ShoreTel

Product: ShoreTel System   **System version:** ShoreTel5 Release 2

Adding a Fax Server to the ShoreTel System

The fax server is an important part of your unified messaging solution. It allows important fax documents to make it to the proper recipients reliably and effectively. In addition, fax servers offer many productivity-enhancing features such as fax delivery over email to give users instant and flexible access. ShoreTel is partnered with three fax server vendors that provide a range of features to match your business fax communication needs. This application note will help guide you through the steps to add a fax server to your ShoreTel IP Phone system.

Table of Contents

Overview

This document describes how to integrate a fax server into your ShoreTel IP phone system. It will specifically address the following fax server products:

- Captaris RightFax
- GFI FAXmaker
- Multi-Tech FaxFinder

If you have not already selected a fax server, this document will also cover some of the vendor specific features to assist in the selection. There are other fax server vendors, but these three vendors are the most commonly used in ShoreTel installations and represent a range of features, scalability and price to match your business needs.

This document will cover the following topics:

- Fax server benefits
- Vendor product summary
- Network design scenarios
- System requirements
- ShoreTel configuration
- RightFax configuration
- FAXmaker configuration
- FaxFinder configuration

This application note provides ShoreTel-specific configuration instructions. It does not cover general fax server installation and setup instructions. For general information, please refer to the fax server vendors' product documentation or contact one of their representatives.

Fax Server Benefits

The voice and data integration of a fax server allows you to improve the services available to your end users to make them more productive. A fax server integrates the fax communications arriving and leaving on your voice network with the messaging infrastructures of your data network. With a fax server users are enabled to:

- Receive faxes directly on computers eliminating the time-consuming task of waiting and monitoring a physical fax machine.
- Send faxes directly from users' computers eliminating the burdensome task of printing and manually faxing documents.
- Send faxes to any DID or DNIS number and direct them to a user's mailbox.
- Display fax communications inside the Microsoft™ Outlook™ inbox along with email and voice messages making it easier to manage all of communications.
- Have an individual fax mailbox and DID number rather than sharing a public fax machine and risk exposing confidential information.
- Maintain soft copies of all faxes for easy printing, distribution and file management

In addition, using a fax server used in conjunction with your ShoreTel5 system will allow you to:

- Share inbound and outbound trunks for fax services rather than having dedicated fax lines reducing monthly service costs.
- Leverage your VoIP network for inbound and outbound fax reducing your toll charges by leveraging the trunk lines closest to the fax's destination.

Vendor Overview

ShoreTel is partnered with three fax server vendors with varying features and cost, allowing you the flexibility to select the equipment that best fits your needs. Each of these vendors offers a unique fax server solution. Captaris has a solution that is feature rich capable of handling demanding fax applications. GFI offers a high value fax server solution with a selection of features targeting the medium enterprise. Multi-Tech offers a turnkey fax server appliance that is suited for small or remote offices with modest but business-class demands.

The following vendor provided information describes some of the features available on their respective products.

Captaris RightFax Features and Benefits

The RightFax Business Server provides a comprehensive set of enterprise fax and e-document delivery features and benefits that make it easy to use and manage for mid-size companies, departments and work groups.

- **Network-wide desktop faxing** - Send and receive documents directly from desktop applications from built-in RightFax client or Web browsers
- **Email integration** - Send, receive and manage faxes directly from SMTP-compliant email (Captaris is capable of using Lotus/Novell/Exchange/SMTP servers – please make sure you mention this, besides the SMTP note already here)
- **Broadcast fax** - Improve efficiency broadcasting documents to hundreds or thousands of recipients at once
- **Immediate or scheduled delivery** - Enhance service levels with instantaneous document delivery or reduce costs by scheduling delivery for off-peak telephone rates
- **Anytime, anywhere access** - Increase productivity of mobile workers by providing remote fax access via the Web
- **Library documents** - Store frequently faxed documents in a special fax library for quick, easy retrieval.
- **Phonebooks** - Store frequently used fax numbers and groups in a single location for easy retrieval

Easy Fax Server Software Administration and Management

- **Certified on Microsoft Windows Standard and Enterprise Server 2003** - Leverage unrivaled application reliability, continuity in the user interface experience and ease of installation and updating
- **Robust synchronization with Active Directory** - Simplify administration by keeping all critical data in one central location.
- **Sophisticated Administrative Interfaces** - Provide precise control over all fax server functionality

Security, Monitoring and Audit Trail

- **NT security authentication** - Take advantage of your network's established Windows security system
- **Comprehensive fax usage reports** - Monitor fax usage for cost recovery, billing or tracking purposes using built-in reporting tools or customize reports to meet unique requirements
- **Customizable notifications** - Create fax status notifications to meet your tracking and audit trail requirements
- **Fax archival** - Record inbound and outbound faxes for audit trail and to support security and regulatory compliance
- **Real-time fax status** - Obtain real-time fax status to improve monitoring and troubleshooting capabilities
- **Customizable dialing rules** - Gain precise control of outbound faxing by specifying rules and restrictions over how faxes are sent.

Reliability, Scalability and Fault Tolerance

- **Scalable from 1 to 30 channels** - Accommodate growth, scale processes for redundancy and optimize throughput and rendering
- **Automatic back up** - Conduct automatic back ups without suspending fax server software operations to ensure maximum uptime
- **Adjustable bandwidth** - Adjust channels automatically to send, receive or both, during peak intervals to control fax traffic volumes

This information was provided by Captaris. For more detailed information, please contact a

GFI FAXmaker Features and Benefits

GFI FAXmaker for Exchange/SMTP excels in its seamless integration with your mail server. This allows users to send and receive faxes and SMS/text messages directly from their email client, making GFI FAXmaker easy to use and learn. Leveraging your email infrastructure and Active Directory also allows for unparalleled scalability, reliability and hassle-free administration.

Primary Features:

- Active Directory integration reduces administration
- Supports Microsoft Exchange 2000/2003/5.5
- Supports Lotus Notes & SMTP/POP3 servers
- Automated fax delivery/inbound fax routing
- SMS/text gateway allows users to send SMS/text messages from their desktop
- Supports multiple mail servers & clustering
- Robust & scalable multi-line fax server
- Archive faxes to GFI MailArchiver, to SQL, or other Archiving solution
- Optional OCR module
- Junk fax filter
- Send faxes from any application
- Receive faxes in your email client – in fax or PDF format
- Attach Office documents, PDF, HTML and other files
- Automatic application integration & mail merges with NetPrintQueue2FAX
- Fax broadcasting using Microsoft Office mail merge
- Unbeatable pricing: $699 for 25, $1350 for 50, $1999 for 100 users.

