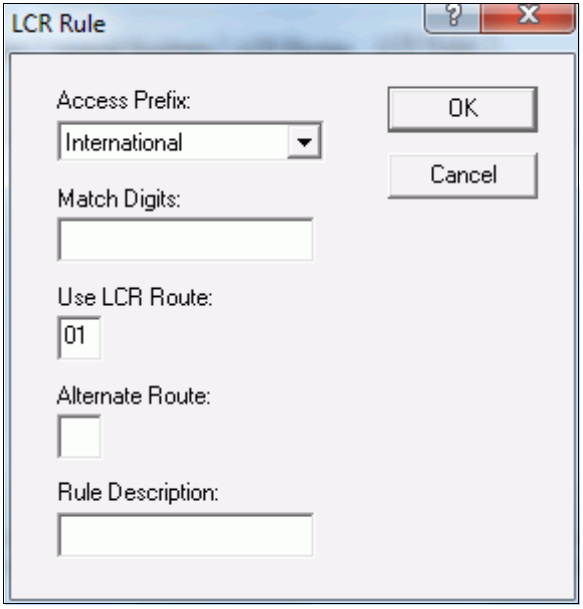


Figure 4-27. LCR Rule Dialog

3. Specify the appropriate information as follows:

   Access Prefix – select either Long Distance or International as the access prefix to be dialed

   Match Digits – area code (for Long Distance) or country code (for International) to be associated with a specified route

Note: when specifying the area code/country code digits, you can use the X character (either upper or lower case) as a wildcard.

   You can also enter a Match Digits string to specify a rule for a particular region or city within the same country code (enabling you to select different routes to the same country code).

   An example of a Rule entry is **7A08**, where

   7 is the Country Code

   A is the delimiter that specifies the end of the Country Code, and

   08 is the specific region within that Country Code for which this rule is being created

   Use LCR Route – is a **required** value that specifies the primary (first-choice) route to be associated with the specified area code/country code; (route 0 is used to specify the local server)

Alternate Route – is an **optional** value that specifies the secondary (second-choice) route to automatically be used in the event the primary route (specified in the **Use Route** field) is unavailable

Rule Description – label that identifies the rule being configured

Use the `local.lst` File

If it is more efficient, you can enter the local exchanges associated with an area code directly into a text file, rather than use the Least Cost Routing user interface. In major metropolitan areas, with millions of phone subscribers, there can easily be many local exchanges (since each local exchange services about 10,000 phone numbers).

The text files for local exchanges are located in the `u\ims\server` directory, with the following naming convention: `local.lst` for area code #1, `local2.lst` for area code 2, `local3.lst` for area code 3, `local4.lst` for area code 4,etc.

The format of an local exchange text file is as follows:

```
R. 1.0                  <LF>
250         0           <LF>
272         1           <LF>
256         0           <LF>
```

where the first line is the revision number, followed by a line feed

each local exchange entry is on a separate line, separated by a space or tab from the dialing format parameter to be used (either `0` or `1`), followed by a line feed

and the dialing format parameters are

`0` to specify dial 7 digits (*XXX-XXXX*)

`1` to specify dial 10 digits (*XXX-XXX-XXXX*)

Configure Internal Numbers

You can enter certain phone numbers into the Internal Numbers table that will be delivered internally by the server, rather than being dialed out over the telephone network.

On the Dialing tab (Figure 4-19, you can choose whether **all** outbound calls are checked to determine if the number to dial has been entered into the Internal Phone Number table – or just calls routed through Least Cost Routing.

Do the following to specify numbers that are to be delivered internally by the server, rather than being dialed over the telephone network:

1. Select the **Internal Phone Numbers** tab (Figure 4-28), displaying any currently-configured internal phone numbers.

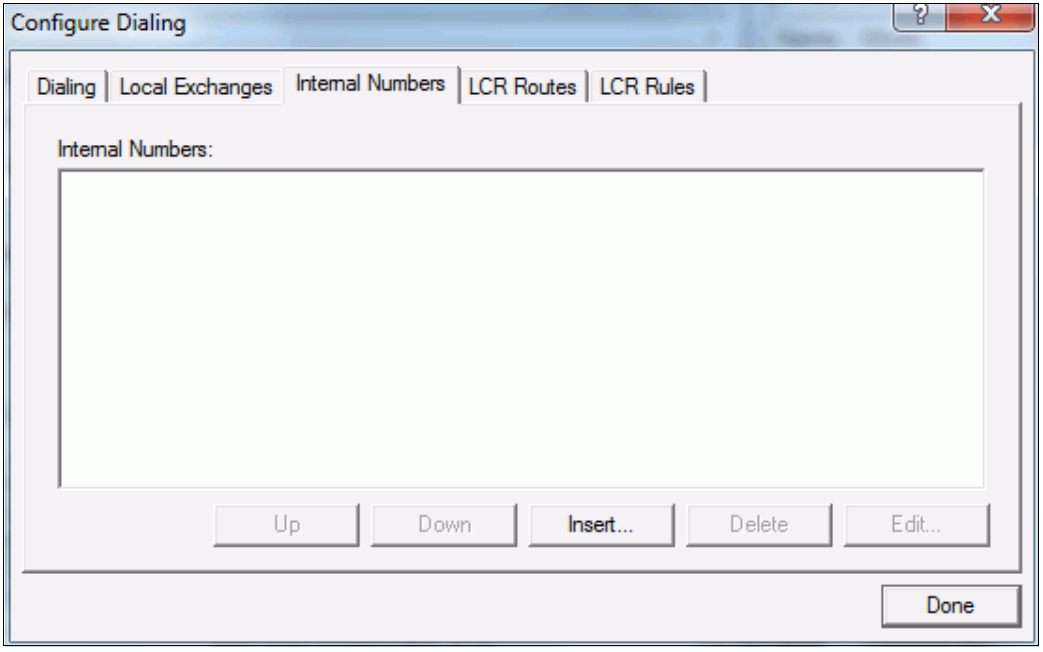


Figure 4-28. Internal Numbers Tab

2. Either select a current internal phone number entry (by using the Up and Down buttons) and click the **Edit** button, or click the **Insert** button to add a new entry above the current cursor position. The Internal Numbers Entry dialog is displayed (Figure 4-29).

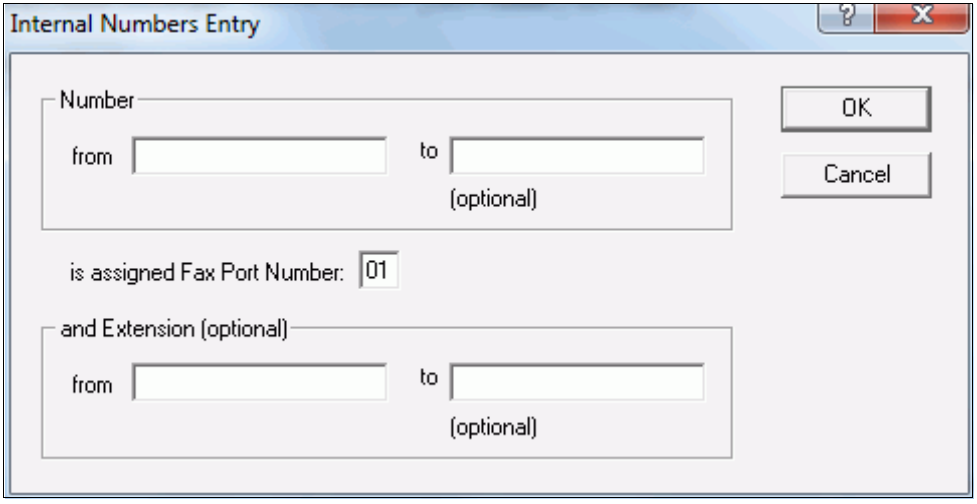


Figure 4-29. Internal Numbers Entry

3. Enter values as follows:

   Number from (**required** field) – specify either the first of a range of fax numbers, or a single fax number

   Number to (optional field) – if specifying a range of numbers, enter the last number in the series

   Is assigned Fax Port Number (**required** field) – specify the fax port to be used for routing the specified number(s); if not using fax port routing, leave the default entry of *01*.

   and Extension from (optional field) – if using DTMF, DID or PBX TIE Line routing, specify the first of a range of extensions, or a single extension

   and Extension to (optional field) -- if specifying a range of extensions, enter the last extension in the series

Note: Since the Least Cost Routing table of internal numbers correlates with the Inbound Routing table, make sure that you have configured a* Destination Type *entry for the specified Line Number or specified Extensions through the Inbound Routing utility. If necessary, refer to the Configuring* Inbound Routing *section for more information.

   Click **OK**.

4. To remove a currently-configured entry from the Internal Phone Numbers table, use the **Up** and **Down** buttons to select the entry on the Internal Numbers tab (Figure 4-27), and click the **Delete** button.

Understand Least Cost Routing Logs

The following logs contain Least Cost Routing information:

\u\ims\lcr.log – Least Cost Routing transmissions

\u\ims\lcrerr.log – Least Cost Routing transmission errors, whereby there was an error when attempting to reroute the call via the network

\u\ims\server\lcrlstats – Lifetime Least Cost Routing statistics

\u\ims\server\lcristats – Interval time Least Cost Routing statistics

\u\ims\server\lcr*xx*lstats – Per route lifetime statistics (where *xx* is the route number)

\u\ims\server\lcr*xx*istats – Per route interval statistics (where *xx* is the route number)

The following completion status codes apply to Least Cost Routing:

0200 Least Cost Routing option not installed

0201 Least Cost Routing option disabled

0202 Bad Least Cost Routing address specified, i.e., IP address

0203 Unable to contact remote site

0204 Lost contact with remote site

0205 Least Cost Routing agent error preparing job

0206 Least Cost Routing agent unable to extract destination country code from phone number

Configure a Translation Server

The Translation Server automatically translates native file fax attachments to the TIFF format suitable for faxing. The native file types currently supported by the Translation Server are:

- MS Word
- MS Excel
- MS PowerPoint
- MS Project
- MS Publisher
- MS Access Snapshot files
- Lotus 1-2-3
- Lotus FreeLance
- Lotus WordPro
- WordPerfect
- Visio
- Adobe Acrobat
- HTML documents

There are four Translation Server options:

Internal – a program running internally on the FAXCOM server

External – the FAXCOM NT Translation Server (which has been superseded by the Internal option)

ConServR – the file converter program from Lincoln & Co

Xpdf – an open-source PDF viewer

This chapter describes the configuration and implementation of the **Internal** Translation Server.

How the Translation Server is Shipped in a FAXCOM Server Pre-built at Biscom

When you receive FAXCOM Server with the internal Translation Server already installed, the Microsoft Office suite (MS Word, MS Excel, MS PowerPoint) is already installed for you so that you can translate those documents. In addition, Internet Explorer is already installed, which enables you to translate Web page HTML documents. If you then want to translate any of the additional supported applications (MS Project, the Lotus suite, WordPerfect, Visio, Adobe Acrobat), you must install those applications yourself.

How to Install Translation Server Applications in a Customer-Built FAXCOM Server

Refer to Appendix F for instructions for installing Adobe Acrobat and the MS Office suite (MS Word/Excel/PowerPoint) according to Translation Server requirements. Appendix F also lists special considerations for successfully using the Translation Server.

Configure the Internal Translation Server

You configure your internal Translation Server by specifying the document extensions used with your native files.

You can also use the Alarm Management function to monitor the Translation Server for errors. (Refer to the "Configuring the Alarm Management Function" section earlier in this chapter for more information about the Alarm Management function.)

Do the following to configure an internal Translation Server:

1. Click the **Configure** toolbar button  , and select the **Translation Server** tab (Figure 4-30). (You can also select *Configure…Translation Server* or *Configure…All Settings…Translation Server*.)

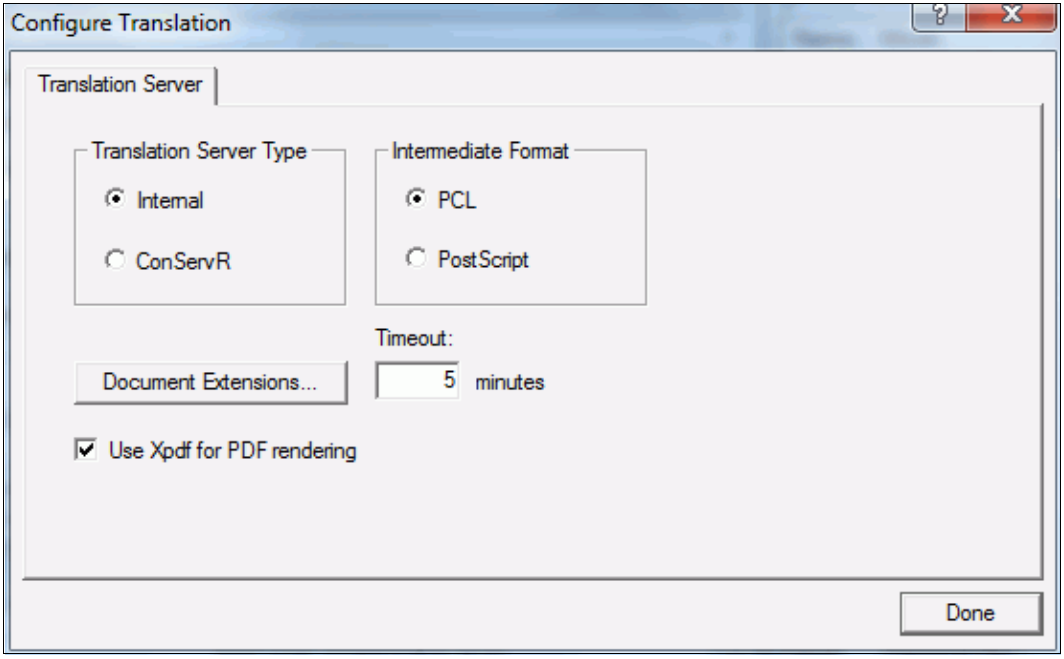


Figure 4-30. Translation Server Tab

2. In the **Translation Server Type** box, check the **Internal** button.
3. In the **Intermediate Format** box, accept the default of PCL (unless advised to do otherwise by Biscom Technical Support).
4. In the **Timeout** box, specify the maximum time in minutes allotted to the Translation Server to convert a document, after which time the Translation Server will send a timeout message to the FAXCOM Server application; the FAXCOM then responds by issuing a command to the Translation Server to terminate the application; the default is five minutes.
5. **Use Xpdf for PDF rendering** – select this checkbox in order to use the embedded PDF viewer to render PDF documents, rather than having to install Adobe Acrobat.
6. Click the **Document Extensions...** button to display the Document Extensions table (Figure 4-31), listing the current document extensions for all the currently-supported applications.

   Note that while the supported applications are listed for you, only the three Microsoft Office applications (MS Word, MS Excel and PowerPoint) and Internet Explorer, which were installed for you at Biscom) default to *Enabled*, while the others (which you must install yourself) default to *Disabled*.

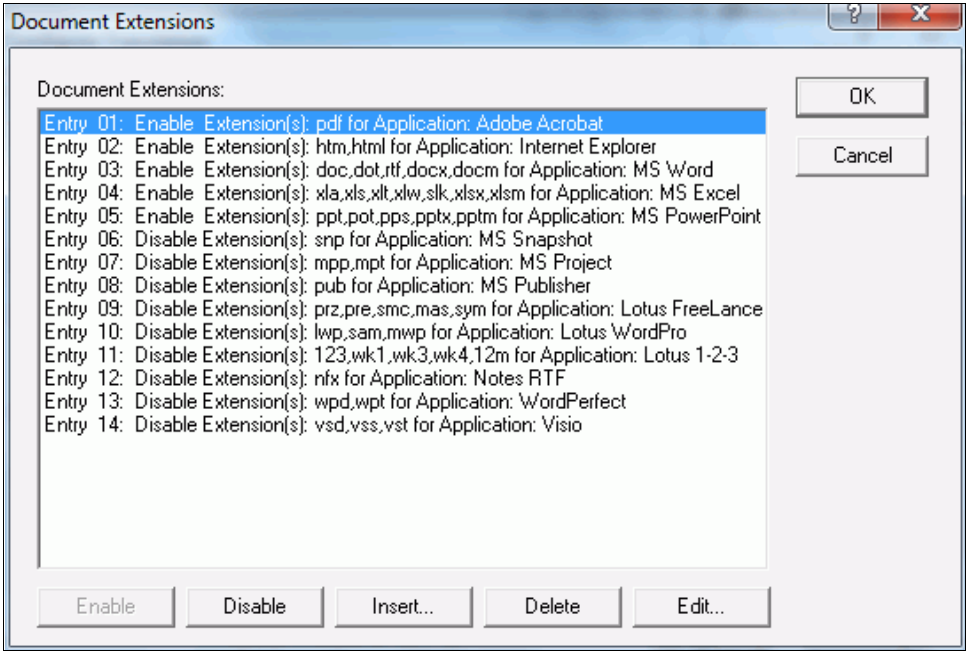


Figure 4-31. Document Extensions Table

7. Be aware of the following consideration before using any of the functions in the table:

   - For you to successfully translate the native documents of an application, that application must fulfill two requirements: it must be an application currently supported by the Translation Server, and it must be an application that is currently installed (so that the extension(s) associated with the application were automatically added to the registry when the application was installed on the computer where the Translation Server program is running). In other words, you cannot successfully translate either the native files of an application Biscom does not currently support (for example, CorelDRAW), or the native files of a supported application that is not installed (for example Visio) – and you may receive the following error message when attempting to configure the applications (Figure 4-32).

Figure 4-32. Unregistered Application Error Message

Note: It is possible you may not receive this error message for an installed, unsupported application (since it is registered), and the translation of the files created by this unsupported application may or may not be successful.

8. If appropriate, do any of the following in the Document Extensions table (Figure 4-30) – where the list order of the table is irrelevant:
   - Click the **Enable** button to enable a disabled entry
   - Click the **Disable** button to disable an enabled entry
   - Click the **Delete** button to delete an entry
   - Click the **Insert** button to display the Document Extension Entry dialog (Figure 4-31) to add an entry (only for an additional supported application); enter the document extensions, separated only by commas (no spaces or periods), and enter a description of the application for your own reference.
   - Click the **Edit** button to display the Document Extension Entry dialog (Figure 4-33) to modify an entry.