Other features:

- Real Time Fax over IP using Brooktrout TR1034 cards
- HP Digital Sender support: Easily fax paper documents via GFI FAXmaker
- Fax annotation
- Automatically print transmission reports including miniatures of the fax
- Text API allows for easy application integration
- No schema updates
- Auto-print faxes on different network printers based on routing rules
- Call accounting: Analyze fax costs using Microsoft Excel
- Least cost fax routing via Microsoft Exchange Server's least cost routing feature
- Design coversheets in HTML or in RTF (Microsoft Word) format

This information was provided by GFI. For more detailed information or to better understand your requirements for system hardware, software and licensing please contact a GFI representative: www.gfi.com

Fax Server Vendor Comparison

For more detailed information on fax server vendors, Network Computing has an article (#52600094) that evaluates several vendors. Both the Captaris RightFax and the GFI FAXmaker are included in the review with positive ratings. The table below outlines a few of the differences between Captaris RightFax and GFI FAXmaker as reviewed in the Network Computing article.

Fax Server Features	Captaris RightFax Enterprise Suite 9	GFI FAXmaker 12
General		
Fax-Boards supported	Brooktrout, Eicon, Diva, Intel Dialogic/Gama Fax	Brooktrout, Eicon, Diva, Mainpine, MultiTech
Price as tested (by Network Computing)	**$7,995**	**$699 for 25 $1,999 for 1000**
Approval Routing	Y	N
Fax Format	TIFF, PDF	TIFF, PDF
OCR	Y	Y, with add-on module
Administration		
Web-based administration	Y	N
Least cost routing	Y	Y
Disk space monitor	Y	N
SNMP	Y	N
Standards Reports	Y	N
Integration		
Citrix support	Y	N
Database	Microsoft SQL	Microsoft SQL, MS Access, or MSDE
Directory Support	Native, Active Directory, NDS	Active Directory, Microsoft Exchange

Design Fundamentals

The ShoreTel IP Phone System provides the communications infrastructure to support converged communications. It has the ability to recognize fax calls and handle them accordingly. This section will explain how fax calls are routed through the ShoreTel system. Six design examples will illustrate some basic fax server configurations

Design 1 – Main Fax Number

It is common for businesses to have a main fax number for most fax communications. In this design, all fax communications are received through one main fax number. The ShoreTel system will manage all incoming fax communications so that they are routed to the fax server. Figure 1 below shows how an incoming fax is routed in this scenario. Each step highlighted in the figure is explained.
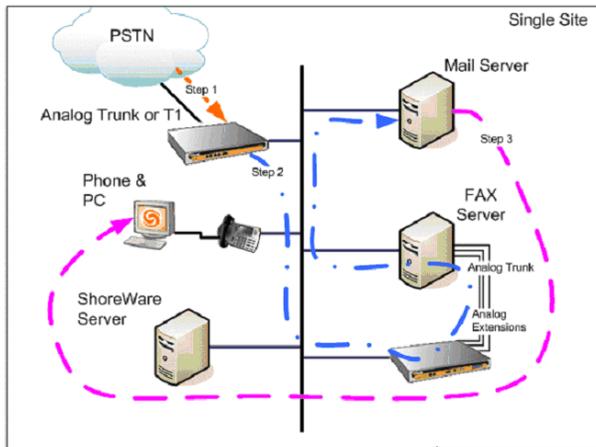
Figure 1- Inbound fax to main fax number

Step 1: The ShoreTel system receives call on main fax number.

Step 2: The call is routed through the system.

A: The ShoreTel system forwards the call over an analog extension to a fax server.

B: The ShoreTel system generates DTMF digits associated with the proper fax mailbox.

C: Fax server looks up the matching email address and forwards the message to the mail server.

Step 3: The mail server forwards the message to a mailbox.

Design 2 – User Phone Extension

With the release of ShoreTel5 Release 2 faxes can be redirected from an extension to a fax server. For example, a sales person may want to provide the customer with "one number" to remember for both voice and fax communications. The ShoreTel system is able to recognize a fax call that is received on any DID or DNIS number and automatically redirect that call to an appropriate fax server. This feature requires "Fax Redirect" to be enabled for the designated extension.

Figure 2 below shows how a fax call is received through a user's direct extension and re-routed through the system.
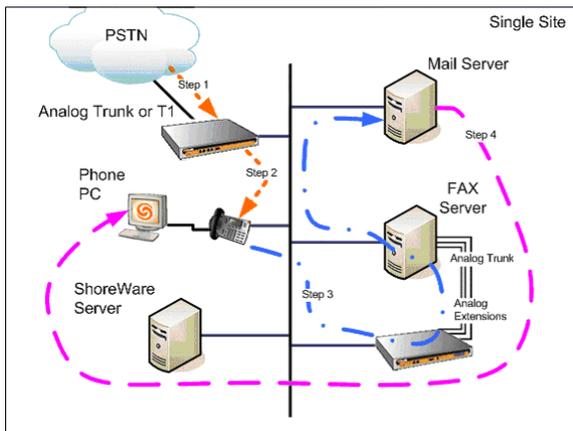
Figure 2 – Inbound fax on user phone extension

Step 1: A call is received for a user's extension.

Step 2: The call is forwarded to the user's phone extension. It is not known that the call is a fax at this time.

Step 3: The user receives the call (goes off hook). The ShoreTel system detects the fax tone and immediately redirects the call to the "site fax"

A: The ShoreTel system forwards the call over an analog extension to a fax server.

B: The ShoreTel system generates DTMF digits associated with the proper fax mailbox.

C: Fax server looks up the matching email address and forwards the message to the mail server.

Step 4: The mail server forwards message to the user's mailbox.

Design 3 – User Voice Mail Answers

This scenario is similar to Design 2 – User Phone Extension – but covers the case where the user is unavailable and the user's voice mail system answers the call. Figure 3 below shows how this fax call is routed through the system.
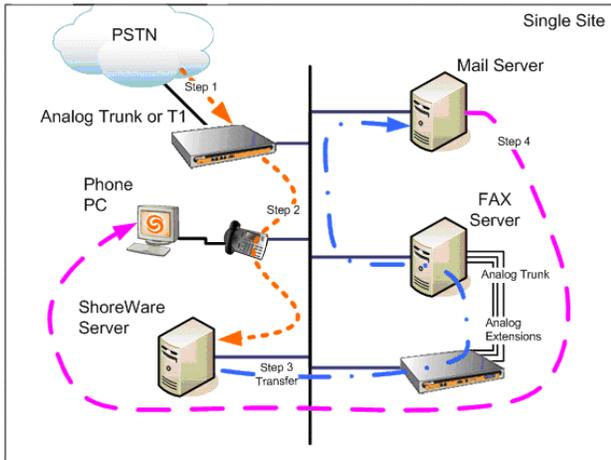
Figure 3 – Inbound fax to user extension redirected to voice mail.

Step 1: A call is received for a user's extension.

Step 2: The call is forwarded to the user's phone extension. When the user does not answer, and the call is forwarded to the ShoreWare Server and initiates voice mail greeting, effectively going off-hook from the transmitting fax point of view.

Step 3: The ShoreTel system detects the fax tone and immediately redirects the call to "site fax"

A: The ShoreTel system forwards the call over an analog extension to a fax server.

B: The ShoreTel system generates DTMF digits associated with the proper fax mailbox.

C: Fax server looks up the matching email address and forwards the message to the mail server.

Step 4: The mail server forwards message to the user's mailbox.

Design 4 – Remote Site Fax

The previous designs are based on single-site configuration. This scenario describes an inbound fax to a user extension at a remote office. Figure 4 – Remote User Extension – shows how a fax call to a remote user is processed through the system.
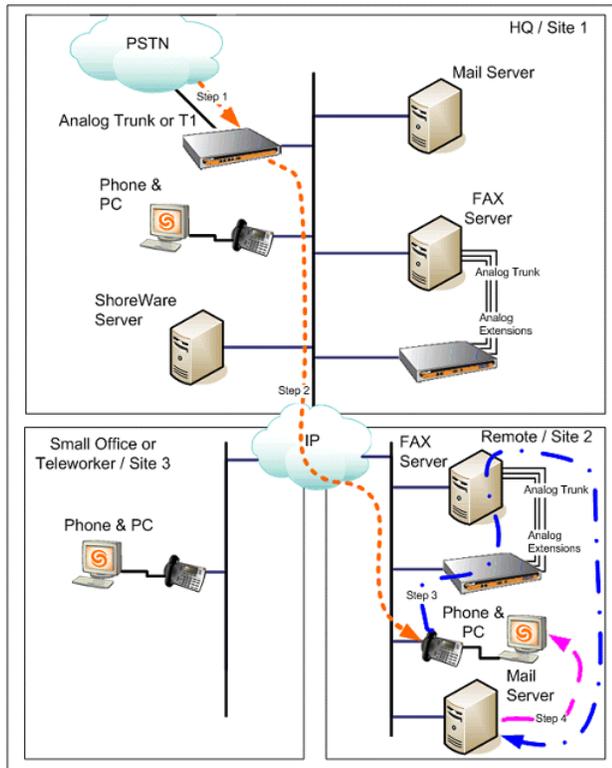
Figure 4 – Remote User Extension

Step 1: Call is received by the ShoreTel system

Step 2: The ShoreTel system recognizes that the user is located at a remote site and forwards the call over the WAN to the network at the remote site. It is not known that the call is a fax at this time.

Step 3: The user receives the call (goes off hook). The ShoreTel system detects the fax tone and immediately redirects the call to the "site fax"

> A: The ShoreTel system forwards the call over an analog extension to a fax server.
>
> B: The ShoreTel system generates DTMF digits associated with the proper fax mailbox.
>
> C: Fax server looks up the matching email address and forwards the message to the mail server.

Step 5: The mail server forwards message to the user's mailbox.

If the user does not answer in Step 3, this scenario follows the same process as in *Design 3 – User Voice Mail Answers.*

Design 5 – Teleworker / Small Office

The ShoreTel system also supports users working from a home or small office. This design differs from Design 4 – Remote Office – in that the home or small office does not have equipment other than the IP phone. Figure 5 – Incoming fax destined for Teleworker – shows how a fax call is routed in this situation.
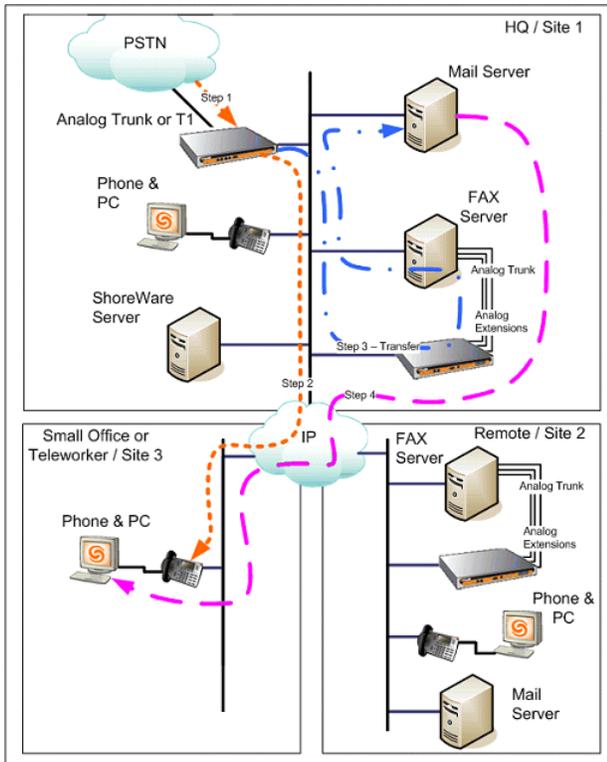
Figure 5 - Teleworker / Small Office

Step 1: Call is received by the ShoreTel system

Step 2: The ShoreTel system forwards the call to the Small Office (Site 3) over the WAN or public Internet. It is not known that the call is a fax at this time.

Step 3: The user receives the call (goes off hook). The ShoreTel system detects the fax tone and the call is immediately redirected to the "site fax"

> A: The ShoreTel system forwards the call over an analog extension to a fax server.

> B: The ShoreTel system generates DTMF digits associated with the proper fax mailbox.

> C: Fax server looks up the matching email address and forwards the message to the mail server.

Step 5: The mail server forwards message to the user's remote mailbox.