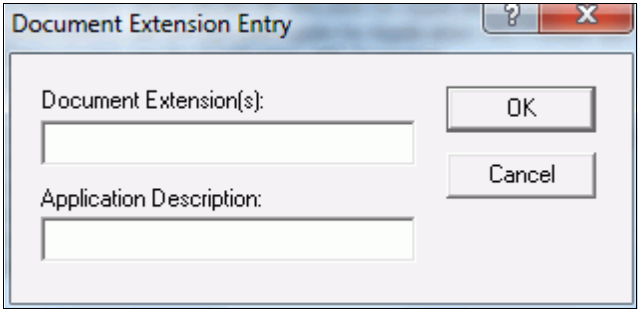


Figure 4-33. Document Extension Entry Dialog

To insert/edit an entry in the Document Extension dialog box, specify the document extension(s) associated with the application (as listed in the registry) in the *Document Extensions* box; enter the document extensions, separated only by commas (no spaces or periods), and enter a description of the application for your own reference.

Click the **OK** button to save your changes (which take effect immediately).

Configure Data Archive

The FAXCOM Server Administrator program includes the capability to store copies of fax jobs. You configure what fax jobs to archive according to *Job Type* and *Result Type*, and you have the following archiving choices:

- Successfully transmitted faxes

- Successfully received faxes
- Successfully transmitted and received faxes
- Successfully and partially transmitted faxes
- Successfully and partially received faxes
- Successfully and partially transmitted and received faxes

You can archive fax jobs sent and received by any local fax port, including jobs that were Least Cost Routed via a remote fax server, as well as jobs that were internally delivered. The main archive directory is `u\ims\archive`, which includes the function's log files and operating files. The archived data itself is stored in the `u\ims\archive\data` subdirectory. The files are stored as multipage TIFF Group 3 images, with the naming format of `q`*`XXXXXXXX`*`.tif`, where *`XXXXXXXX`* is an incrementing number starting at 00000000. For example, the first job archived would be assigned the name `q00000000.tif`, the second `q00000001.tif`, etc.

Do the following to configure Data Archive:

1. Click the **Configure** toolbar button  , and select the **Data Archive** tab (Figure 4-34). (You can also select *Configure…Data Archive* or *Configure…All Settings…Data Archive*.)

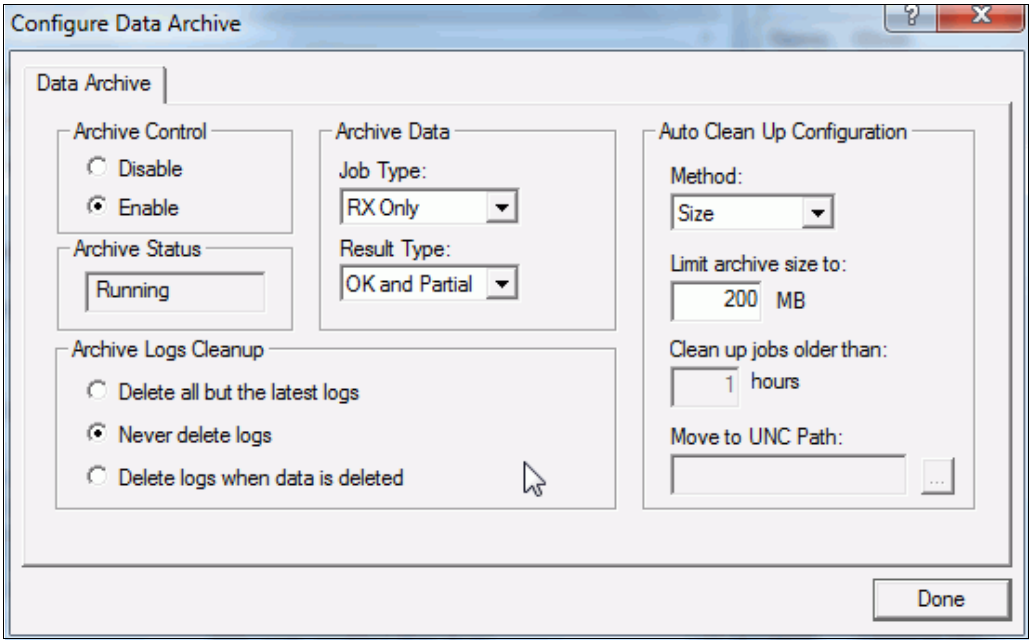


Figure 4-34. Data Archive Tab

2. Fill in the following fields:

   Archive Control – check **Enable** to activate the function; check **Disable** to specify no fax copies be made and stored

   Archive Status – whether or not the data archive function is running

   Archive Data Job Type – select **TX/RX** to store both transmitted and received jobs; **TX Only** to store only transmitted jobs; **RX Only** to store only received jobs

   Archive Data Result Type – select **OK Only** to store only successful jobs; **OK and Partial** to store both successful jobs and partially successful jobs (i.e., at least one page delivered/received); fax jobs that return a transmitted/received page count of zero are **not** archived.

   Auto Clean Up Configuration

   Method – select **None** if the archived data directory is not to be cleaned up by any automatic method; select **Size** to specify archived data should be cleaned up once the directory exceeds the value specified in the Max*. Size* field; select **Age** to specify archived data should be cleaned up once the age limit specified in the *Max. Age* box is exceeded; select **Move** to specify archived data should be migrated to the UNC path specified in the *UNC Path* field

   Max. Size – (enabled only if you selected *Size* for the Auto Clean Up Method), specify the maximum size in MB the data in the archival directory can occupy before the cleanup agent starts to delete the oldest files from the directory – with the following consideration:

Note: be aware that since the cleanup agent runs every 15 minutes, it is possible for more than the specified Max. size to accumulate before the cycle runs. For example, if you have a 24-line system and (worse-case) 2 MB of data accumulates for each line in 15 minutes, potentially an extra 50 MB of data could accumulate (for a total of 100 MB) before the directory is trimmed back to 50 MB.

   Max. Age – (enabled only if you selected *Age* for the Auto Clean Up Method), specify the age limit in hours before archived data is deleted from the directory

   UNC Path – (enabled only if you selected *Move* for the Auto Clean Up Method), specify the UNC path to a remote file share where data is migrated every 15 minutes when the cleanup agent runs. Be aware that since the FAXCOM Server is running as a Windows 2000 service using system account privileges, to have access privileges to the remote share, you will probably need to configure the *Log On As* Account for the FAXCOM service and set it to an Administrator account (i.e., a member of the Administrator group) that has access privileges to the remote file share and requires a password. (You configure the *Log On As* Account by selecting *Start…Settings…Control Panel…Services*. Select the ***Faxcom*** service and click the **Startup** button.)

   Archive Logs Cleanup

Delete all but the latest logs – check to specify that all but the last two Archive Activity logs be automatically overwritten each time they reach the maximum size of 500 KB and renamed to arcold.log.

Never delete logs – check to specify that each time the Archive Activity log reaches its maximum size of 500 KB, it be renamed to arc*XXXXXXXX*.log, where *XXXXXXXX* is an 8-digit incrementing number starting at 00000001. Make sure you check this check box *only* if you are using another, external application to automatically purge these files; otherwise, these files could eventually fill up the disk.

Delete logs when data is deleted – check to specify that when the archive clean up deletes the data files for the old faxes, the log files for that time period are also deleted; in other words, the number of log files kept is determined by the number of actual faxes kept in the archive.

Click **OK**. Be aware that the new archive configuration changes will **not** take effect until the next time the Fax Server application is restarted.

Archive Log Sample

The following is an excerpt (with 3 entries) from an archive log (u:\ims\data\arc.log):

```
Archived: \u\ims\archive\data\q00009800.tif --> tx ok  via internal on 02/05/1999
01:26:36, Fax Line: 01, To: Jim Harrison, Phone Number: 40, Company: , Subject: hello
, Status Code: 0000[ ok ], 001 Pages, in 0000 secs, Baud Rate: 14400 , Resolution: L,
Remote Fax ID: SMTP FAX 1          , Job ID: 9454, User Id:
<bagudelo@test.biscominc.com>, User Name: Bill Agudelo Account

Archived: \u\ims\archive\data\q00009801.tif --> rx ok  via internal on 02/05/1999
01:26:36, Fax Line: 01, Status Code 0000[ ok ], 001 Pages, in 0000 secs, Baud Rate:
14400 , Resolution: L, Remote Fax ID: , DID/DTMF Digits:

Archived: \u\ims\archive\data\q00009802.tif --> tx ok  via internal on 02/05/1999
01:41:33, Fax Line: 01, To: Jim Harrison, Phone Number: 40, Company: , Subject: test
, Status Code: 0000[ ok ], 001 Pages, in 0000 secs, Baud Rate: 14400 , Resolution: L,
Remote Fax ID: SMTP FAX 1          , Job ID: 9455, User Id:
<bagudelo@test.biscominc.com>, User Name: Bill Agudelo Account
```

Configure SMTP Integration

The FAXCOM Server integrates with TCP/IP-based Simple Mail Transfer Protocol (SMTP) networks in the following ways:

- Alarm notifications sent as SMTP mail messages to a remote SMTP mailbox
- Support for Mailsend, a FAXCOM Command Language (FCL) command – primarily used by third-party integrators – that tells the FAXCOM Server to e-mail a job to an SMTP mail recipient (instead of faxing it to a fax number)
- Support for inbound routing of incoming faxes to an SMTP mailbox

- Support for the SMTP Gateway included in FAXCOM Suite for Windows, which works with the Microsoft SMTP service to enable network users to transmit (**ONLY**) MIME-encoded e-mail messages to remote fax machines.

Chapter Five: Manage and Monitor the FAXCOM Server

Overview

Once you have configured your server, you perform the following basic tasks through the FAXCOM Server Administrator program to manage your FAXCOM server:

- Backup the appropriate directories
- Control the FAXCOM service (by starting/stopping/pausing the service)
- Manage Fax ports
- Simulate an alarm
- Clear an alarm
- Monitor the Translation Server
- Locate Form and Signature Files
- View and search through log files
- Save the desktop
- Save/send/restore configuration and log files
- Provide remote access to Biscom support personnel
- Use Netstat to troubleshoot networking TCP/IP problems
- Verify the TCP stack is operational
- View status for the following:

    Alarms
    Fax Ports
    Host Ports
    Installed Options
    Job Statistics
    Tasks

Note: Make sure that you always shut down your FAXCOM Server by following the proper shutdown procedure: click the** Start **button, click** Shut Down**, and then click** Shut Down The Computer**. DO NOT turn off your computer until the "You can now safely turn off your computer" message appears.

You can also log off your FAXCOM Server so someone else can use it by doing the following: click the** Start **button, click** Shut Down**, and then click** Close All Programs And Log On As A Different User**.

Backup the Appropriate Directories

The following lists the directories you should backup on the FAXCOM Server:

Configuration Files

\Program Files\Biscom\FAXCOM Server\u\FAPI\Cfg

\Program Files\Biscom\FAXCOM Server\u\ims\server

\Program Files\Biscom\FAXCOM Server\u\ims\fax

\Program Files\Biscom\FAXCOM Server\u\ims\home

\Program Files\Biscom\FAXCOM Server\u\ims\host

\Program Files\Biscom\FAXCOM Server\u\ims\sessions

\Program Files\Biscom\FAXCOM Server\u\ims\smtp

\Program Files\Biscom\FAXCOM Server\saveCfg\u\mdqs\qconf (file)

Log files

\Program Files\Biscom\FAXCOM Server\saveLog\u\FAPI\Log

\Program Files\Biscom\FAXCOM Server\saveLog\u\ims

\Program Files\Biscom\FAXCOM Server\saveLog\u\usr\tmp

\Program Files\Biscom\FAXCOM Server\u\ims\archive

Control the FAXCOM Service

Controlling the FAXCOM service consists of starting, stopping and pausing the service, as follows:

Start the Service

You can start the FAXCOM Server service via any of the following ways:

1. Click the **Start Service** button  in the toolbar. You will see ***FAXCOM Service running*** in the lower left corner of the window

   or

2. Click the **Action** menu and select *Control FAXCOM Service…Start or Resume Service*

   or

3. In the command-line interface (*Start…Programs…Accessories…Command Prompt*), enter **`net start faxcom`**.

Stop the Service

Stopping the FAXCOM Server service interrupts all fax calls in progress - both receiving and transmitting. Inbound faxes in progress will stop with a failure message sent to the sender. The queue will indicate which outbound messages in progress were successfully or partially transmitted; the outbound faxes will continue transmission once the service is re-started.

Biscom recommends that if you must stop the service while there is fax port activity, you should first pause the service. You can view current fax port activity on the Fax Ports window.

You can stop the service via any of the following ways:

1. Click the **Stop Service** button  in the toolbar

   or

2. Click the **Action** menu and select *Control FAXCOM Service…Stop Service*

   or

3. In the command-line interface (*Start…Programs…Accessories…Command Prompt*), enter **`net stop faxcom`**.

Pause the Service

When the service is paused, the server allows fax ports to complete transmissions or receptions which are in progress, but no new jobs will be processed. When the in-progress jobs are completed, the service is in a state of "limbo" until you indicate whether to stop or start the service. Note that pausing the service does not prevent the sending of e-mail messages from the server. You can pause the service via any of the following ways:

1. Click the **Pause Service** button  in the toolbar

or

2. Click the **Action** menu and select *Control FAXCOM Service…Pause Service*.

   Pausing the service initiates an action that takes 6 seconds, during which the mouse pointer displays as an hourglass icon. Operation of the user interface is suspended during a 6-second interval, during which time you cannot enter any input.

Manage Fax Ports

Do the following to manage fax ports, which consists of **Starting**, **Stopping** and **Configuring** the port:

- Click the **Configure** toolbar button  , and select the **Fax Ports** tab. (You can also select *Configure…Ports…Fax Ports* or *Configure…All Settings…Fax Ports*.)

  To start the port, highlight the port and click the **Start** button.

  To stop the port, highlight the port and click the **Stop** button.

  To configure the port, highlight the port and click the **Configure** button to display the Configure Fax Port dialog box.

  Follow the instructions in the "Configuring Fax Ports" section in Chapter 4.

Manage Host Ports

Do the following to manage host ports, which consists of **Starting**, **Stopping** and **Configuring** the port:

- Click the **Configure** toolbar button  , and select the **Host Ports** tab. (You can also select *Configure…Ports…Host Ports* or *Configure…All Settings…Host Ports*.)

  To start the port, highlight the port and click the **Start** button.

  To stop the port, highlight the port and click the **Stop** button.

  To configure the port, highlight the port and click the **Configure** button to display the Configure Host Port dialog box.

  Follow the instructions in the "Configuring Host Ports" section in Chapter 4.

Simulate an Alarm

Do the following to simulate an alarm for testing purposes (if the option is configured according to the procedures in the "Configuring Alarm Management Events" and "Configuring Alarm Notification Methods" sections in Chapter 4):

1. Select **Alarms** from the **Action** pull-down menu.
2. Select **Simulate Alarm**.

   You may view the alarm on the Current Alarms window before clearing the alarm (by selecting *View…Alarms*).

Clear an Alarm

To clear an alarm that has triggered, do the following:

1. Select **Alarms** from the **Action** pull-down menu.
2. Select **Clear Alarm**, or click the Clear Alarm button  in the toolbar.

Monitor the Translation Server

With the Alarm Management Function:

If your site is using both Translation Server and the Alarm Management functions, you can specify that an alarm be generated in the event of Translation Server errors. These errors can be of two kinds: connection errors between the FAXCOM and the Translation Server (only when using an external Translation Server) and translation errors, whereby the Translation Server is not able successfully to translate a job.

The information displayed for a translation error is particularly helpful for the following reason:

In the event of an error converting any single attachment (if there are multiple attachments), the entire fax job is declared unsuccessful. Moreover, the message returned to the originator of the failed outgoing fax does not indicate the specific attachment that failed That information is, however, available to the fax server administrator, who can then inform the fax originator of precisely which attachment had the problem (and perhaps advise him/her to resubmit the job without the attachment that caused the problem).

To view more information for the alarm, click  to display the Alarm log. Translation Server errors are shown as Alarm 40.

(You can also click  and select the **Alarm Log** itself to see alarm information that is not limited to the last 5 alarms, and that is not flushed every time the system is rebooted.)

Without the Alarm Management Function:

If your site is using Translation Server without also enabling the Alarm Management function, you will not automatically be notified in the event of a Translation Server error, but you can still display information for the Translation Server by selecting *View…Log…Launch Event Viewer*. The Event Viewer Applications log includes information for all alarms, and an entry for each time the fax service is started/stopped.

To display the details of a specific event, double-click the event to display the Event Detail window.

Manage Images

You can merge images stored on the FAXCOM with outgoing faxes by issuing a FAXCOM Command Language (FCL) command to invoke the image.

Be aware of the following considerations for these images:

- Images consist of named two-dimensional 1-bit per pixel digital images designed to be printed at 200 dpi
- Image size must not exceed 1728 dots per row and 2233 rows
- Image names consist of from 1 to 63 alphanumeric characters
- Each image is stored in a file using either PCX/DCX format or one of the following TIFF formats
  - Uncompressed
  - Packed Bits
  - Group 3 1D
  - Group 4 with no uncompressed lines
  - LZW-encoded
- Files containing the images are stored in the \ims\home directory
- File names of the files containing the image conform to one of two naming conventions, depending on the FCL command used to invoke the image, either:
  - FORM*x*.FAX, where *x* is the name of the image and the image is to be invoked by the $FORM$ FCL command

- SIGN*x*.FAX, where *x* is the name of the image and the image is to be invoked by the SIG FCL command

View and Search Through Log Files

You can view various log files, including ones you have previously stored, and use the Filter and Find functions, as follows:

Choose a Log File to Open

Do the following to open a log:

1. Select **Log** from the **View** pull-down menu to display a list of the logs you can view (Figure 5-1).

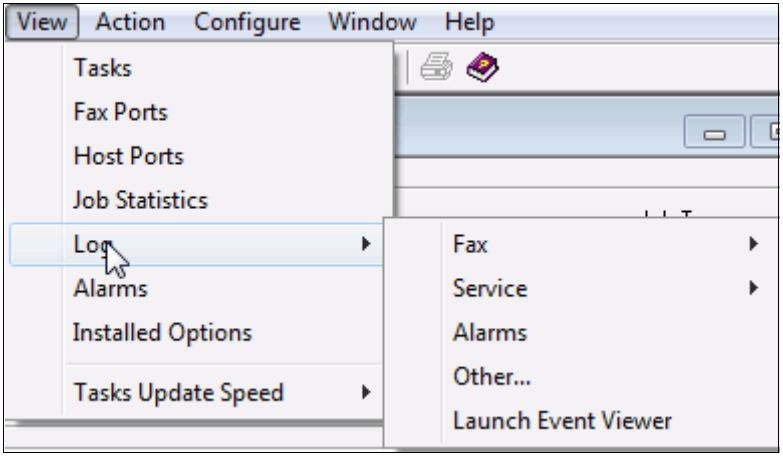


Figure 5-1. View Log Menu

You can also click the View Logs button  to choose a log (Figure 5-2).