Design 6 – Sending an Outbound Fax

Users have the ability to send outbound faxes from their PC using email. This save the user time and effort since the user does not need to print the fax and go to a fax machine to manually transmit the fax. Instead, the user may send an email with the fax as an attachment. The fax server will automatically retrieve the email, convert the email to a fax document, and transmit it out.

Typically, an internal domain name is designated so the email server can identify fax messages. The user name of the email address identifies the destination fax number. The following example illustrates how an outbound fax message is routed from the user out to the network.

- A user sends an email with a fax attachment to *5551212@outfax.company.c*om.
- The email server identifies the domain *outfax.companyfax.com* and forwards the message to a designated fax mailbox.
- The fax server, which continuously monitors the fax mailbox for new messages, retrieves the new message.
- The fax server converts the email message to a fax
  - The text content of the message is used as a cover letter.
  - The attachment file is converted to a fax document
- The fax server uses the user name portion of the email address, *5551212*, to resolve the recipient fax number, *555-1212*.
- The fax goes out to this number the same way as a voice call goes out on the ShoreTel IP phone system.

Call Handling Mode

Caution: Faxes may not be received if calls are being forwarded automatically off the ShoreTel system.

Example: When users select Out-of-Office status, and redirect calls to non-ShoreTel phone, such as a cell phone, non-ShoreTel devices cannot notify the ShoreTel system to redirect. So the fax call will be lost. To support fax calls, it is recommended that the user allow the ShoreTel voice mail system to answer the call and present the caller with a "Find me / Follow-me" option.

System Requirements

The following requirements are necessary to integrate a fax server to a ShoreTel IP Phone system as described in this Application Note.

ShoreTel Requirements

- ShoreWare Server Software, ShoreTel5 Release 2 or higher. Some fax integration features are not available with previous releases.
- Sufficient analog ports on ShoreGear Voice Switches
- Sufficient ShoreWare User License(s). One user license is required for each telephone ports connected to the fax server. (One for each outbound fax port from the Captaris fax Server.)

Fax Server Requirements

Please verify the fax server requirements with the vendor's documentation or representative. You will need to determine the right server hardware, server software, user software, and appropriate licensing for your needs.

Note *the fax server software and the ShoreWare Server software must run on separate systems.*

The fax server will require telephony boards for interfacing to the ShoreTel IP phone system.

The following telephony board has been tested for compatibility with the ShoreTel IP Phone System.

- Vendor: Brooktrout
- Product: Four (4) Channel Loop Start PCI Fax Board
- Model: TR114+P4L

Please refer to the fax server vendor for a comprehensive list of supported telephony boards.

Network Requirements

The network requirements for Fax over IP are more stringent than for Voice over IP. For voice communications, 1% packet loss has negligible impact on voice quality. For fax communications, 1% packet loss eliminates approximately 3 lines per fax page. For this reason, ShoreTel recommends that packet loss not exceed 0.1% across the LAN and WAN when using fax servers with the ShoreTel system.

Voice compression also impacts fax communications. Fax machines typically require 19.2Kbps which means G.729a voice compression (8Kbps) cannot be used across the LAN or WAN for fax transmission. The ShoreTel system automatically detects fax tones and boosts the voice coding for fax calls to the value configured in ShoreWare Director. ShoreTel recommends that G.711 voice encoding be used for fax calls. See the section

on configuring voice encoding for fax calls in the administration section of this document for instructions.

General Hardware Installation

The following sections provide step-by-step instructions for configuring the fax server software to integrate with the ShoreTel IP Phone system. Before modifying fax server or ShoreTel software configurations, make sure that all the necessary hardware components are properly installed. Please refer to your fax server vendor's documentation for general, comprehensive installation instructions.

Install the Fax Server

Install the fax server including the server hardware and telephony boards. Also install any management applications.

Install the ShoreGear Voice Switch

- Install an additional ShoreGear voice switch if additional ports are required.
- Connect the voice switch to a 10/100M port on the appropriate Ethernet switch.
- Plug the voice switch into a power source and turn on the ShoreGear Voice Switch.

Install the Remaining Wiring

- Connect the desired number of extension ports to be used for outbound fax services from the ShoreGear Voice Switches to the fax server.

    Note: It is recommended that ports 9-24 be used for extension ports when using the ShoreGear-24 Voice Switch.

Configure Software

Once the hardware equipment is completely installed, configure the software settings using one of the following sections matching your fax server.

ShoreTel Director Configuration

The following steps describe how to setup the ShoreTel system to support three basic types of fax configurations: inbound faxes through a main fax number, inbound faxes through the end user's phone extension and inbound faxes through a remote end user's extension. It assumes that a fax server has already been installed and that any general configuration has completed. Please refer to the ShoreTel System Administration guide for general configuration information, such as adding a new user.

Configure Call Control

The ShoreTel IP Phone system uses DTMF codes to relay end user routing information to the fax server. It may be necessary to modify the ShoreTel DTMF parameters to integrate smoothly with some third party fax servers. For example, the GFI FAXmaker and Multi-Tech FaxFinder do not support options to adjust the wait time before DTMF detection. (The Captaris does support this option). However, it is possible to adjust the delay in the ShoreTel system to make sure there is enough time for the fax server to start detecting DTMF tones after going off-hook.

- From the ShoreTel Director, go to the Call Control Options page.

Figure 6 - Call Control Options

- *Delay Before Sending DTMF to Fax Server*. Enter a delay value that provides adequate wait time depending on the your fax server model.

  Note: *For the Captaris server*, the value 2000 (2 seconds) has been tested in ShoreTel with successful results while the Captaris server is configured as (wait for DTMF digit A and 0 seconds) (forcing the Captaris server to immediately accept faxes – Please see the *Captaris Configuration* section for more details). Setting the ShoreTel parameter to less than 2000 might create issues routing faxes to wrong destinations

- *Fax and Modem Calls*: Select G.711

Configure Main Fax Number

The following steps show an example configuration for a main fax number.

Step 1: Create a new user profile for the fax server.

Figure 7 - Edit User Profile

- *First and Last Name*: A new user is created, *Fax Server 0* is used as an example

- *Number*. Enter the extension, 3540 is used as an example main fax number

- *License Type*: Set to "*Extension-Only*"

- *DID*: The DID that is assigned with the fax number +1(408)331-3540.

- *Home Port*: Indicate the switch, CorpSG24-1-1, to which fax calls are forwarded.