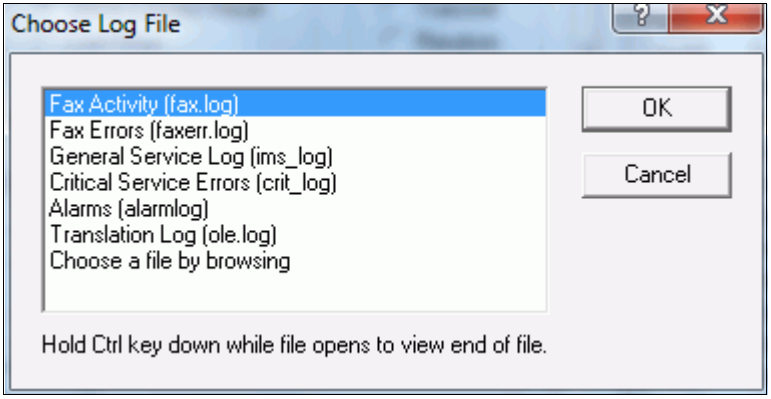


Figure 5-2. Choose Log File

2. Choose either a specific log, or browse your file listing for a log you previously saved as a text file.

Filter a Log

You can filter any of the logs to display search criterion you enter. The filtered information is displayed in a new window, and you can switch back and forth between your original log window and the filtered information window. You can also execute the filter function again to further refine your search.

Do the following to filter a log:

1. With a log displayed, select **Filter** from the **Edit** pull-down menu to display the Filter Log View dialog (Figure 5-3).

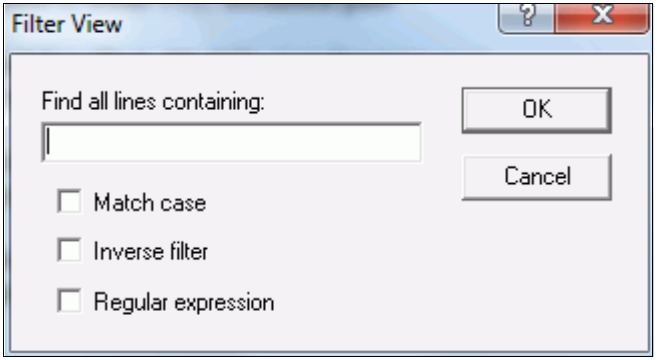


Figure 5-3. Filter Log View Dialog

2. In the **Find all lines containing** box, enter the filter criterion text with which to search the log. The FAXCOM Server program matches patterns that conform to

a standard regular expression as used in UNIX. If appropriate, check any of the following:

Match Case – whereby the filter view distinguishes between uppercase and lowercase characters. When you check **Match case**, the filter view finds only those instances in which the capitalization matches the text you typed in the **Find all lines containing** box

Inverse Filter – whereby the filter view displays all lines **NOT** containing the string you type in the **Find all lines containing** box

Regular Expression – whereby the filter view matches patterns of text that consist of ordinary characters, as, for e.g., letters a through z, and special characters, known as metacharacters, as, for e.g., ^, \, [. The regular expression serves as a template for matching a character pattern to a string being searched.

The filtered information is displayed in a new window, with each matching instance of the filter criterion on its own line.

3. If desired, click the **Print** toolbar button to print either the filtered log or the log itself.

Use the Find Function in a Log

You can search any log for a specific search string, as follows:

1. With a log displayed, select **Find** from the **Edit** pull-down menu to display the Find dialog (Figure 5-4).

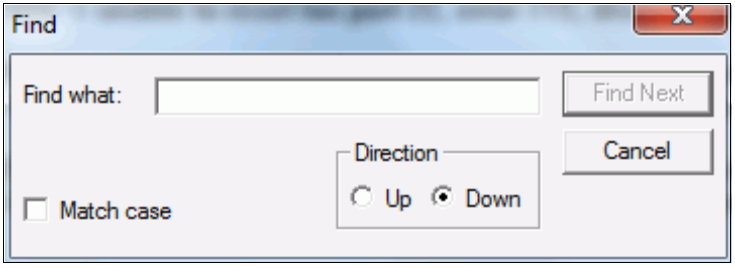


Figure 5-4. Find Dialog

2. In the **Find What** box, enter the string for which you want to search.

   To distinguish between upper and lowercase characters, select the **Match case** check box.

   To specify the search direction, click either the **Up** or **Down** button.

   Once the first instance of the specified string has been located, click the **Find Next** button to find and select the next occurrence of the text.

Launch the Event Viewer

You can launch the Event Viewer from within the FAXCOM Server Administrator program. The Event Viewer records FAXCOM Server processing events, which includes information for all alarms, and an entry for each time the service is started/stopped.

Do the following to launch the Event Viewer:

1. Select **Log** from the **View** pull-down menu to display a list of the logs you can view.
2. Select **Launch Event Viewer** to go directly to the Event Viewer application (Figure 5-5).

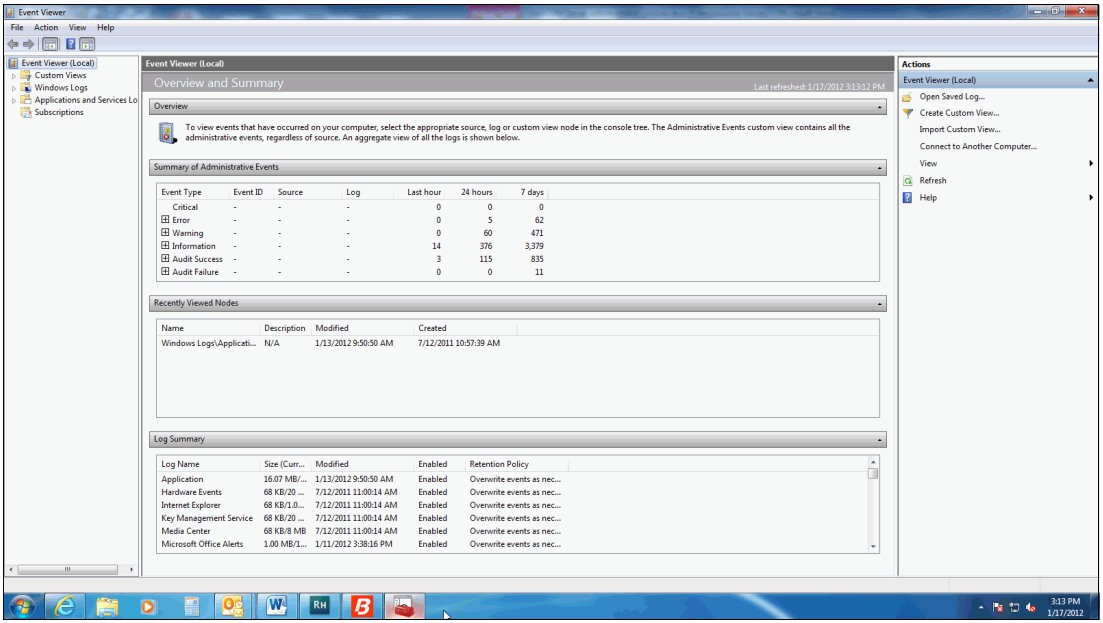


Figure 5-5. Event Viewer

3. Double-click the event to display its details (Figure 5-6).

Event Type	Event ID	Source	Log	Last hour	24 hours	7 days
Critical	-	-	-	0	0	0
Error	-	-	-	0	5	62
	1	bostservice	Application	0	3	27
	2	Kernel-EventTr...	Microsoft...	0	0	20
	37	FaxcomMailbo...	Application	0	0	3
	1000	Application Err...	Application	0	1	1

Figure 5-6. Event Details

If you have installed the Translation Server option, Translation Server connection and file translation errors are displayed, and the information is particularly helpful for the following reason:

In the event of an error translating any single attachment (if there are multiple attachments), the entire fax job is declared unsuccessful. Moreover, the message returned to the originator of the failed outgoing fax does not indicate the specific attachment that failed. That information is available through the Event Viewer to the FAXCOM Server administrator, who can then inform the fax originator of precisely which attachment had the problem (and perhaps advise him/her to resubmit the job without the attachment that caused the problem).

Launch Performance Monitor

You can invoke the Performance tool directly from the FAXCOM Server Administrator program, as well as from *Control Panel…Administrative Tools* – with the following difference.

When you invoke the Performance tool by clicking the **Performance Monitor** button on the Job Statistics window, the Performance Monitor launches and displays with the FAXCOM Fax Server-specific view. The FAXCOM Fax Server performance object installs with 6 counters:

- Rx Active Ports
- Rx Pages/Hour
- Total Active Ports
- Total Pages/Hour
- Tx Active Ports
- Tx Pages/Hour

The default counter is **Total Pages/Hour**.

To view performance on the other counters, do the following:

1. Click the **Add** button  .
2. Select FAXCOM Fax Server in the performance object list.
3. Select all counters or select specific counters in the counter list.

For more information on using the MMC system monitor snap-in, click the Help button  in the performance monitor window.

When you launch Performance Monitor from the Windows Start menu (*Start…Programs…Administrative Tools…Performance*), you must specify which performance object to monitorand then follow steps 1-3 above.

1. To invoke the Performance tool from the Fax Server Administrator program, either click the **View Job Statistics** toolbar button  , or select **Job Statistics** from the **View** pull-down menu to display the Job Statistics window.
2. Click the **Performance Monitor** button.

Save the Desktop

To save the arrangement of windows on your desktop when running the FAXCOM Server Administrator program, check the **Save Desktop** option from the **File** menu. If a check is visible, the desktop will be saved "as is" upon closing FAXCOM Server Administrator. If the check is not visible, the desktop will return to its default arrangement the next time it is opened.

Save/Send Configuration and Log Files

The FAXCOM Server Administrator program includes a function for saving configuration and/or log files – primarily so that you can later restore a previous configuration. The function also includes the capability to e-mail the saved files (particularly helpful when working with the Biscom Technical Support department).

Do the following to use the function:

Save Files:

1. Select **Save Configuration...** from the **File** menu to display the Save Files tab (Figure 5-7).

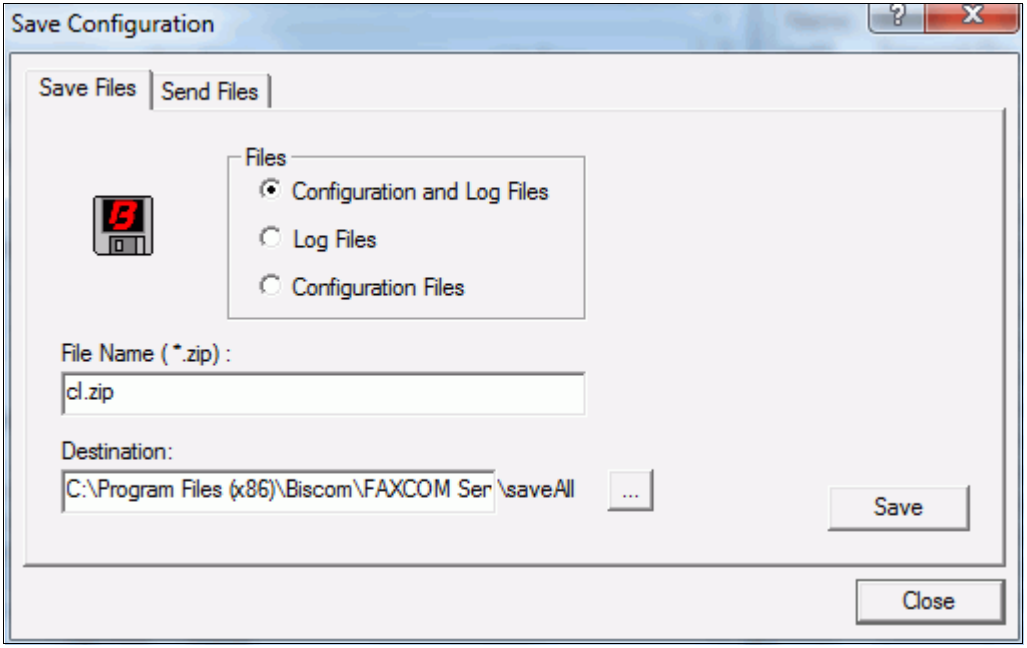


Figure 5-7. Save Files Tab

2. Select the appropriate radio button:

   Save Configuration and Log Files

   Save Log Files

   Save Configuration Files

   Notice that the radio button you select determines the file name as follows:

   Configuration and Log Files – `cl.zip`

   Log Files – `log.zip`

   Configuration Files – `cfg.zip`

3. Click the **Browse** button to specify the folder in which to create the specified directory and file. Click the **Save** button.

Send Files:

Do the following to send configuration and/or log files:

1. Select **Save Configuration...** from the **File** menu; select the Send Files tab (Figure 5-8).

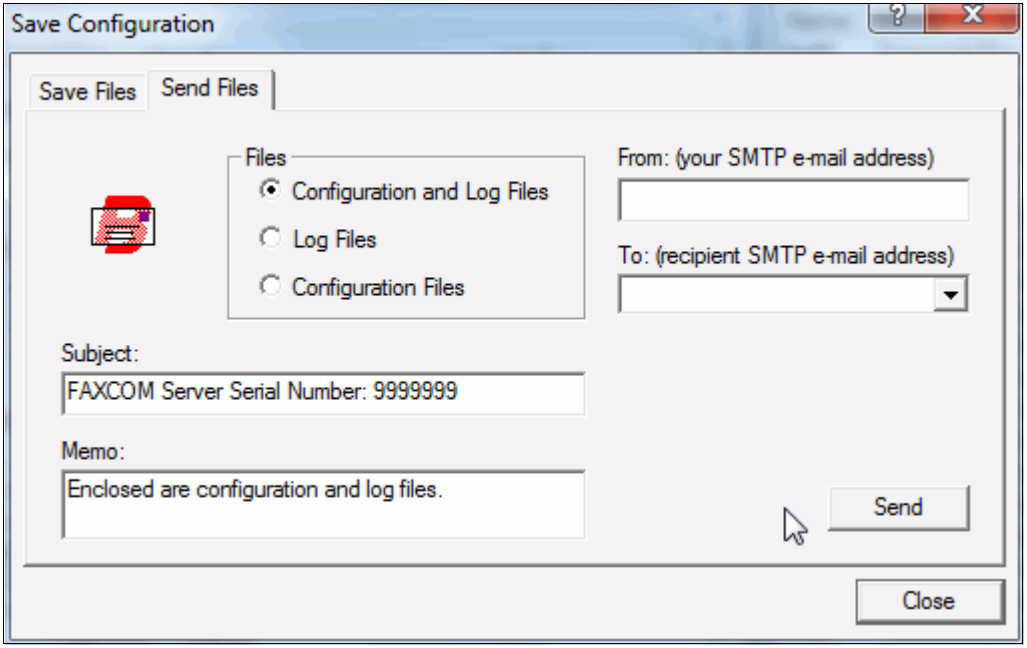


Figure 5-8. Send Files Tab

2. Select the appropriate files to send, either:

   Configuration and Log Files

   Log Files

   Configuration Files

   Notice that the radio button you select determines the suggested e-mail memo that describes the enclosed files.

3. If you wish, modify the pre-filled information in the Subject and Memo boxes; otherwise, keep the suggested information.

4. In the **From** box, specify the sender's e-mail address; in the **To** box, specify the recipient's e-mail addess. Click the **Send** button.

Restore Configuration and/or Log Files

When you choose to save configuration and/or log files, the files are saved into the specified directory location. In addition, the files are compressed into a zip file so that you can easily transfer them – via e-mail or ftp – to a remote location.

You restore configuration and/or log files by running the Windows Explorer program and doing a manual copy. Because the Save Configuration utility preserves the FAXCOM Server directory structure, you can restore your entire configuration by

copying to the \u directory. For example, if the FAXCOM Server is installed on the D drive, you would copy to D:\u.

Note: When restoring the files, be sure to exclude the following file (which will automatically be reproduced for you at system start-up): Biscom\FAXCOM Server\u\ims\server\bistran.ini.

Use netstat to Troubleshoot Networking TCP/IP Problems

You can use the netstat utility to troubleshoot networking TCP/IP problems. The utility displays currently active TCP connections, interface statistics and currently allocated buffers.

- At the command prompt, type **`netstat /?`** to access help for using netstat to display active TCP/IP connection information.

Verify the TCP Stack is Operational

Before using the following utilities, make sure the FAXCOM server is connected to a live network. If using the Token Ring interface, it is especially important that you make sure that the adapter cable is plugged into the FAXCOM **before** you apply power to the server.

You can verify the operation of the TCP stack as follows:

1. At the command prompt, type **`ping IP address`** (for example, 127.0.0.1).

   If the TCP stack is operational, messages such as the following are scrolled on the screen and continuously updated every few seconds:

   ```
   Reply from 127.0.0.1: bytes=32 time<10ms TTL=32
   ```

   If no messages appear, or do not get updated every few seconds, the TCP stack may not be operational.

2. If the command in step 1 was successful, perform an additional test, as follows:

   - Type ping <FAXCOM server name>

   where ***`FAXCOM server name`*** is the name displayed when you do the following:

   - Select *Start…Settings*.
   - Select *Control Panel…Network…FAXCOM*.
   - Select the **Identification** tab to display the FAXCOM Computer Name

   If the TCP stack is operational, messages such as the following are scrolled on the screen and continuously updated every few seconds:

   ```
   Reply from 127.0.0.1: bytes=32 time<10ms TTL=32
   ```

If no messages appear, or do not get updated every few seconds, the TCP stack may not be operational.