- *Fax Support*: Select "*This extension is connected to a Fax Server*"

Step 2: Modify Personal Options

![ShoreTel]
960 Stewart Drive Sunnyvale, CA 94085 USA Phone +1.408.331.3300 +1.877.80SHORE Fax +1.408.331.3333 www.ShoreTel.com

15
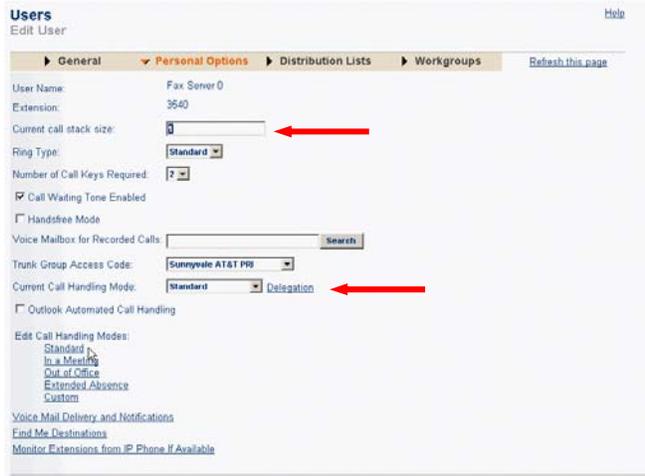
Figure 8 – Modify Personal Options

- *Current Call Stack Size:* Set to **1** to prevent multiple faxes being sent to Fax Server 0 at the same time.

- *Current Call Handling Mode*: Set to **Standard** and go to Step 3 to modify redirection options.

Step 3: Modify Call Handling Modes for "Standard" and designate call redirection options for the fax server extension.
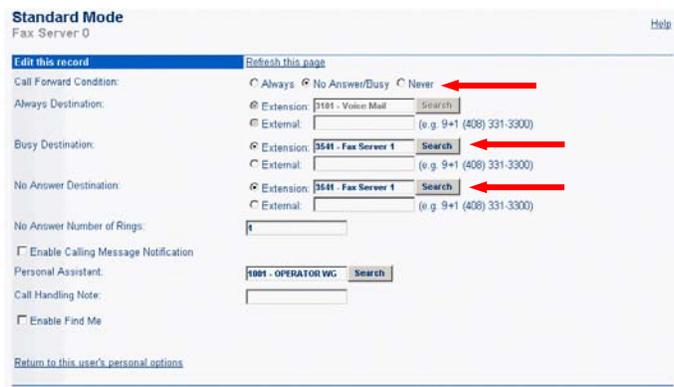
Figure 9 - Modify Call Handling Mode

If you have multiple fax servers, you can configure them as a pool of resources.

When Fax Server 0's extension has **No Answer or is Busy**, the system forwards the call to Fax Server 1's extension.

This can be repeated (as part of Step 4) for additional fax servers.

Suggestion: If multiple fax servers are configured, be sure to arrange them in a logical format. For example, Fax Server 0 will redirect to Fax Server 1, Fax Server 1 will redirect to Fax Server 2, etc. This way fax calls received through the main fax number have the maximum opportunity in case a fax server is busy or out of service.

Step 4: Create a profile for each fax server, repeating steps 1 through 3

Figure 10 - Fax Server Profile

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960 Stewart Drive Sunnyvale, CA 94085 USA Phone +1.408.331.3300 +1.877.80SHORE Fax +1.408.331.3333 www.ShoreTel.com

Configure End User's Phone Extension

Step 1: Create or a user's profile, or edit an existing profile. In addition, configure the user's account.

- Go to the *Edit User* window.

Figure 11 - Edit User Profile

- *DID*: End users should have a DID number assigned, so that when an inbound fax is received, it is directed to the user.

- *Fax Support*: select "Redirect Inbound Fax Calls to Site Fax Extension"

Note: When users modify "Call Handling" it's important to keep in mind that when "Call Forwarding" is used to send the call directly to an external number the fax redirection will not work. In this case it's recommended they have the system answer and in the message tell the user to press 1 and use the "Find Me / Follow Me" feature thus giving the system the ability to detect a fax.

Configure User's Phone Extension at a Remote Site

Each site needs to have its "*FAX Redirect Extension*" configured. This allows the administrator to select the destination of faxes into the site. This can either be at the actual site or through a FAX server at another site.

Step 1: Create a new end user profile, or edit the site information page.

Figure 12 - Fax Redirection to Remote Site

Step 2: From "*FAX Redirect Extension*" select the destination by clicking "Search" or typing the "FAX Server" extension Modify Site settings

Captaris RightFax Configuration

Note: This section covers configuration instructions for the Captaris RightFax. If you have a GFI FAXmaker or Multi-Tech FaxFinder, please refer to the appropriate section.

Once all hardware components are installed, it is necessary to modify the Captaris RightFax server software and the ShoreTel software so they can communicate with each other and properly route faxes to the proper recipients. The following steps will explain how to establish DTMF communications and email forwarding.

Setup the Telephony Boards

Start by configuring the telephony boards in the fax server with your system settings.
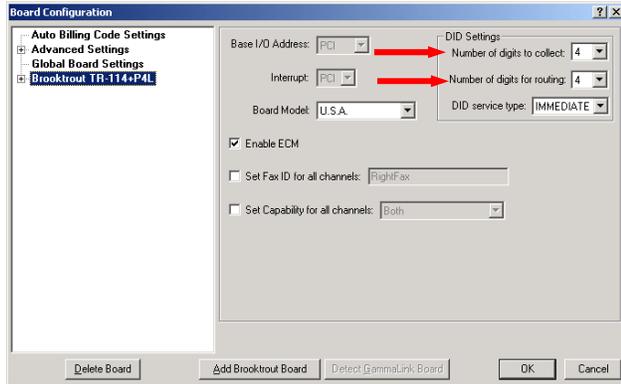
Figure 13 - Configure Telephony Board

- Open the RightFAX board server configuration applet from the control panel.
- In the board configuration dialog box, configure the DID settings to match the number of digits in your ShoreTel systems dialing plan.

    o *Number of digits to collect:* Select the number of digits in your dialing plan

        o *Number of digits for routing*: Select the number of digits in your dialing plan.

Enable DTMF Tones on RightFax

The ShoreTel IP Phone System uses DTMF tones to communicate fax recipient information to the fax server. It is necessary to configure the Captaris RightFax system to accept ShoreTel DTMF codes to properly communicate.