3. If the command in step 2 was successful, ping a known host IP address, preferably in the same segment.

View Fax Server Status

The Administrator program lets you view the following information:

View Tasks

If the Tasks window is not displayed in the FAXCOM Server Administrator program, click the View Tasks button  in the toolbar, or click the **View** menu and select **Tasks**.

The Tasks window (Figure 5-9) displays the status of each task currently active in the FAXCOM server. You can see a queued task summary, process task states, and job task states. You can sort on any of the fields in the table, but keep in mind that the task list continually updates. You will also see Completion Status Codes. A completion status code is returned for each fax transmission. Refer to Appendix A for a complete list of all completion status codes, with an explanation for each. (All but one completion status code is an error message.)

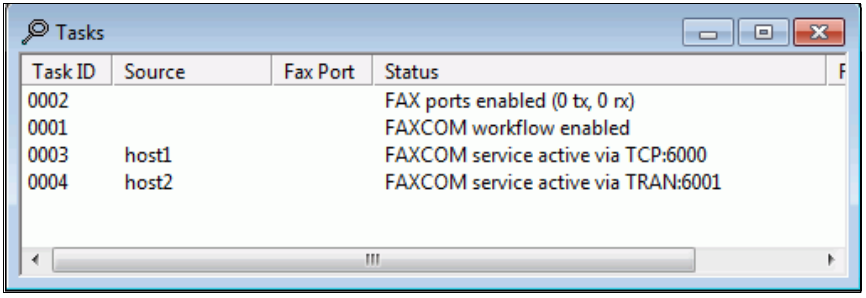


Figure 5-9. View Currently-Running Tasks

Queued Tasks Summaries:

If there are any queued tasks, you will see a single summary line for each category of queued task (conversion tasks, fax delivery tasks, fax receiving tasks, message delivery tasks, and LCR delivery tasks). No summary line displays if there are no queued tasks.

Process Tasks:

In the Tasks window you will find information for process tasks:

Fax ports task – this line item represents transmitting and receiving for all fax ports. Includes the number of fax ports enabled for transmitting (tx) and the number of fax ports enabled for receiving (rx).

Example: `FAX ports enabled (4tx, 4rx)`

Workflow task – this line item indicates that the workflow process is active. The workflow process is a single process that manages queued tasks, except for "`FAX delivery queued`." Appears in Tasks window as: `FAXCOM workflow enabled`

Host ports task(s) – one line item represents each active host port; includes host port, mode, and socket number. Examples include:

`FAXCOM service active via TCP:6000`

`FAXCOM service active via TRAN:6001`

Host connections task(s) – a host connection line item indicates one of the following:

`FAXCOM connected, waiting for job`

`FAXCOM connected, processing job`

`FAXCOM submitting job`

Job Tasks

Information on job tasks, displays in the Tasks window and then disappears when completed. There are a number of possible status messages you may see for job tasks:

Conversion tasks – when converting an outbound job to fax, print, or e-mail format, the status appears on the task list as one of the following:

`FAX conversion running`

`FAX conversion done`

Fax delivery tasks – when transmitting a fax, the job task status appears as one of the following:

`FAX delivery running (preparing to dial)`

`FAX delivery connecting (dialing or dialed and waiting for answer)`

`FAX delivery connected (answered; preparing to transmit)`

`FAX delivery transmitting`

`FAX delivery awaiting retry`

`FAX delivery done`

Fax receiving tasks – when receiving a fax, the job task status appears as one of the following:

```
FAX receiving active (including from whom and to whom)
FAX inbound routing active
FAX receiving done
```

Message delivery tasks – when delivering or receiving a message, the job task status appears as one of the following:

```
Message delivery active
Message delivery awaiting retry
Message delivery done
```

LCR delivery tasks -- when an outbound fax job is forwarded to another fax server, the status appears as one of the following:

```
LCR delivery contacting
LCR delivery contacted
LCR delivery transmitting
LCR delivery awaiting retry
LCR delivery done
```

Tasks Update Speed

Tasks, as they are viewed in the Tasks window (Figure 5-9) or the FAXCOM Server Administrator main window, generally update every 3 seconds. To change the speed at which the current tasks are updated, follow these steps:

1. Click the **View** menu, and select **Tasks Update Speed.**
2. Select one of the following options:

   High – tasks update every 1 second

   Normal – tasks update every 3 seconds

   Low – tasks update every 10 seconds

   Paused – tasks do not update until *High*, *Normal*, or *Low* is selected or until the window is closed and reopened

The task update speed resets to *Normal* each time the FAXCOM Server Administrator program is restarted.

View Fax Ports

Fax Ports – each fax port according to its current configuration and current state, as follows (Figure 5-10):

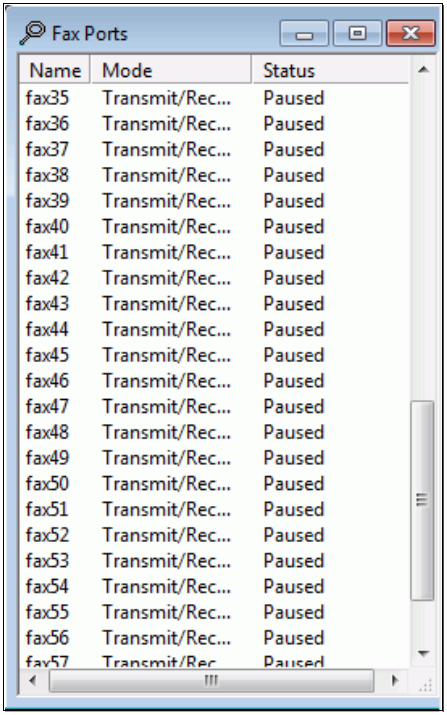


Figure 5-10. View Fax Ports Window

Name – fax*nn*, where *nn* is the number of the fax line (fax01 – fax96)

Mode – either **Transit/Receive** if both outbound and inbound traffic is handled; **Transmit Only** if only outbound traffic is allowed, with no incoming calls answered; **Receive Only** if only inbound fax traffic is to be handled, with no outbound fax jobs queued to this port; Disabled if the fax port has been manually set to neither receive nor transmit faxes.

Status – refers to a fax port's current state. Status designations include:

Idle – port has been started and is not processing

Stopped – port service was stopped

Paused – port will not start a new job, but will finish transmitting or receiving any job currently active on the port

Transmitting – port is currently transmitting a fax

Receiving – port is currently receiving a fax

Not Installed – no hardware board is present

Bad line – port has been disabled after two consecutive no-dial-tone errors occur if port has been configured for auto disable (see Configuring Fax Ports). Typically seen when a phone line is disconnected.

Down – an error that requires re-initialization has occurred.

No response – initialization attempt has failed, and port cannot be used

Transient status designations, which only occur very briefly, include:

Starting – port service is starting up

Stopping – service is stopping

Initializing – port is initializing

View Host Ports

Host Ports – each Host Port according to its current configuration and current state, as follows (Figure 5-11):

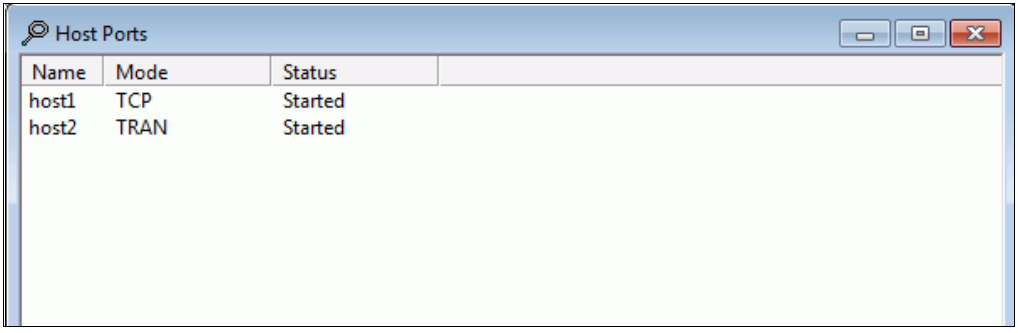


Figure 5-11. View Host Ports Window

Name – host*n*, where *n* is the number of the host port

Mode – Connection Mode, where **TCP** is communication over TCP/IP connections; **TRAN** is communication over TCP/IP using Sessions mode to enable multiple FAXCOM Queues to share the same host port; **SMTP** is communication over an SMTP port to a FAXCOM Queue that receives email messages to be delivered as faxes; **COM** is for communication to a single FAXCOM Queue, and is generally a much slower connection used in legacy environments, such as one without TCP/IP.

Status – either **Stopped** or **Started**.

View Job Statistics

Job Statistics – a display of server operation data which you can configure according to: Calculation Method, Time Span and Job Type. From the View Job Statistics window, you can also launch the Performance Monitor to view additional data. Figure 5-12 shows the Job Statistics display.

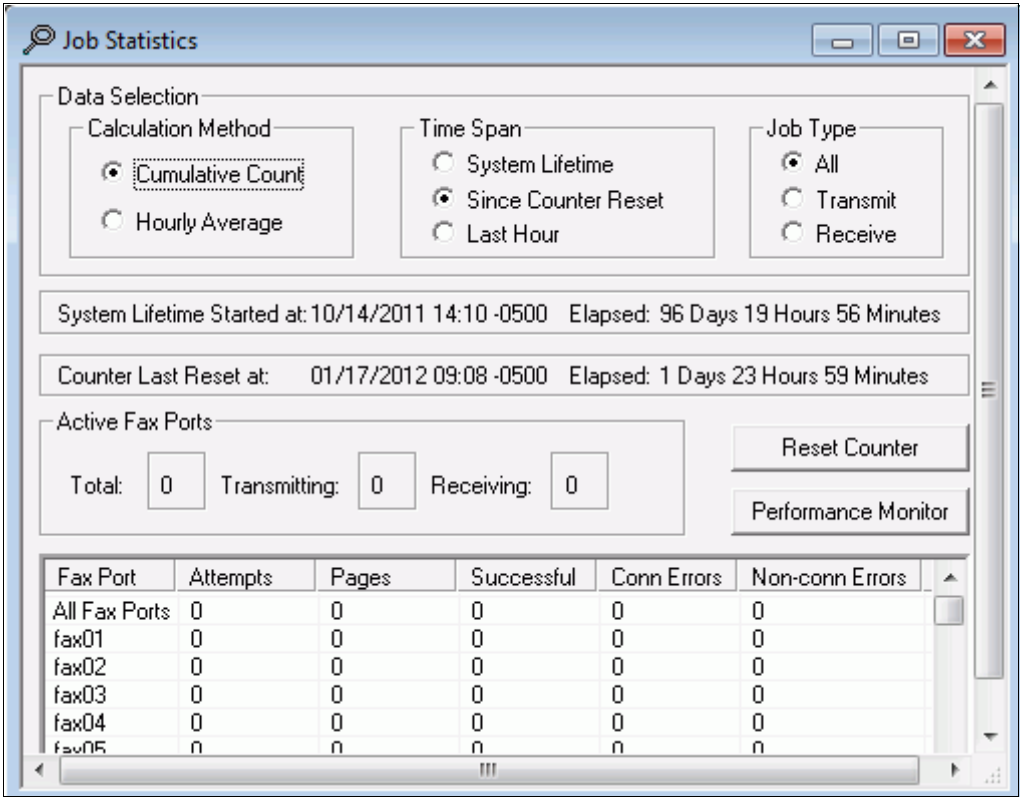


Figure 5-12. View Job Statistics Window

When you choose to view fax server Job Statistics, you can specify various parameters that determine how data is displayed, as follows:

Data Selection – either calculated cumulatively over the System Lifetime, or averaged hourly

Time Span – either

- spanning the System Lifetime (from when the system was first installed at the factory)
- since the counter was either manually reset by clicking the **Reset Counter** button, or automatically reset at reboot
- for the last 60 minutes

Job Type – either *All* (both Transmit and Receive), *Transmit only*, *Receive only*

In this window, you can also click the **Reset Counter** button to reset the counter.

Fax port data displays in the table at the bottom of the window. It includes information that does not display in the Fax Ports window. In the Job Statistics window, you can view the additional information:

Attempts – number of attempted transmissions since last counter reset

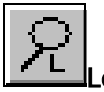
Pages – cumulative number of pages transmitted on that port

Successful – number of attempts that were successful

Conn Errors – connection errors that occurred while the port was connected, resulting in a failed attempt; some pages may have been transmitted

Non-conn Errors – errors that occurred prior to achieving connection, resulting in a failed attempt; no pages were transmitted

View Logs

 **Logs –** any of the following:

Fax Activity log – includes a line for both successful and failed fax transmit/receive attempts.

Fax Error log – Records only errors associated with the transmission and receipt of faxes. If there are few errors, this log keeps a longer record of activity since it's only including errors.

General Service log – records the activity of the various server software processes, and is typically used for diagnostic purposes.

Critical Service Errors log – records certain meaningful events that are typically errors, though not necessarily errors, and which is generally used for diagnostic purposes.

Alarm log – records all activity of the Alarm Management function.

Translation log – records conversion events, including errors

Choose A Log by Browsing – other logs which you have saved as text files.

View Alarms

 **Alarms** – a memory-resident version of the Alarm log (Figure 5-14) that gives information for the last 5 alarms, according to:

Number – Alarm ID

Date/Time – when alarm was generated

Type -- Alarm event type

Module – generating alarm

More Info – a short message describing the alarm event

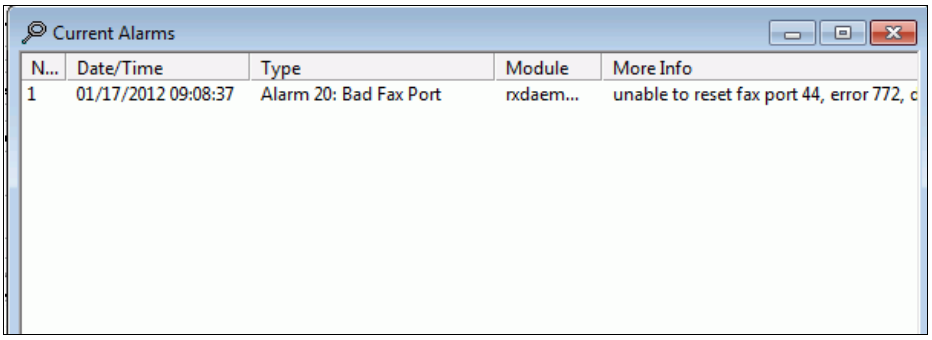


Figure 5-13. View Alarm Log Window

Refer to the Alarm Log itself to see alarm information that is not limited to the last 5 alarms, and that is not flushed every time the system is rebooted. Refer to the "Clearing an Alarm" section earlier in this chapter for more information on clearing an alarm that has been triggered.

View Installed Options

Installed Options – a display (Figure 5-14) of the server model and maximum fax ports, plus a list of the available server options and whether each is currently installed or not, accessible by selecting **Installed Options** from the **View** menu.

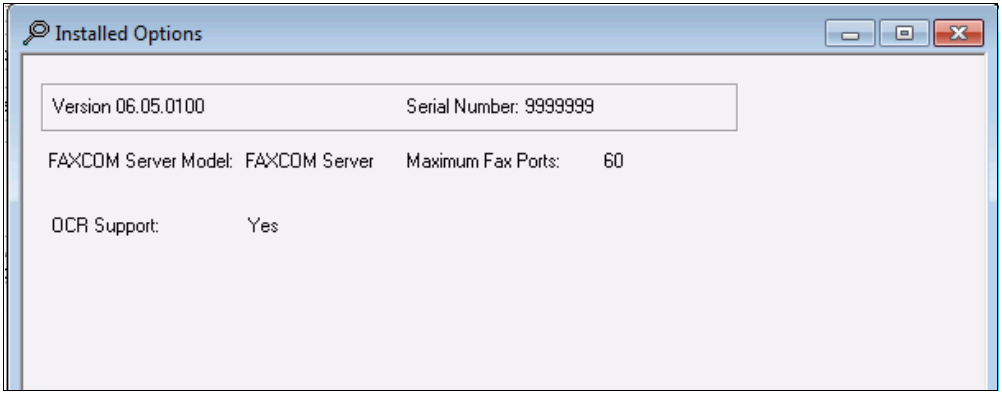


Figure 5-14. View Installed Options Window

Chapter Six: Install and Use Qdoctor

The Qdoctor (short for Quarantine Doctor) utility enables access to a log of faxes "quarantined" on the fax server (and not delivered to the fax gateway for further routing). The faxes were kept on the fax server because they met the specified criteria to isolate faxes that may be "Spam" faxes, i.e., junk mail faxes.

Specified users can then access the log of quarantined faxes and perform the following functions:

- Display detailed information for the received fax in its own windowDisplay_Detailed_Information_for_the_Received_Fax_in_its_Own_Window
- View the received faxView_the_Received_Fax
- Display the oldest, unread faxDisplay_the_Oldest_Unread_Fax
- Delete the received faxDelete_the_Received_Fax
- Release the fax back into the fax systemRelease_the_Fax_Back_into_the_Fax_System for another delivery attempt to the intended recipient
- Open another log of quarantined faxes
- Specify that a Viewed Fax be Marked as UnreadSpecify_that_a_Viewed_Fax_be_Marked_as_Unread; if the fax is marked as Unread, this function changes to Mark as Read (enabling you to toggle between the read/unread states)

When you install FAXCOM Server software, the *drive*:\u\Quarantine folder is automatically installed and shared, accessible to anyone with access to the computer on which FAXCOM Server is installed. To implement remote client access to the Qdoctor utility, make available on your network the setup.exe program found in the *drive*\u\Quarantine\Client folder.

Install Qdoctor

Do the following to install the Qdoctor Utility on your network:

1. Run the setup program in the *drive*\u\Quarantine\Client folder.
2. When the Welcome screen is displayed, click **Next**, accept the license agreement and click **Next** to display the Customer Information screen.
3. Accept the prefilled information or change it as appropriate and click **Next** to display the Setup Type screen.

4. Select *Complete* and click **Next** to install the utility in the default location (C:\Program Files\Biscom\Bin); or select *Custom*, click **Next**, click the **Change** button to select another location, click **OK** and click **Next**.