- Start by opening the RightFax Enterprise Fax Manager application. The Enterprise Fax Manager window shows data and statistics about RightFax servers and the components of each server.
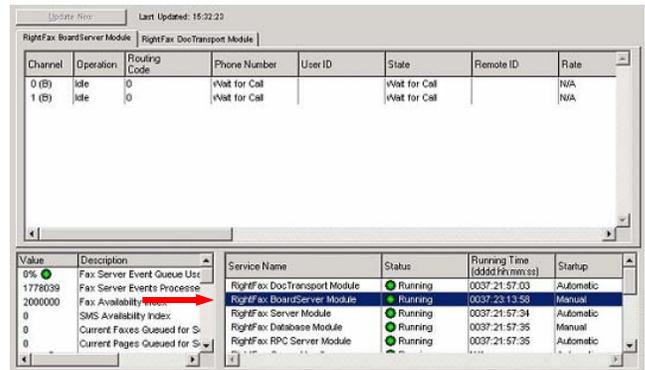
Figure 14 - RightFax Enterprise Fax Manager

- Highlight the icon in the left column for the fax server, then select and open **RightFax BoardServer Module** to configure call routing for inbound faxes. This will open a DocTransport Configuration Window
- Click on **Configure BoardServer** to open the Board Configuration Window to configure the DTMF codes.

Configure DTMF codes

The ShoreTel system uses specific DTMF signals to establish communications to transfer recipient information to the RightFax fax server. Use the following settings to specify the codes the RightFax server should expect when it receives a fax call.

Important: *the following settings are required to enable DTMF communications between the ShoreTel system and the RightFax fax server.*
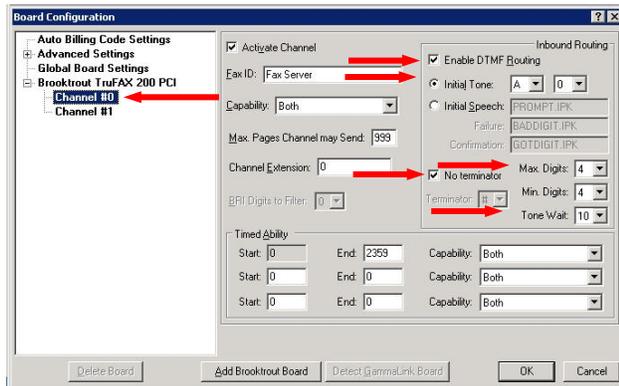
Figure 15 - Configure DTMF Settings

- Select Channel #0, or the appropriate fax line.

- *Inbound Routing* select **Enable DTMF Routing**. This is how the ShoreTel IP Phone system communicates with the fax server about fax recipient information

- *Initial Tone*: Select **A** and **0**. This tells the fax server to expect the tone DTMF tone for "A" to initiate communications, and to start monitoring immediately after 0 seconds delay. (ShoreTel will not actually send the DTMF digit "A", but setting the delay value to "0" forces the Captaris server to receive faxes immediately without any delay In other words, the setting of "A" and "0" is a

way to force the Captaris server to immediately accept faxes

- *No Terminator:* Select **no terminator** since the ShoreTel system will not transmit a termination tone ("#") to end the communications.

- *Max and Min Digits*: The number of digits in your dialing plan.

- *Tone Wait*: Set to **10**, for a 10 second communications time-out.

Repeat as necessary for other channels.

Enter RightFax Email Forwarding Database

Once the RightFax fax server has received the recipient's extension information via DTMF tones, it can forward the fax message via email to the recipients email address. Using the recipient's extension information, the RightFax fax server will look-up in its user database and retrieve the recipient's email address.

There are different ways to populate the user database.

Option 1: For large companies, it will be more effective to import the database from the NT Domain. Under the *Utility Menu*, select *Import Users from NT Domain*.

Option 2: It is also possible to add single users manually. In the left column of the RightFax Enterprise Fax Manager application, right-click on *Users* and select *New*. This will open a User Edit Window, shown below.
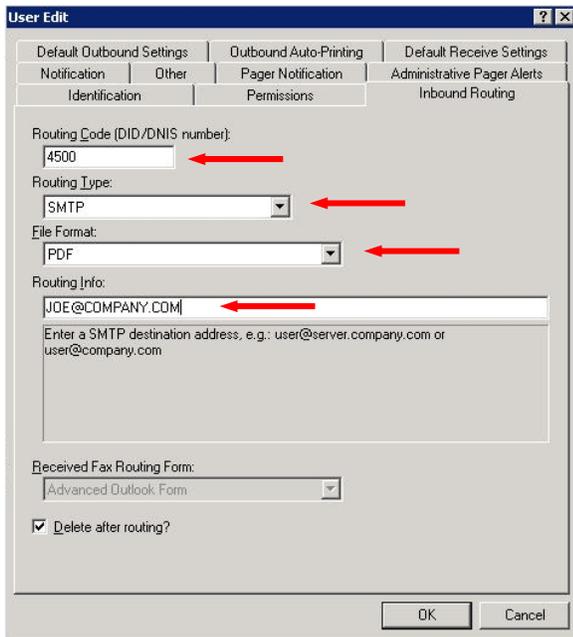
Figure 16 - SMTP Fax Routing

- Select the **Inbound Routing** tab.

- *Routing Code*: Enter the new user's extension.

- *Routing Type:* Select delivery mechanism to the recipient user. STMP email service is common; if email is selected, the Routing Info field must be filled.

- *File Format*: Select the desired format for the embedded fax message.

- *Routing Info*: Enter the new user's email address.

Configure RightFax Email Gateway

The email gateway functions as the communications link between the fax server and the email server for outbound fax messages. Emails addressed to the fax server are automatically retrieved from the email server by the fax server, which then converts the message to a fax and transmits it out through a fax call. Please refer to the section, *Design 6 – Sending an Outbound Fax*, for a more detailed explanation of the process.

Before configuring the RightFax email gateway, the email server needs to be setup to identify and forward fax emails:

- Create a new POP3 account on the email server specifically for the email gateway.
- Define a dedicated domain name on the email server for outbound fax transmissions. This makes it easy for users to designate fax emails.