5. When the Ready to Install screen is displayed, click **Install** to copy the files and install the utility. Click **Finish** to exit the completed installation.

Use Qdoctor

Do the following to use the Qdoctor utility:

1. Select *Start…Programs…FAXCOM…FAXCOM Quarantine Doctor* to display the Qdoctor main window (Figure 6-1).

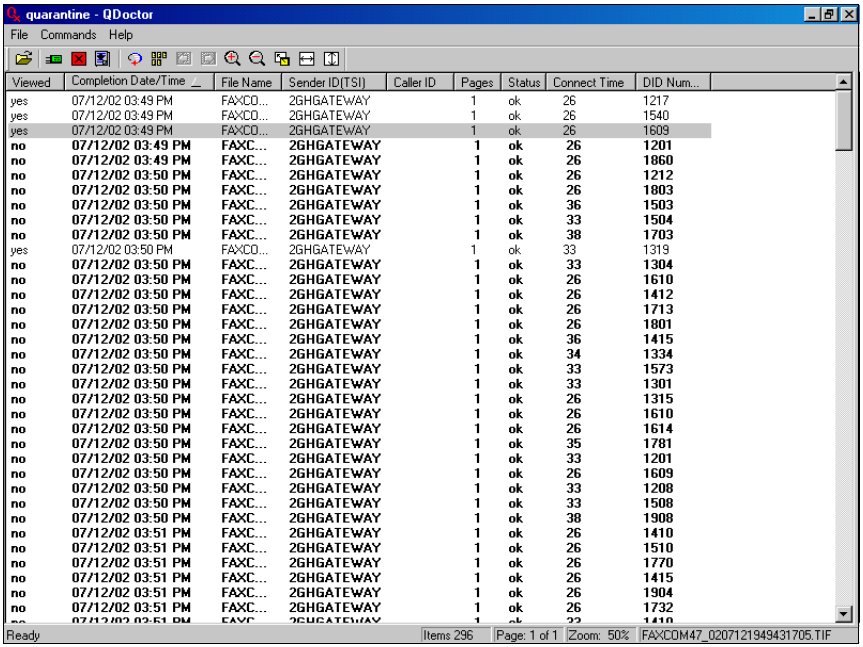


Figure 6-1. Qdoctor Main Window

2. As appropriate, perform any of the functions explained below.

Display Detailed Information for the Received Fax in its own Window

You can specify just which columns of information are displayed in the Received log of quarantined faxes (by right-clicking anywhere in the log and selecting **Add/Remove Columns** from the shortcut menu). You can also view all fields of information for selected faxes by selecting the faxes, right-clicking, and selecting **Detail** from the shortcut menu. A window opens displaying the detailed

information. If you selected multiple faxes, the Detail window includes the **Next** button that you can click to display the detailed information for the next selected fax. Figure 6-2 is an example of a Receive Fax Details window.

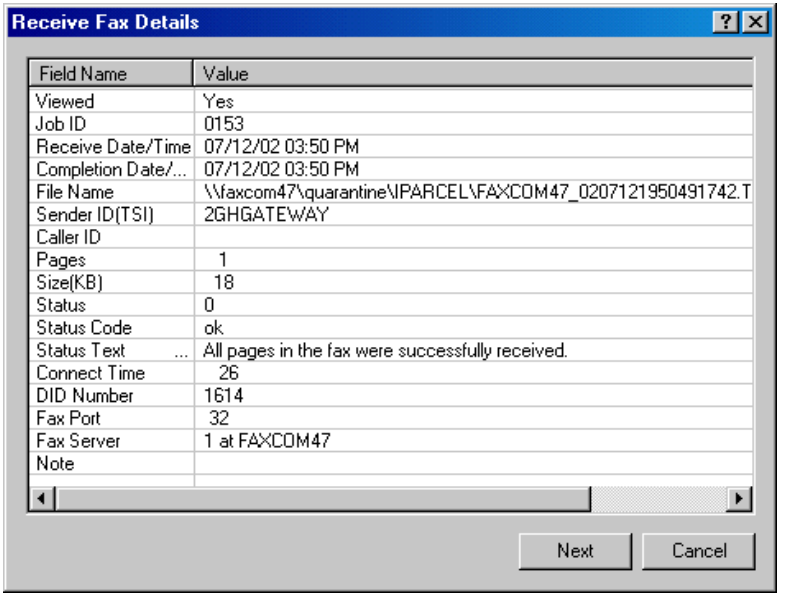


Figure 6-2. Receive Fax Details Window

View the Received Fax

To view a received fax, either double-click the entry, or select the entry, right-click and select **View** from the shortcut menu. The fax is opened in the right-hand pane. You can then click any of the following toolbar buttons to specify viewing options to:

Rotate the page

Display the pages in thumbnail

Go to the previous page

Go to the next page

Zoom in

Zoom out

Fit to window

Fit to width

Fit to height

Display the Oldest, Unread Fax

- To display the oldest, unread fax, either click the **Get Next Unread Fax** button  , or right-click anywhere in the log and select **Get Next Unread Fax** from the shortcut menu. You can also select **Get Next Unread Fax** from the **Commands** menu.

Delete the Received Fax

To instantly delete a fax in the log, select the entry and click the **Delete** button  . You can also select the entry, right-click and select **Delete** from the shortcut menu, or select the entry and select **Delete** from the **Commands** menu.

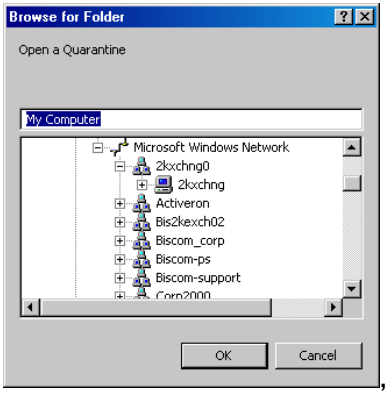
Release the Fax back into the Fax System

To release a quarantined fax back into the fax system, to be delivered to the intended recipient, either select the entry and click the **Release** button  , or select the entry, right-click and select **Release** from the shortcut menu. You can also select the entry and select **Release** from the **Commands** menu.

Open another Log of Quarantined Faxes

Do the following to open another log (folder) of quarantined faxes:

1. Either click the **Open** button  to display the **Browse for Folder** window, or select **Open** from the **File** menu.

2. In the Browse for Folder window 

, locate the Quarantine you want to open in the file listing and click **OK**.

Specify that a Viewed Fax be Marked as Unread

There may be situations in which you want to mark a fax you have already viewed as being unread – and vice versa. If so, do the following:

- Select an entry you have viewed, right-click and select **Mark as Unread** from the shortcut menu.
- Select an entry you have **not** viewed, right-click and select Mark as Read from the shortcut menu.

Appendix A: Status Codes and Explanations

Other than status code 0000, which indicates a successful fax transmission, all completion status codes are effectively error messages, as shown in the following table:

Code	Status Abbreviation	Explanation
0000	ok	All pages were successfully transmitted.
0001	hup	Lost communication with called fax machine.
0002	nak	Received page quality deemed unacceptable by fax machine.
0003	nois	FAXCOM unable to transmit due to noisy phone connection.
0004	voic	FAXCOM detected voice answer.
0005	dis1	Early disconnect. Remote fax requested a disconnect before image was transmitted.
0006	dis2	Late disconnect; remote fax machine requested a disconnect after image was transmitted.
0007	tone	No dial tone detected.
0008	rset	FAXCOM reset during transmission.
0012	disk	FAXCOM device disk error; notify fax service administrator.
0013	busy	Called fax machine busy.
0014	nbsy	Phone network busy.
0015	noan	Called phone number ringing but no answer.
0016	grp1	Incompatible Group I fax machine detected.
0017	grp2	Incompatible Group II fax machine detected.
0018	?mdm	Unknown modem. A modem answer tone was detected, but it is not a fax modem.
0021	noph	No destination phone number specified.
0022		Error reading font during translation.
0023		Specified form was not detected.
0030		Incompatible GIII fax receiver detected.
0031		Transmit Underrun.
0032		Time out waiting for modem to indicate frame sent.
0033		HDLC timeout (fax port connect error).

Code	Status Abbreviation	Explanation
0034		Caller requested unsupported polling mode.
0035		Cannot dial due to incoming call.
0036		No font loaded.
0037		Receiver overrun error.
0038		Procedural Interrupt received (i.e., paper jam, voice mode request).
0039		Unsupported image type passed to board.
0041		Bad ISR message.
0042		Received CED tone too long.
0050	dead	After dialing, no telephone network response.
0051	rvoi	FAXCOM answered call, but no fax at other end.
0052	rdis	FAXCOM receive mode; disconnect requested.
0070		All pages blank; nothing transmitted.
0071		Manual dial requested for transmit – not allowed.
0072		Too many phone numbers specified.
0073		FAXCOM error, next page not ready in time, abort.
0074		FAXCOM error, transmit halt.
0075		FAXCOM error, receive halt – loss of carrier.
0080		FAXCOM powered down during transmit.
0081		FAXCOM reset button pressed during transmit.
0082		FAXCOM reset command received during transmit.
0083		FAXCOM DTR toggle reset received during transmit.
0084		FAXCOM unknown reset cause.
0090		FAXCOM async port over-run.
0091		FAXCOM async port parity error.
0092		FAXCOM async port framing error.
0093		FAXCOM buffer overflow.
0094		FAXCOM internal Queue overflow error.
0100	nops	FAXCOM not configured with PostScript option.
0101		PostScript option not loaded in this version.
0102	npcl	HP PCL Interpreter did not create any pages.
0103	nbar	Bar Code option is not installed.

Code	Status Abbreviation	Explanation
0104		11X17 option not installed.
0105		Chinese character set option not installed.
0106	duid	Duplicate User ID detected in job; job is rejected.
0107	dfid	Duplicate File ID detected in job; job is rejected.
0108	tout	Job being collected timed-out (no activity detected as per FCL time-out setting).
0109	neof	Partial job detected; two consecutive SOF commands detected; job is rejected.
0110	nsof	Partial job detected; EOF but no SOF command at start of job; job is rejected.
0111	dpho	Multiple phone #s detected in job and mode is set for single phone number per job.
0112	bnam	Bad file name specified in the $FILESAVE *xxxx*$ command.
0113		File specified in $GETFILE *xxxx*$ command does not exist.
0114	bcnt	Bad EOF command count.
0115		Printer configuration error detected; job did not print (NPRINT command only).
0116		Print internal error detected; job did not print.
0117	next	Translation Server option is not installed; cannot fax native file attachments.
0118	part	Too many parts (more than 25) in $SETPART$ command.
0119		Internal FAXCOM queue error; resubmit the job.
0120		No text pass through supported for fax or TRANSLATE part without a name.
0121		Job deleted (Norwest model).
0122		Bad Mailsend parameter.
0123	msnd	Mailsend option is not installed.
0124		Mailsend submit error.
0200		Least Cost Routing option not installed.
0201		Least Cost Routing option disabled.
0202		Bad Least Cost Routing address specified, i.e., IP address.
0203		Unable to contact remote site.

Code	Status Abbreviation	Explanation
0204		Lost contact with remote site.
0205		Least Cost Routing agent error preparing job.
0206		Least Cost Routing agent unable to extract destination country code from phone number.
0601 – 0670		Internal error; resend the job; if error occurs repeatedly, contact Biscom.
0671		Error converting attachment to fax format.
0699		Image translation error; no output file created by translator; unable to send this fax job.
0701		Bad set options to the fax device.
0702		Bad set page header to the fax device.
0704		Could not open the malloc buffer.
0705		Could not open the TIFF file.
0706		Bad get options from the fax device.
0708		Bad return from DIAL call.
0709		Bad get call status call.
0710		Bad send start page call.
0711		Bad fax device write call.
0712		Fax failed, due to server crash, ungraceful restart, or stopping service when fax was being sent/received.
0715		Bad get page status call.
0716		Fax board was reset.
0717		Bad argument parsing in the queue.
0718		Signal caught, call terminated (hung up).
0719		Failed to open the fax device.
0720		Error setting the TX db level.
0721		Error setting the DIAL db level.
0722		Error getting the T30 information.
0723		Fax port is busy receiving.
0724		Incorrect TIFF file pixel width.
0725		Fax device is not available.
0726		Failed to reopen the TIFF file.

Code	Status Abbreviation	Explanation
0727		Fax board temporarily out of service; firmware is being reloaded.
0728		Job was canceled.
0729		Job blocked
0750	nols	Landscape option is not installed.
0751		$CLOSELINK command detected; the FAXCOM proceeded to disconnect the TCP/IP link.
0752		Initialize 3270 terminal message.
0770		Dial tone was detected after dialing the number.
0771		Internal error; resend the job; if error occurs repeatedly, contact Biscom.
0772		Attempt to attach a fax port was unsuccessful (possibly due to a configuration error or hardware problem.
0773		Attempt to reset a fax port was unsuccessful (possibly due to a configuration error or hardware problem.
0774 – 0777		Internal error; resend the job; if error occurs repeatedly, contact Biscom.
0778		An error occurred attempting to play a voice prompt for DTMF digits.
0779 – 0781		Internal error; please resend the job; if these errors occur repeatedly, contact Biscom.
0782		Not an error; confirmation of an abort request from a callback function.
0783		Miscellaneous hangup.
0784		Inconsistent fax board configuration settings.
0785		Wait for call timeout.
0786		Cancel accepted.
0787		Fax board initialization failed.
0800		Internal FAXCOM error; please resend job; if these errors occur repeatedly, contact Biscom Technical Support.
8000	qdel	This job was manually deleted.

Code	Status Abbreviation	Explanation
8001	rej	This job was rejected.
9000		Error in queue management.
9001		Delay setting exceeds the maximum allowed value.
9002		No data to send.
9003		Access is denied.
9004		Error reading the cover page PDL file.
9005		Error parsing TO: field command string.
9006		Concurrent sending of Epson and PostScript is not permitted.
9007		No PostScript support. The NET software detected is not a publisher.
9008		Cannot attach WordPerfect files.
9009		Cannot attach MSWord files.
9010		Cannot attach HP PCL files.
9011		Error reading attachment files.
9012		Non-compatible attachment.
9013		Error creating fax message.
9014		Cannot mix PostScript, PCL, and Epson files.
9015	inac	Entered Account Number was invalid.
9016	acct	Error opening Accounts file.
9017	env	Too many addresses.
9018	addr	No phone number in address field.
9019		User license limit exceeded.
9020		Authorization Code ‘c’ not necessary for this recipient.
9021		Authorization Code ‘c’ must be entered for this recipient.
9022	acct	No account number to substitute for "c" in phone number, or sender is not authorized, or no valid code associated with sender.
9023		Unable to access Authorization Code table.
9024		Error in RTF memo.
9025	rstr	Recipient Facsimile Number has been restricted.
9026		Fax could not be routed to this recipient.
9027	efwd	Error forwarding fax.

Code	Status Abbreviation	Explanation
9028		Error submitting fax. User fax Quota has been exceeded.
9080		No authorization code was specified in the dial string. The job was aborted.
9081		No authorization code was found for this user. The job was aborted.
9100		Cannot mix graphics and PostScript files.

Appendix B: Configure Advanced Settings

While typically you do not have to configure advanced server parameters, there may be some functions you want to implement by working directly within the configuration files. There are three advanced configuration files – one for fax ports, one for host ports/sessions, and one for server settings.

Specify a Custom Retry Schedule for the Same Host/Session

in addition to using the default retry interval of 120 seconds, you can specify a custom retry schedule for all jobs from the same host or session as follows:

1. On the Host Ports tab (Figure B-1), select the Host Port for which to specify the custom schedule, stop the port if running, and click the **Configure** button to display the Host Ports dialog.

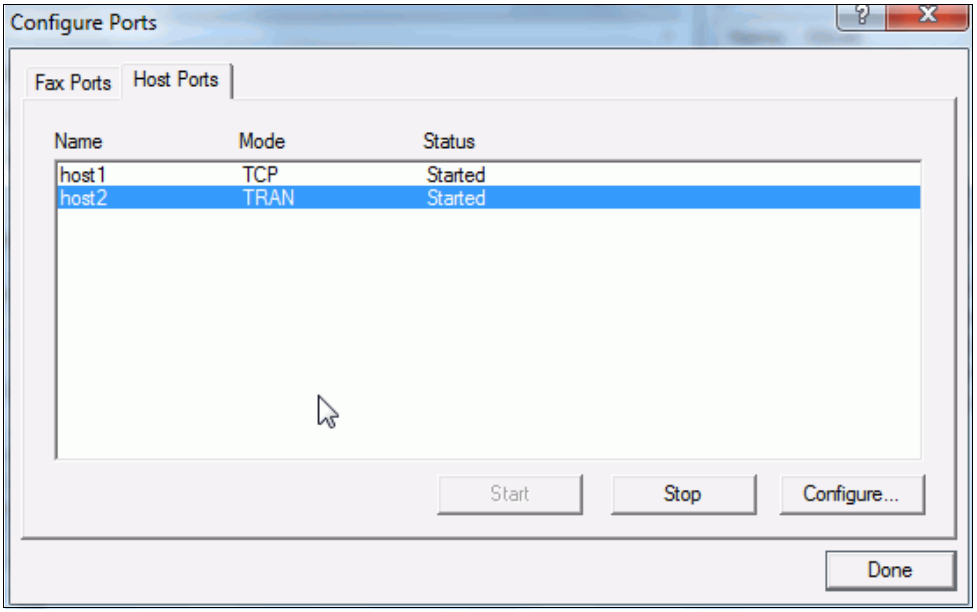


Figure B-1. Host Ports Tab

2. On the Host Ports dialog, click the **Advanced** button to display the Env file (Figure B-2).
3. When prompted whether to proceed, click *Yes*.

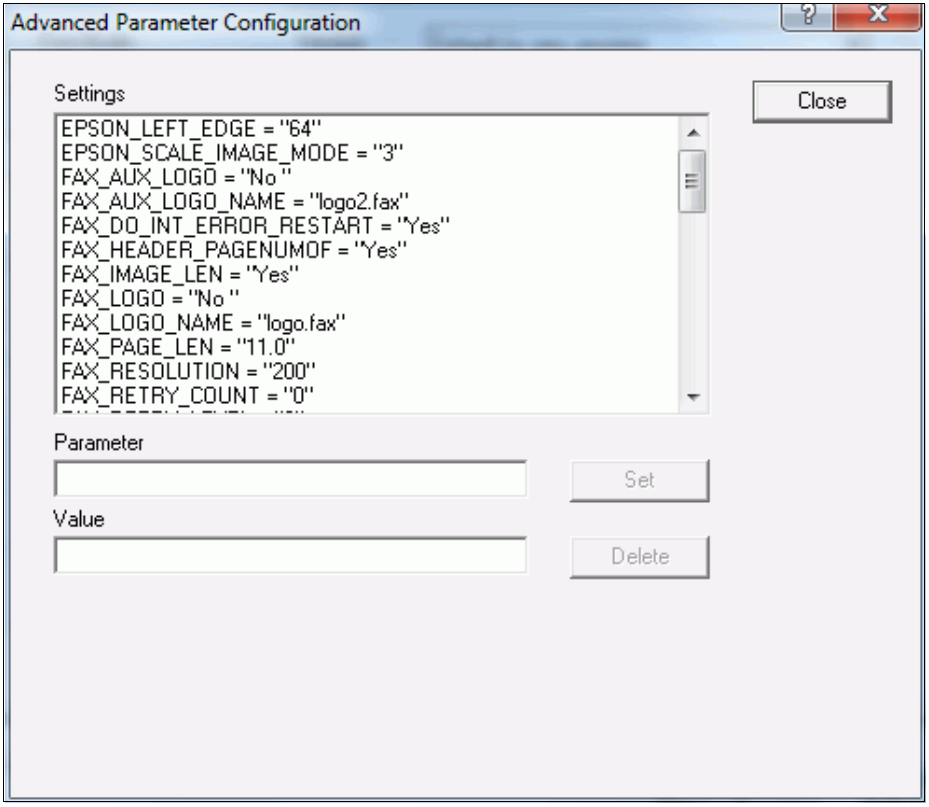


Figure B-2. Host/Session Env File

4. In the *Parameter* field, add the following entry: **`FAX_RETRY_INTERVAL`**.
5. In the *Value* field, add the appropriate values, where the value can either be a single integer specifying the number of minutes to delay before retrying, or ***n@m*** specifying ***n*** retry intervals of ***m*** minutes each, as, for example: `5, 3@15, 30`.
6. Click the **Set** button. Click **Close**.

Archive MAILSEND and NPRINT Jobs

Archiving of MAILSEND and NPRINT jobs is automatically enabled after a fresh install of Release 5.5. If, however, you are upgrading to Release 5.5 from a release earlier than 5.4, you must do the following to enable the capability:

1. Access the Server Settings tab (Figure B-3).

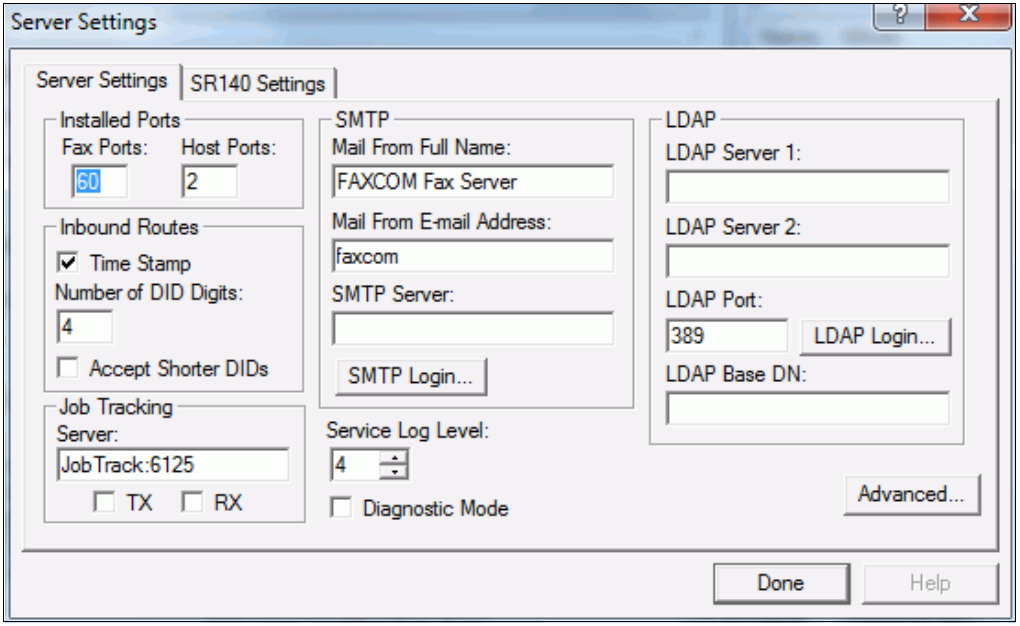


Figure B-3. Server Settings Tab

2. Click the **Advanced** button to display the Server Settings Env file (Figure B-4).
3. When prompted whether to proceed, click *Yes*.

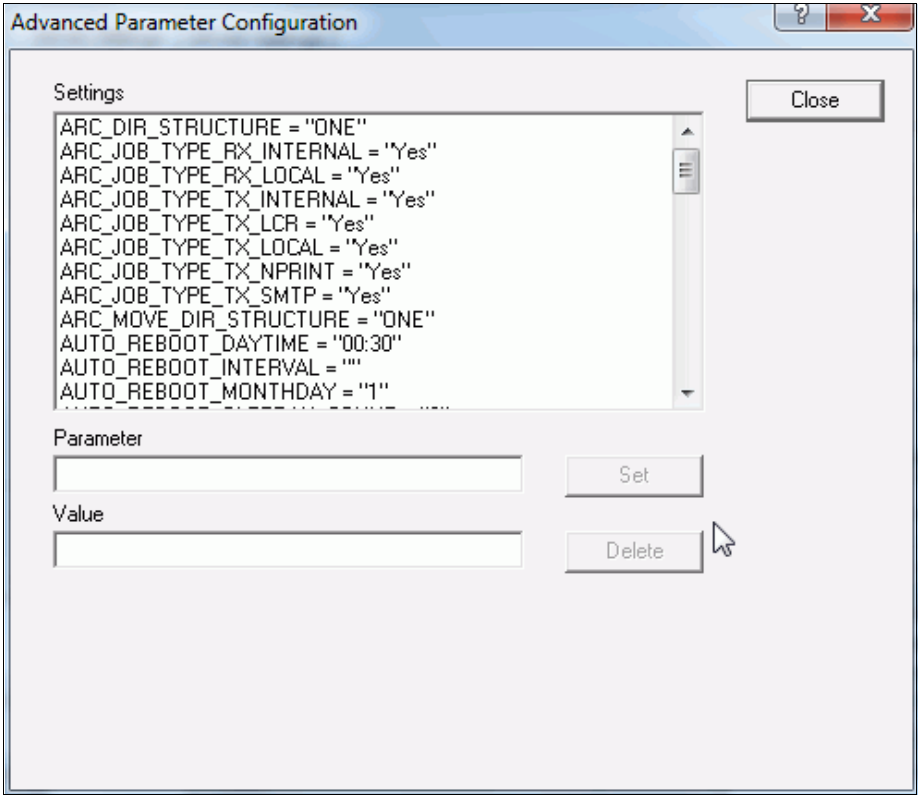


Figure B-4. Server Settings Env File

4. Locate the **ARC_JOB_TYPE_TX_SMTP** parameter and/or the **ARC_JOB_TYPE_TX_NPRINT** parameter and set the value to *Yes*.
5. Click the **Set** button. Click **Close**.

Control the Size of the Fax Activity and Fax Error Log

You can do the following to control the size (approximate maximum number of records) of the Fax Activity log (fax.log) and Fax Error log (faxerr.log):

1. Access the **Server Settings** tab and click the **Advanced** button to display the Env file (Figure B-4).
2. Locate the **LOG_ACT_LOG_LEN** and **LOG_ERR_LOG_LEN** parameters and specify the appropriate value.
3. Click the **Set** button. Click **Close**.

Specify the Archive Directories Structure

You can specify whether the archive directory structure includes daily subdirectories – rather than the default flat structure – as follows:

1. Access the **Server Settings** tab and click the **Advanced** button to display the Env file (Figure B-4).
2. Locate the **ARC_MOVE_DIR_STRUCTURE** parameter.
3. Change the value from *One* to *Multiple*.
4. Click the **Set** button. Click **Close**.

Add Selectable Date/Time Formats

By default, date format is tied to country code, with country code 1 using American, and all others using European.

Through the Server Settings Env file, however, you can have more specific control of the format, and can specify the following:

American, European, or International Format – where the general rule is that American date format has the *month-day-year* format, European has *day-month-year*, and the global International has *year-month-day*

Slash, dash, or dot date delimiter – with *slash* being the default for American and European, and *dash* being the default for International

Whether to include or omit time zone expressed numberically – as, for example GMT-05:00 for American EST (or simply -0500 when space for longer form is not available); if time zone information is requested, the time zone is appended after the *hh:mm* or *hh:mm:ss* fields

A date format for faxes and messages sent to users that is separate from the date format for administrative interfaces – whereby the date stamps used in transmitted/received faxes and banner pages can be different from from the date format for log files and administrative interfaces. For example, if software is reading American format dates in log files such as fax.log, then leaving admin date format as American my be required. In that case, however, user date format may be set to European or International without affecting the log-reading software. If software is reading American date format in fax stamps (via OCR) or banner files, then leaving user date format as American may be required. As of Release 5.5, for implementation simplicity, the format of the date field at the beginning of ims_log lines is always International (*yyyy-mm-dd*).

Do the following to select date/time formats:

1. Access the **Server Settings** tab and click the **Advanced** button to display the Env file (Figure B-4).

2. Locate the appropriate parameter and specify the appropriate value, where the relevant parameters are:

   FAXCOM_DATE_DELIMITER_AMER

   FAXCOM_DATE_DELIMITER_EURO

   FAXCOM_DATE_DELIMITER_INTL

   FAXCOM_DATE_FORMAT_ADMIN

   FAXCOM_DATE_FORMAT_USER

   FAXCOM_DATE_INCLUDE_TIME_ZONE

3. Click the **Set** button. Click **Close**.

Stamp a Fax Header on Other Delivery Types

Do the following to stamp a fax header on fax-formatted deliveries by means other than fax, such as delivery to printer, delivery to file destination, and delivery to email destination:

1. Access the **Server Settings** tab and click the **Advanced** button to display the Env file (Figure B-4).
2. Locate the appropriate parameter (listed immediately below)and change the default of *No* to *Yes*:

   FAX_HDR_JOB_CAPTURE
   FAX_HDR_MAIL_SEND
   FAX_HDR_NPRINT
   FAX_HDR_PRINTON

3. Click the **Set** button. Click **Close**.

Appendix C: Use the FAXCOM Control Utility

You can control certain functions of the FAXCOM Server by running the FAXCOM Control utility. To run the utility, type the following at the command line:

```
bisctrl
```

The following is displayed to guide you in using the utility with the appropriate command switches:

```
bisctrl [-k fax/host port name]
    -k stop host/fax port
           i.e. -k host1

bisctrl [-s fax/host port name]
    -s start host/fax port
           i.e. -s host1

bisctrl [-c fax port name] [-m transmit/receive mode] [-r auto routing mode]
    -c configure fax port
    -m configure transmit/receive mode [NONE|TX|RX|TXRX]
    -r configure auto routing mode [DID|DTMF|NONE]
           i.e. -c fax1 -m TXRX -r DID

bisctrl [-c host port name ] [ -m mode ] [-p tcp port] [-b baud rate]
    -c configure host port
    -m configure mode [TCP|TRAN|COM1|COM2]
    -p configure tcp port number (must be less than 65536)
    -b configure serial port baud rate
       [1200|2400|4800|9600|19200|38400|57600|115200]
           i.e. -c host1 -m TRAN -p 6000
           i.e. -c host1 -m COM1 -b 19200

bisctrl [-i taskid]
    -i clear job with specified task id (use with extreme caution)

bisctrl [-j]
    -j display job and port status

bisctrl -e [-f fax/host port name] ENV_NAME ENV_VALUE ...
    -e set ENV values for fax/host port or (by default) server

bisctrl [-g|-u] [-f fax/host port name] ENV_NAME ...
    -g get ENV values
    -u unset ENV values

bisctrl -n [-f fax/host port name] ENV_NAME ENV_VALUE ...
    -n create new ENV values
    (fail if name already exists)

bisctrl [-x]
    -x clear all fax delivery jobs
```

Note: Make sure that you first determine that no fax job is being processed before you issue the* `bisctrl -k` *command to kill a host or fax port.

Appendix D: Dialogic Brooktrout Fax Board Device Driver Parameter Values

Overview

It is possible you may have to specify values other than the defaults for the Dialogic Brooktrout Fax Board Device Driver software – in order to implement capabilities you require. While certain parameter values should **not** be changed unless requested by Biscom Support personnel, the 3 listed below are ones you might need to change.

Change the Values

To change these values, access the registry, where the values are found under the key:

```
//HKEY_LOCAL_MACHINE/Software/Biscom/FAPI for BT/Parameters
```

```
CallerIdSubstituteTSI (default 0)
```

This value is a switch which turns on (`0` = OFF, `1` = ON) the substitution of the received "Calling Party Number" for the received TSI on inbound fax calls on ISDN (BRI, PRI, or E1) lines.

```
CallingPartyNumber (default "")
```

This value is used when transmitting on ISDN lines (PRI, BRI, and E1). It specifies a telephone number, typically the number of the fax server, which is transmitted as part of the ISDN call establishment protocol.

```
PoundsignPostfixDID (default 0)
```

Note: This value is a switch (`0` = OFF, `1` = ON) which causes a "#" character to be appended to the end of the received DID string.

Appendix E: Supported Fax Boards

The FAXCOM Server supports Dialogic Brooktrout **PCI** boards, as follows:

Analog/DID

TruFax 200-R CH 2 Analog (PCI)

TruFax 200E 2CH 2 Analog (PCI EXPRESS)

TR1034+UP2C-R-1Loop Channel/1 DID Channel

TR1034+uP2D-R-2 DID Channels

TR1034+uP4C-R-2 Loop Channel/2 DID Channel

TR1034+uP4DR-4 DID Channels

TR1034+P8L-8L 8 Channel Analog Fax

TR1034+E2L-2L 2 CH Analog Fax Bd (PCI Express)

TR1034+E4L-4L 4 CH Analog Fax Bd (PCI Express)

TR1034+E8L-8L 8 CH Analog Fax Bd (PCI Express)

TR1034+E2C-1 Loop CH/1 DID CH (PCI Express)

TR1034+E2D-2 DID Channel (PCI Express)

TR1034+E4C-2 Loop CH/2 DID CH (PCI Express)

TR1034+E4D-4 DID Channel (PCI Express)

Digital (T1, BRI, E1, PRI, ISDN)

TR1034 T1/E1/IP PCI Express (low profile, half length, single slot)

TR1034+P16H-E1-1N 16Port E1/PRI w/T.38 Connector

TR1034+P20H-E1-1N 20Port E1/PRI w/T.38 Connector

TR1034+P30H-E1-1N 30Port E1/PRI w/T.38 Connector

TR1034 +P4H-E1-1N with T.38 Connector

TR1034+P2-1B 2 Port Single Line BRI

TR1034+P4-2B 4 Port Two Line BRI

TR1034+E2-1B 2 Port Single BRI

TR1034+E4-2B 4 Port Two Line BRI

TR1034+E4H-E1-1N with T.38 Connector

TR1034+E8H-E1-1N 8 Port E1/PRI w/T.38 Connector

TR1034+E10H-E1-1N 10 Port E1/PRI w/T.38 Connector

TR1034+E16H-E1-1N 16 Port E1/PRI w/T.38 Connector

TR1034+E20H-E1-1N 20 Port E1/PRI w/T.38 Connector

TR1034+E30H-E1-1N 30 Port E1/PRI w/T.38 Connector

Notes: If located outside of the United States, check whether your FAXCOM Server is located in a country where Dialogic has obtained certification of the TR1034 analog fax cards, since additional configuration is required to enable country-specific fine tuning of the telephone network interface. Refer to the Dialogic documentation for information necessary to configure the correct board timing, frequencies and call control.

Appendix F: Install Translation Server Applications

If building your own FAXCOM Server and using the Translation Server function, you must install Adobe Acrobat and the MS Office suite according to the instructions in this appendix. In addition, this appendix lists some special considerations for using the Translation Server successfully.

Note: Instead of installing Adobe Acrobat, it is possible to use the FAXCOM Server's embedded PDF viewer by selecting the Use Xpdf for PDF Rendering ***checkbox on the Translation Server tab (Figure 4-29).***

Install Adobe Acrobat 9

Do the following to install Acrobat 9:

1. When the installation autoplays, click the Install **Adobe Acrobat 9** button.
2. Specify the appropriate customer information, including the product Serial Number and click **Next** to display the License Activation screen. Click **Next**.
3. When prompted for the Setup Type, select the **Custom** radio button and click **Next** to display the Custom Setup screen (Figure F-1).