Emails sent to the specified domain name will automatically be forwarded to a fax mailbox. The email gateway will monitor this fax mailbox and retrieve new messages. Configure the email gateway with the email account settings:
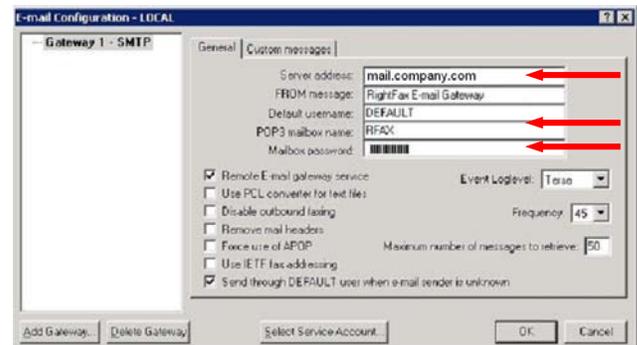
Figure 17 - Configure Email Gateway

- *Server Address*: Enter the email server address
- *POP3 Mailbox* Name: Enter the mailbox account name
- *Mailbox Password*: Enter the password for the account

GFI FAXmaker Configuration

Note: This section covers configuration instructions for the GFI FAXmaker. If you have a Captaris RightFax or Multi-Tech FaxFinder, please refer to the appropriate section.

Once all hardware components are installed, it is necessary to modify the GFI FAXmaker server software and the ShoreTel software so they can communicate with each other and properly route faxes to the proper recipients. The following steps will explain how to establish DTMF communications and email forwarding.

Setup the Telephony Board

Start by configuring the telephony board in the fax server with your system settings.

- Open the GFI FAXmaker configuration tool. Right click on the *Lines and Devices* node in the navigation column, and select *Properties*.
- Click on the Add button to add a new fax line.
- Set configuration to match your telephony board.
- Click OK, to continue to the Properties Dialog window, as shown in the figure below.
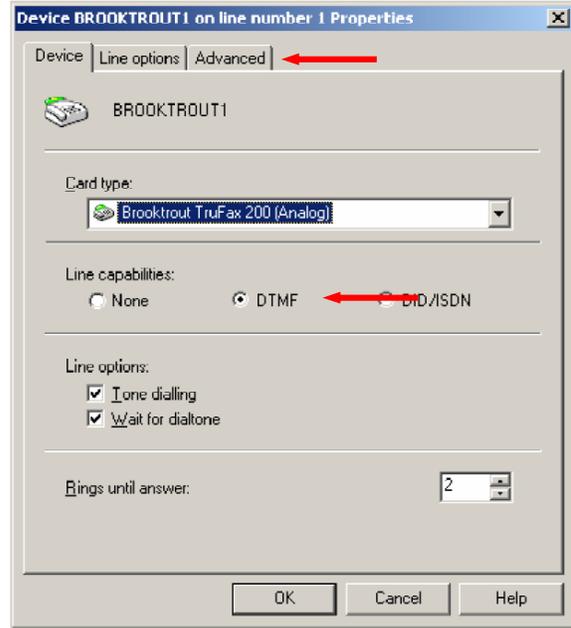
Figure 18 - Setup Telephony Board

- *Line Capabilities*: Select DTMF. The ShoreTel IP Phone System uses DTMF signals to communicate with the fax server.
- Select the Advanced Tab to continue configuration.
- *Number of DTMF/DID digits*: Select the number of digits in your extension format. For example, 1111 has 4 digits.

Active Directory

After the fax server hardware has been installed and configured, you need to specify the fax users.

If you use Active Directory, FAXmaker will allow you to specify users directly from Active Directory. This greatly reduces user administration by filling in the correct email addresses automatically.

If you do not use Active Directory, you have to manually enter an email address for each fax user, or import a user listing.

Adding DID/DTMF Routes

The ShoreTel VoIP system uses DTMF signals to communicate fax routing information with the fax server.

* Click on the *Routing – DID/DTMF* node in the navigation column, and select *New DTMF/DID Route*.
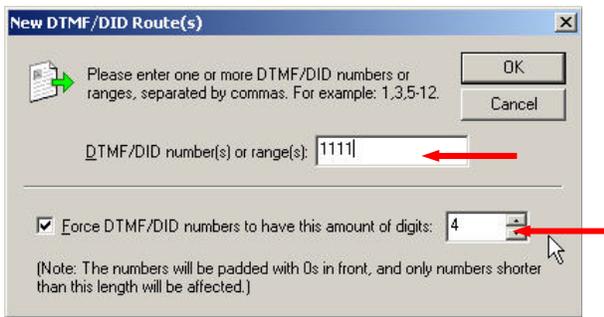
Figure 19 - Setup DTMF Routing

* *DID/DTMF Numbers or Range*: Enter the user's routing number. You can enter a range of DID numbers.
* *Force DTMF/DID numbers*: Optionally, specify the number of digits to use.
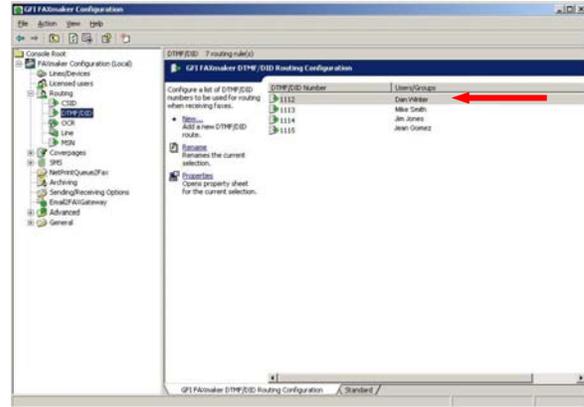
Figure 20 - Select DID Number

* Double click on the created extension number to open the *Properties* window.
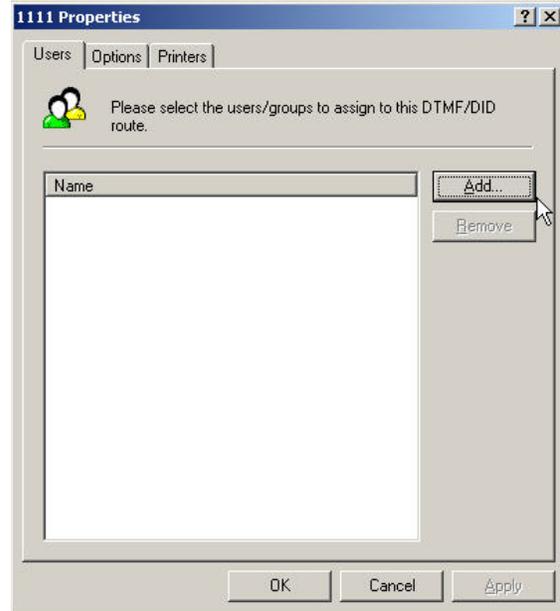
Figure 21 - Associate DID/DTMF Route with User