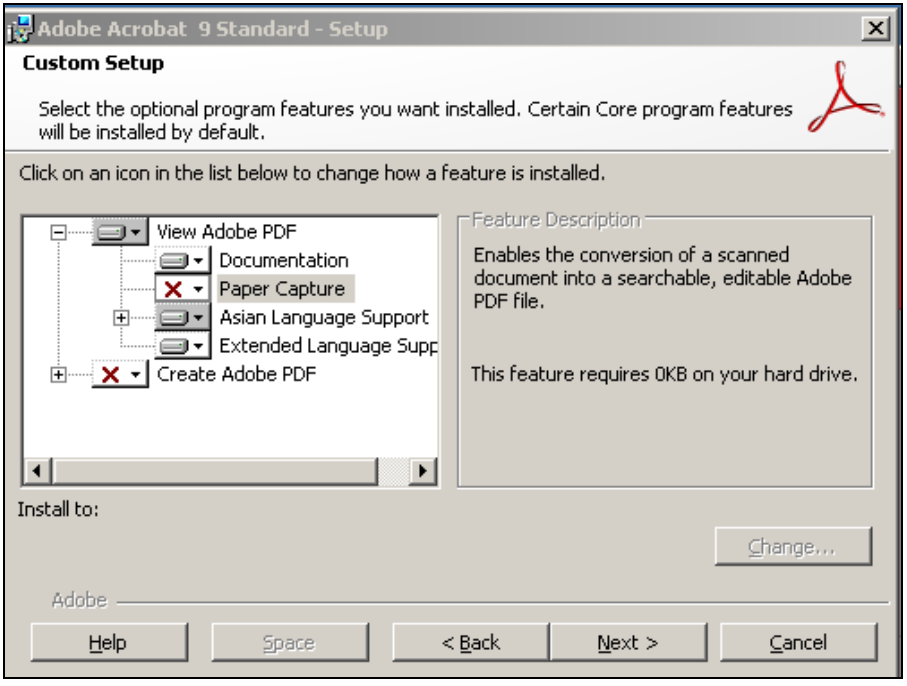


Figure F-1. Custom Setup Screen

4. Select the options shown in Figure G- 1and click **Next**.
5. Click the **Install** button to begin the installation. When notified that the installation is complete, click the **Finish** button.
6. Select *Start…Programs…Adobe Acrobat 9*. Select **Check for Updates…** from the **Help** drop-down menu and download any updates.
7. Select **Improvement Program Options…** from the **Help** drop-down menu and make sure that the **No, thank you** radio button is selected. Click **OK**.

Install/Configure Adobe Acrobat 8.0 Standard

Do the following to install Adobe Acrobat 8.0 Standard:

1. When the installation autoplays, click the **Install Adobe Acrobat 8.0 Standard** selection.
2. Specify the appropriate customer information, including the product Serial Number and click **Next**.
3. When prompted to cache the install, leave the option enabled and click **Next**.
4. When the PDFMaker Installation and Integration Information screen is displayed, click **Next** to continue.
5. When prompted for the Setup Type, select the **Custom** radio button and click **Next** to display the Custom Setup screen (Figure F-2).

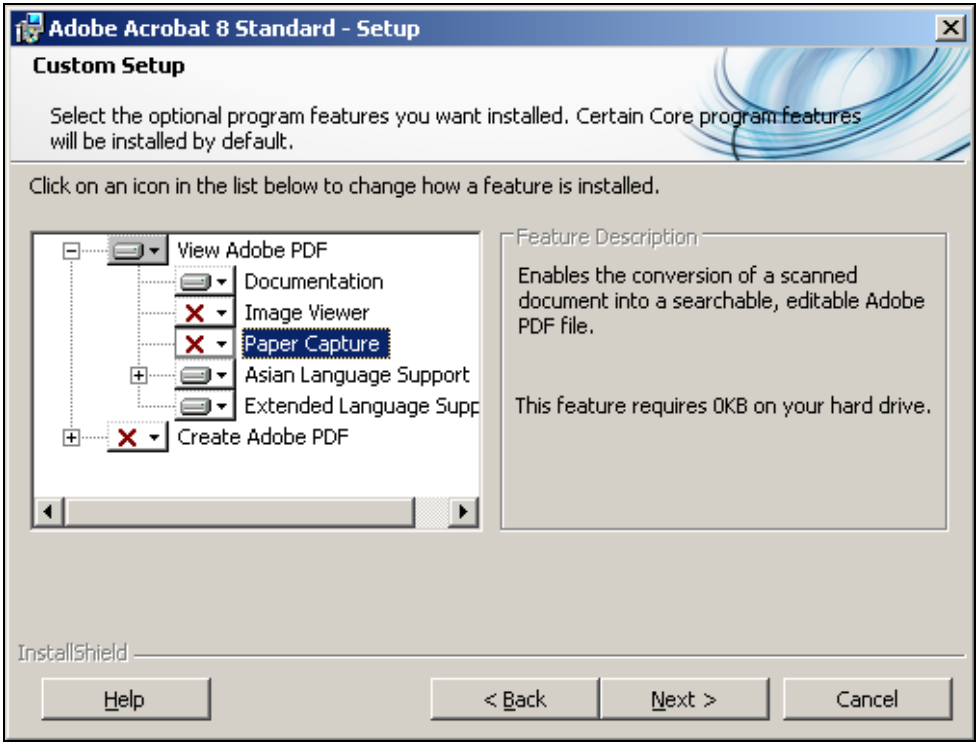


Figure F-2. Custom Setup Screen

- Select the options shown in Figure G- 1and click **Next**.

6. Click the **Next** button to begin the installation. When notified that the installation is complete, click the **Finish** button.

- Select *Start…Programs…Adobe Acrobat 8.0 Standard*. Accept the license and activate.
- When prompted whether you would like to register your Adobe product online now, select the **Don't Remind me** radio button.
- Check the ***Do not show at Startup*** option.
- Click the **Close** button.
- Select *View…Toolbars* and uncheck everything or select the **Hide toolbars (F8)** option.

Install MS Office 2007

Do the following to install MS Office 2007:

1. Insert the Office CD in a CD drive. When prompted, specify your product key and click **Continue**. Accept the license agreement and click **Continue**.
2. Click the **Customize** button.
3. If appropriate, select the *File Location* tab and change the installation destination, perhaps to drive D:.
4. Select the *User Information* tab and specify your user information.
5. Select the *Installation Options* tab; select the Installation options as shown in Figure F-3 below, and click the **Install Now** button.

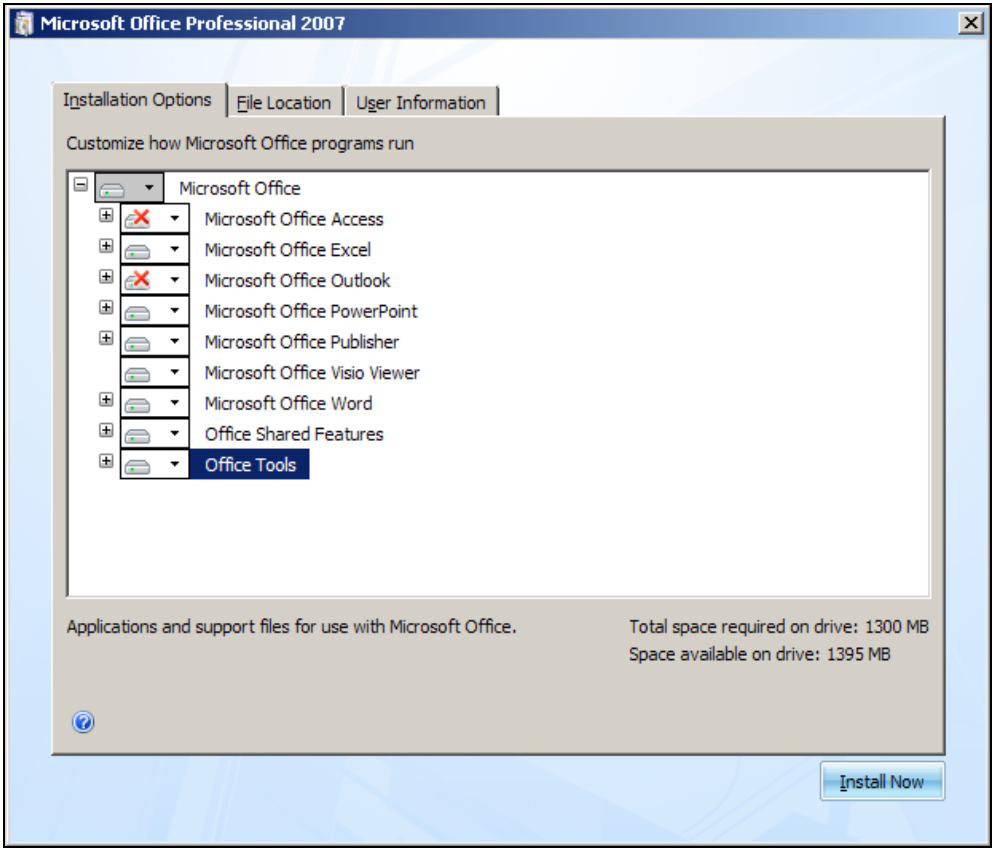


Figure F-3. Installation Options Screen

Install MS Office XP/2003 Applications

Do the following to install the MS Office XP/2003 applications:

Note: While there is some variation in the look-and-feel of the Office XP and Office 2003 installations, the procedure to follow is effectively the same.

1. Insert the Office CD in a CD drive. When prompted, specify your product key and click **Next**. Specify your user information and click **Next**. Accept the license agreement and click **Next**.

- Select the **Custom** installation type. If appropriate, change the installation destination, perhaps to drive D:. Click **Next**.
- When prompted for the applications to install, select only Word, Excel, and PowerPoint (as shown in Figure F-4 for Office 2003).

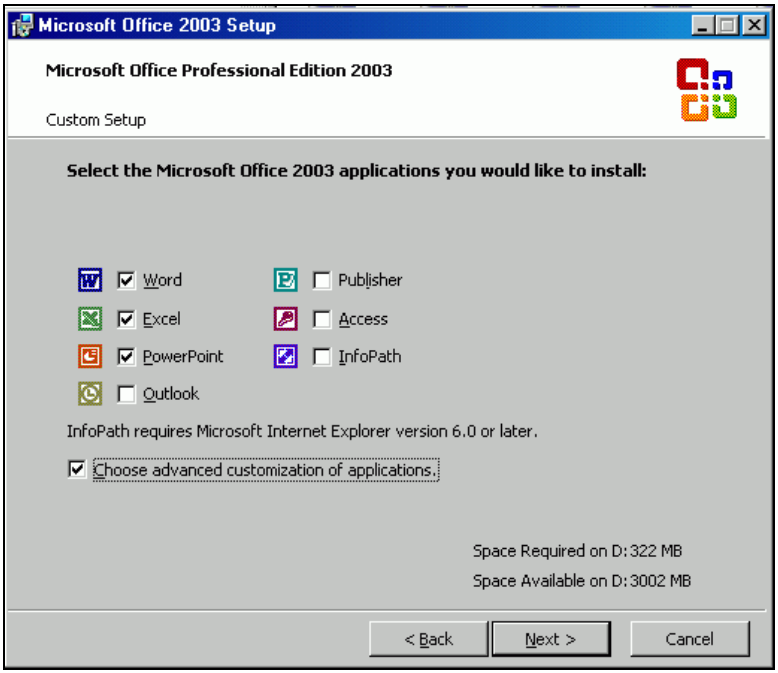


Figure F-4. Custom Setup Screen (Office 2003)

Note: If used at your site, you can also select Publisher.

- *For Office 2003*, check the **Choose advanced customization of applications.** check box. *For Office XP*, check the **Choose detailed installation options for each application.** radio button. Click **Next**.
- Select ***Run all from My Computer*** for the selected applications (Word, Excel, PowerPoint [and possibly Publisher if in use at your site]).
- Set everything else to ***Not Available***.
- Under *Shared Features*, set **Clip Organizer and Visual Basic for Applications** to ***Run all from My Computer***.

Note: Be aware that while PowerPoint would work without Clip Organizer being installed pre SP2, it will NOT work without Clip Organizer being installed post SP2.

- Under *Office Tools*, set **Microsoft Office Document Imaging** to ***Run all from My Computer***.
- Review your installation choices and click the **Install** button to install the selected applications.

Considerations for Using the Translation Server

Be aware of these considerations for successfully using the Translation Server:

- Make sure that no messages requiring a user response are displayed when an application is launched to translate a job. Because the Translation Server cannot respond and clear these messages, the result will be that the Translation Server times out and declares the job unsuccessful.
- Before attempting to translate documents created in a newly-installed application, make sure you run the application at least once – so that it can properly initialize, etc.
- Configure the three `Normal.dot` template files, and the MS Word 2007 `Normal.dotm` template file, as **Read-only**. The files are in the following locations:

  ```
  \Program Files\Microsoft Office\Office

  C:\Documents and Settings\Administrator\Application
  Data\Microsoft\Templates

  C:\Documents and Settings\Default User\Application
  Data\Microsoft\Templates
  ```

- Right-click each `Normal.dot` file (and the `Normal.dotm` file for MS Word 2007) and select *Properties* from the shortcut menu. On the General Properties tab, check the **Read only** check box. Click *Apply* and click **OK**.
- Make sure to exclude the following directory from a real-time virus scan:

  ```
  C:\Documents and Settings\Default User\Application
  Data\Microsoft\Office\Recent
  ```

- Convey the following information to users of the Translation Server:
  - MS Word users cannot fax password-protected documents.
  - MS PowerPoint users should save PowerPoint color slides in black and white.
  - Visio users cannot fax Visio drawings that are based on a user-created stencil.
  - MS Excel users who want to fax multi-sheet documents must first perform the following steps in order for only one print job to be generated for all sheets: open the document in Excel; right-click the Sheet tab; choose *Select All Sheets*;

select *File…Page Setup*; in the Print Quality field, select a resolution to be used for all sheets; click **OK**, and save the document.

- The Translation Server does **not** reformat a Word document to have at least these minimum margins (Top: 0.20", Bottom: 0.25", Left: 0.25", Right: 0.25"). If you want the translation engine to reformat the document, include the following statement in the FAXCOM Server's `%faxcom_root%u\ims\server\bistran.ini` file:

```
[Translation]
WordFormat=0
```

- If you have documents with very small margins, it is suggested that you select PostScript as the Intermediate Format setting on the Translation Server tab (Figure 4-28) rather than the default of PCL.

Logging Print Job Information Events

Each time a translation job is requested, a print job is logged as an information event for the print server, possibly causing more logging than is acceptable to your site. Do the following to verify whether this information event logging is enabled for the print server and disable it if appropriate:

Note: A print server setting applies to all printers on the print server. If, therefore, you want to disable this logging for FAXCOM Native Translation Server only and not for other printers on the print server, you would have to put FAXCOM Native Translation Server on its own print server.

1. Select *Start…Settings…Printers*.
2. Select *File…Server Properties* to display the Print Server Properties dialog.
3. Select the Advanced tab (Figure F-5).

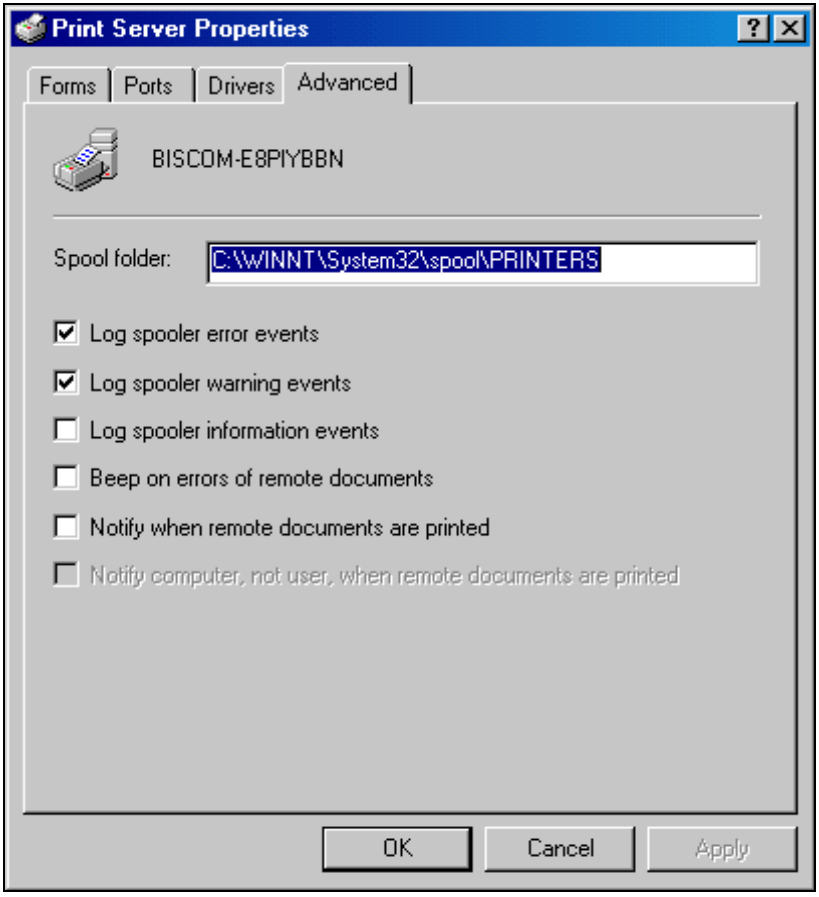


Figure F-5. Print Server Properties Advanced Tab

Typically, the first three checkboxes are selected. If so, deselect the third checkbox, *Log spooler information events* (as shown in Figure F-5).

Appendix G: Implement the Dialogic Brooktrout SR140 Virtual Fax Board

The Dialogic Brooktrout SR140 is a host-based fax-over-IP platform for companies that have made the transition to VoIP to integrate a pure IP-based fax solution. SR140 is a software-only solution that requires no additional hardware.

This document explains the steps you perform to implement the SR140 software-only solution on a FAXCOM Server.

Note: When implementing SR140 on a virtual machine, make sure to assign the MAC address manually instead of allowing VMware Workstation to assign it automatically.

Steps You Perform on the FAXCOM Server

1. During the installation of the FAXCOM Server software, you specify use of the SR140 software-only solution on the Fax Board Type screen (Figure 1-7 in this document and also reproduced below).

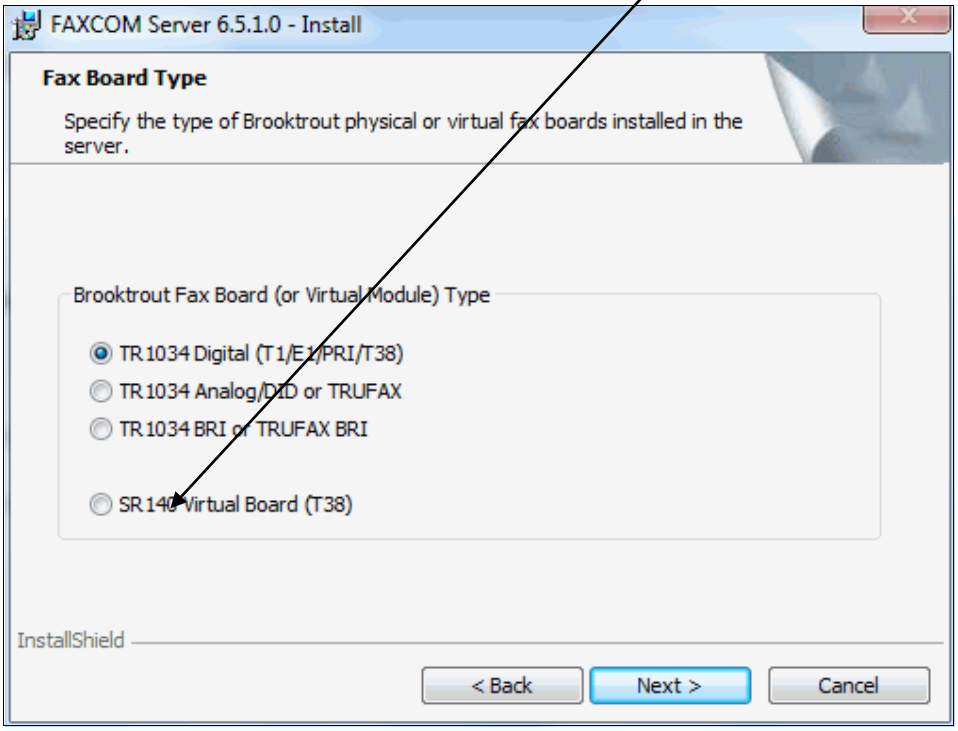


Figure G-1. Fax Board Type Screen

You then specify the appropriate T.38 settings on the T.38 Gateway screen, shown below.

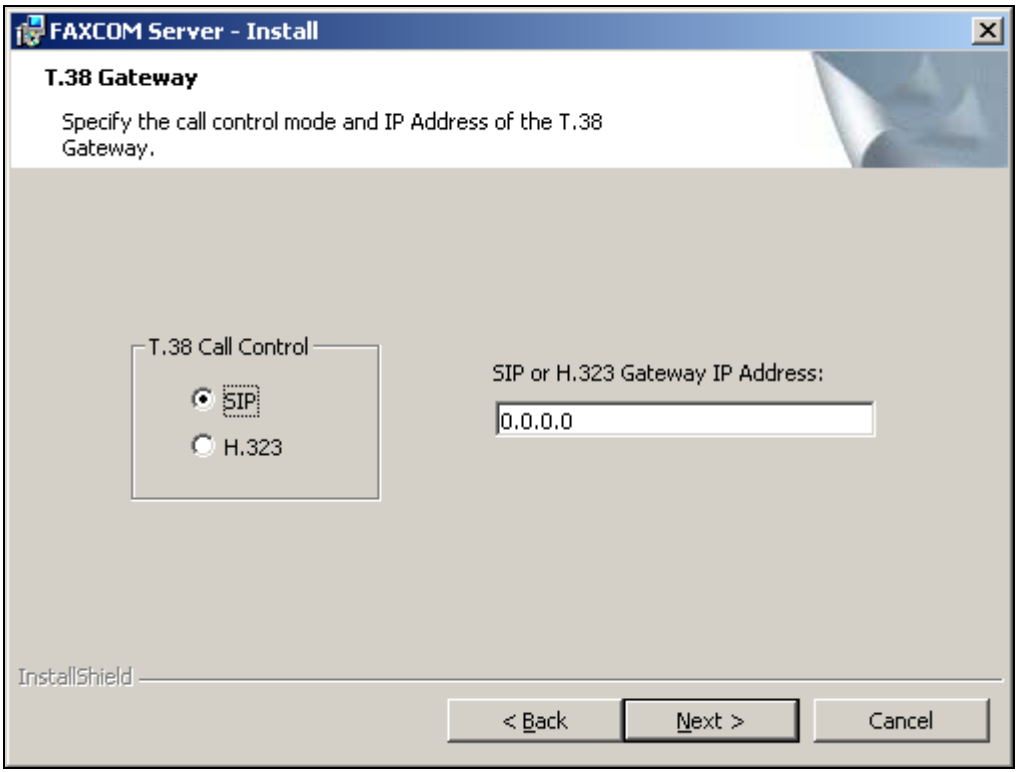


Figure G-2. T.38 Gateway Screen

T.38 Call Control – the call control method used for Voice Over IP, either:

SIP for the Session Initiation Protocol, a text-based protocol, similar to HTTP and SMTP, designed to manage multimedia sessions over the Internet; while SIP is responsible for determining the peer IP address and port number on which to communicate, it does not perform the actual physical transport of the media, which is typically done via TCP/IP.

H.323 for the standard that describes how multimedia communications occur between terminals, network equipment, and services, and which is part of a larger group of ITU recommendations for multi-media interoperability called H.3x. H.323 addresses call control and management for both point-to-point and multipoint conferences as well as gateway administration of media traffic, bandwidth, and user participation

SIP or H.323 Gateway IP Address – the IP Address of the Cisco router in use

2. Once the FAXCOM Server is installed, click the **Configure** toolbar button  and select the **SR140 Settings** tab (Figure 4-11 in this document and reproduced below). You can also select *Configure…All Settings…SR140 Settings*.

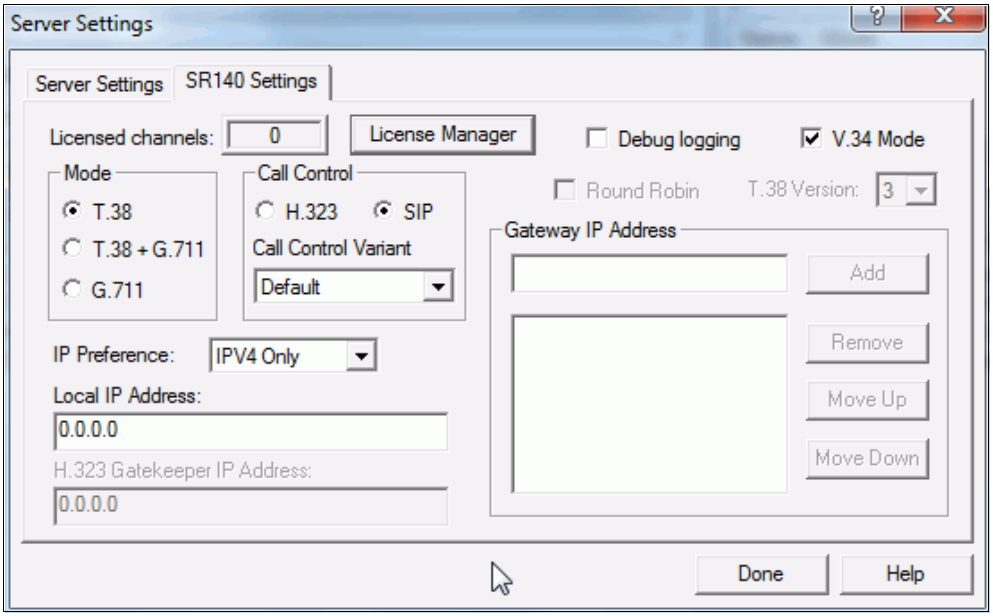


Figure G-3. SR140 Settings

3. If you have not already done so, make the appropriate selections according to your implementation – following the instructions in the "Configuring SR140 Settings" section in Chapter Four.
4. Click the **License Manager** button to display the Brooktrout License Manager, with which to activate your SR140 license..
5. Select *Utilities…Display node lock* to display your Node Lock Type and Node Lock, as shown in Figure G-4. Click **OK**.

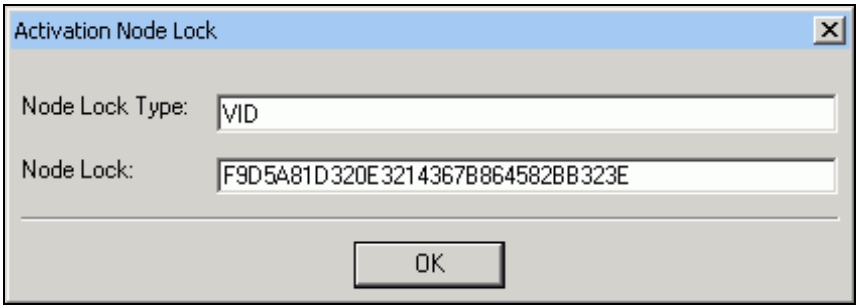


Figure G-3. Activation Node Lock Window

3. Select *License…Activate license…* to display the License Activation Wizard Welcome screen. Click **Next**.
4. When the Activation Method screen is displayed, select the *Using the interactive web method* and click **Next**.
5. When the Web Instructions screen (Figure G-5) is displayed, click the **Save the instructions into a file** button and click the **Save** button to save the text file in the appropriate location. (You can then later print the file in order to have a copy of both the instructions and the Node Lock when accessing the Activation website.)

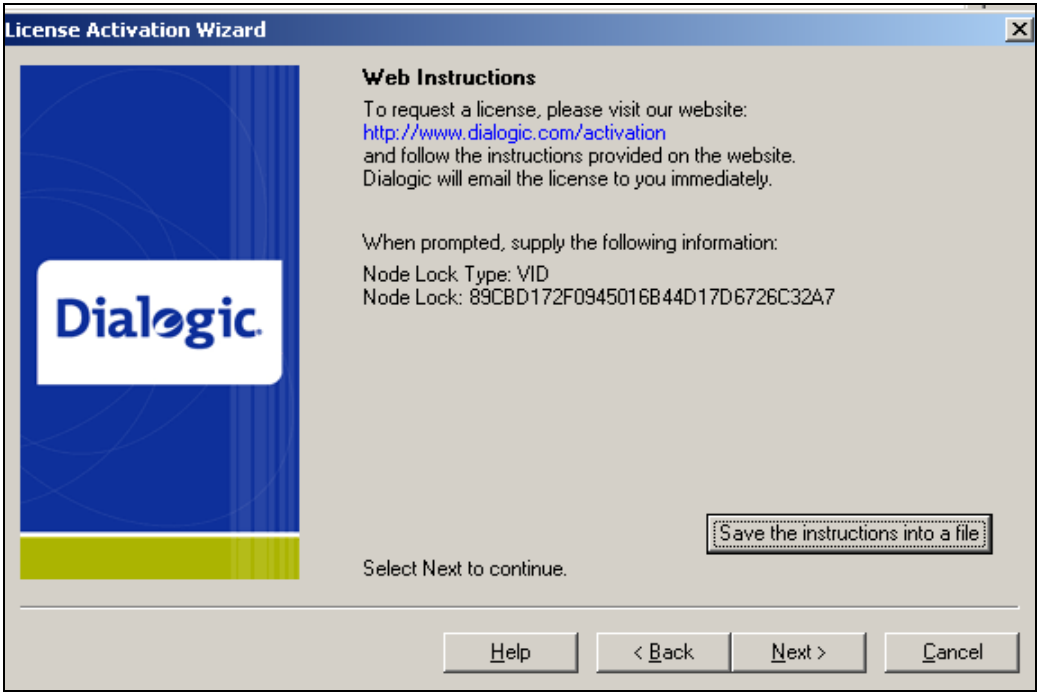


Figure G-5. Web Instructions Screen

6. Click **Next**; click **Finish** to exit the wizard. Exit the utility.

Steps You Perform on the Dialogic Website

Once you have obtained your Node Lock Type and Node Lock, do the following to perform the activation and generate your license:

1. From any system on your network, run a Web browser and access the following location: http://www.dialogic.com/activation.

2. When the Login page (Figure G-6) is displayed, enter the License Key from your SR140 Certificate and click **Submit**.

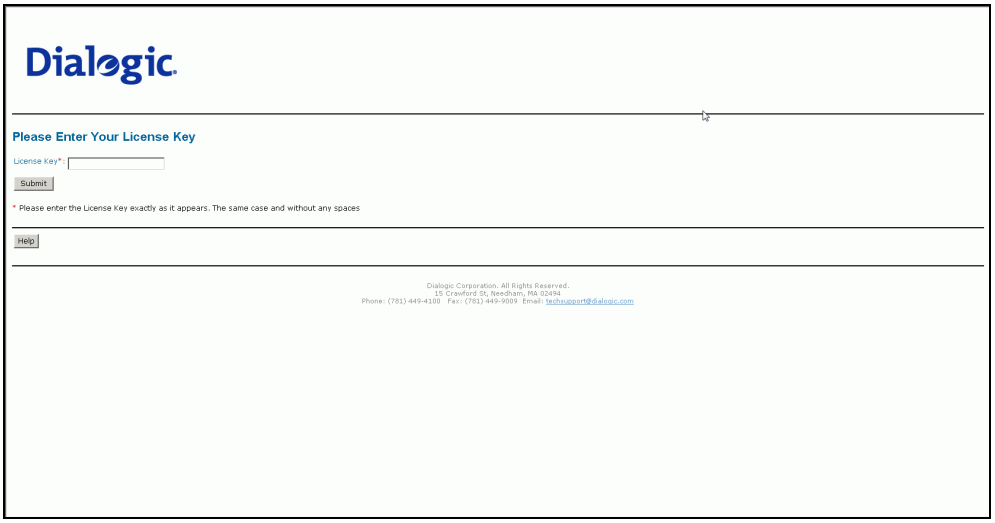


Figure G-6. Login Page

3. When the Enter Customer Information page is displayed (Figure G-7), specify all required information and click **Submit**.

Figure G-7. Enter Customer Information Page

4. When the Generate, Re-Host or View Licenses page (Figure G-8) is displayed, click the **Generate Licenses** button.

Figure G-8. Generate, Re-Host or View Licenses Page

5. When the Select Items to Activate page (Figure G-9) is displayed, select the appropriate Node Lock Type in the *Node ID Type* field and enter the Node Lock in the *Node ID* field. Click the **Generate License** button.

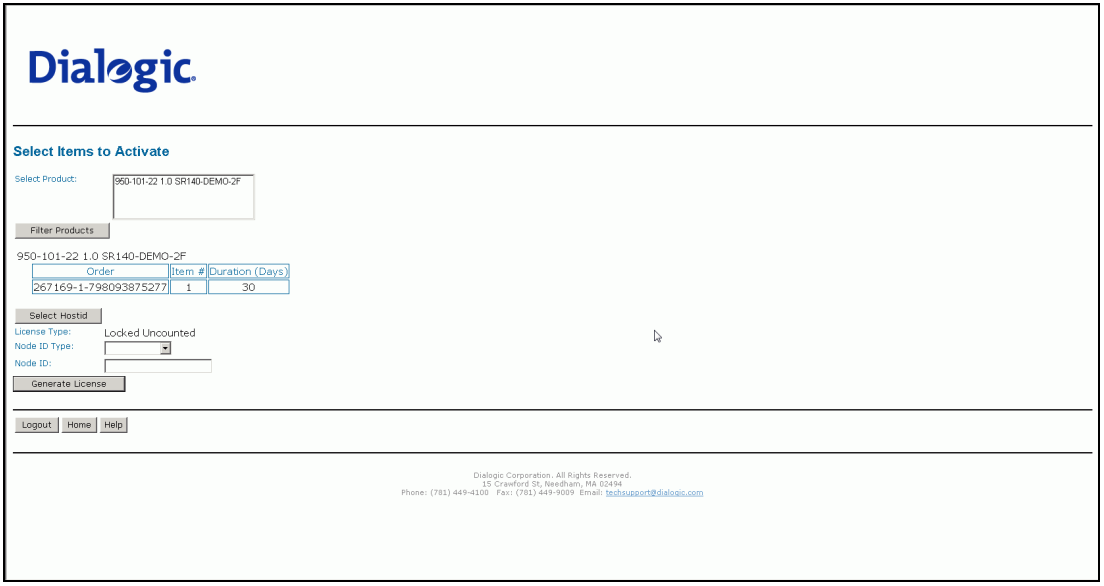


Figure G-9. Select Items to Generate Page

6. When the Confirm your Selection page (Figure G-10) is displayed, click the **Confirm** button.

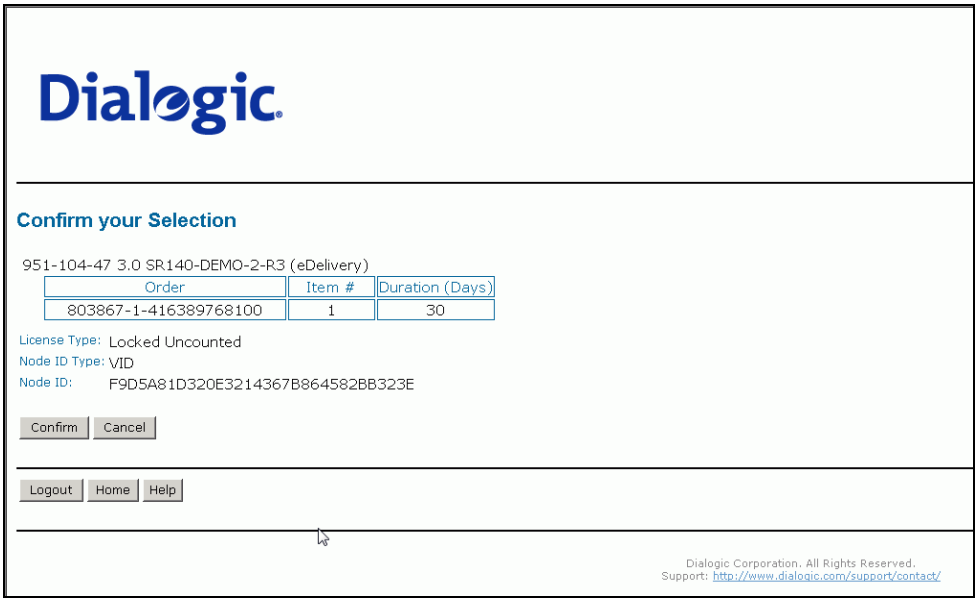


Figure G-10. Confirm your Selection Page

7. When the Deliver License page (Figure G-11) is displayed, click the **Save to File** button to save the license information to a file. Click the **Logout** button to logout of the activation website.

Figure G-11. Deliver License Page

Step to Perform on the FAXCOM Server

- Once you have saved the license information to a file, locate the license information file in the appropriate directory on the FAXCOM Server:

  Either

  drive:\Program Files\Biscom\FAXCOM Server\Cantata SR140

  Or

  drive:\Program Files (x86)\Biscom\FAXCOM Server\Cantata SR140

  (where *drive* is the drive on which you installed the FAXCOM Server software and the Program Files directory depends on whether the System Type is a 32 bit or 64-bit OS).