* Under the *Users* tab, select the designate user to receive faxes from this DID.
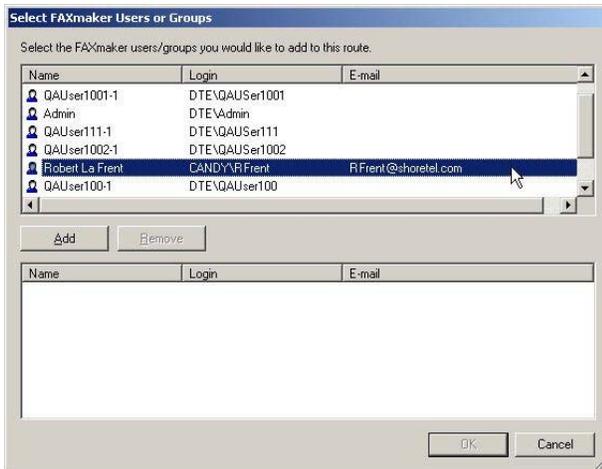
Figure 22 - Select User

- Add the desired user (or multiple users), and click on OK when done.

Configure FAXmaker Email Gateway

The email gateway functions as the communications link between the fax server and the email server for outbound fax messages. Emails addressed to the fax server are automatically retrieved from the email server by the fax server, which then converts the message to a fax and transmits it out through a fax call. Please refer to the section, *Design 6 – Sending an Outbound Fax*, for a more detailed explanation of the process.

Before configuring the email gateway, the email server needs to be setup to identify and forward fax emails:

- Create a new POP3 account on the email server specifically for the email gateway.
- Define a dedicated domain name on the email server for outbound fax transmissions. This makes it easy for users to designate fax emails.

Emails sent to the specified domain name will automatically be forwarded to a fax mailbox. The FAXmaker email gateway will monitor this fax mailbox and retrieve new messages. Configure the FAXmaker email gateway with the email account settings:

- In the GFI FAXmaker Configuration window, right-click on the *Email2FaxGateway* node in the left navigation column, and select *Properties*.
- In the Email2Fax Gateway Properties window, select the *POP3* tab to setup the fax mailbox.
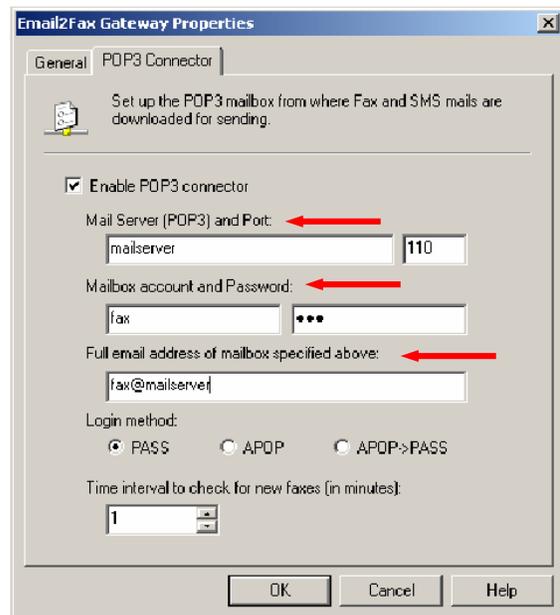
Figure 23 - Configure Email Gateway

- *Mail Server and Port*: Enter the mail server name.
- *Account and Password*: Enter the POP3 account name and password for the fax mailbox.
- *Full email address*: Enter the complete email address for the fax mailbox.

Multi-Tech FaxFinder Configuration

Note: This section covers configuration instructions for the Multi-Tech FaxFinder. If you have a Captaris RightFax or GFI FAXmaker, please refer to the appropriate section.

The Multi-Tech FaxFinder is a stand-alone fax appliance and may have fewer installation steps than other fax solutions. This section describes ShoreTel-specific configuration settings. It is intended to supplement the Multi-Tech documentation. Please refer to the Multi-Tech documentation for more comprehensive configuration instructions.

FaxFinder operates in two modes: *PBX Routing Mode* and *POTS Mode*. PBX Routing Mode uses DTMF signaling to route fax calls from the ShoreTel IP Phone system. In POTS Mode, all received faxes are routed to a single E-mail address. The PBX Routing Mode is modified in the Modem Configuration Window.

Configure Settings

Start by configuring FaxFinder's routing mode and operating options.

- Log in to FaxFinder.
  - o Use a browser window to access FaxFinder's IP address.
- Go to the *Modem Configuration* window.
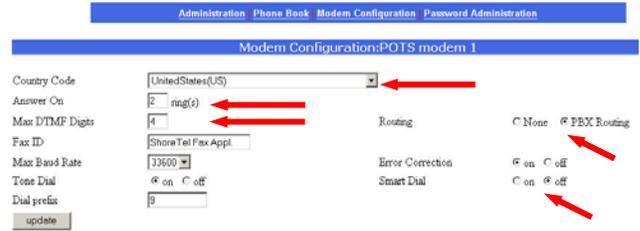
Figure 24 – FaxFinder Modem Configuration

- *Country Code*: Enter country
- *Answer on*: Select how many rings to allow before a call is answered
- *Max DTMF:* Set to number of extension digits
- *Routing:* Set routing mode to *PBX Routing*.
- Smart Dial: Set to *Off*

Note: It may be necessary to adjust the DTMF delay time on the ShoreTel system to insure that the FaxFinder has enough time to start detecting DTMF tones after going off-hook. Please refer to *Configure Call Control* in the ShoreTel Configuration Section.

Phone Book

The FaxFinder Phone Book manages user information for routing faxes. It is necessary to enter data for all fax users.

- Go to the *Phone Book* window.

Figure 25 – FaxFinder Phone Book

- Add user info: Name, UserID, email, Extension Number

Configure Mail Server

- Go to the *Administration* window.

Figure 26 – FaxFinder SMTP Configuration

- *SMTP Server Address*: Enter the server address
- *Server User ID*: Enter the account user name
- *Password*: Enter the account password

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Version Information

This application note applies to the following releases of the ShoreTel System:

- ShoreTel 5 Release 1.2 or newer

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