TriTeal Enterprise Desktop (TED™) 4.0

TEDFAX 4.0 User's Guide

Printed in USA

Part No. TED011004000

Printing History
August 1995 ... First Edition
Printed in the U.S.A

Sales Information and Technical Support

TriTeal Corporation
2011 Palomar Airport Road, Suite 200
Carlsbad, CA 92009
USA

Tel: (619) 930-2077
Fax: (619) 930-2081
Support E-Mail: support@triteal.com
Sales E-Mail: info@triteal.com
World Wide Web: http://www.triteal.com/

Contents

Preface

About this User Guide

This manual makes the use of the TEDfax simple. It provides comprehensive product information and complete instructions that include plenty of illustrations to support the text.

Who Should Use This Book

TEDfax is easy to use and only requires familiarity with the hardware on which you're going to run TEDfax. An understanding of UNIX principles is helpful, but not essential.

Note – The *TriTeal Enterprise Desktop 4.0 (TED^{TM}) is based on* Common Desktop Environment 1.0 (CDE) technology. This manual may refer to the desktop as TriTeal Enterprise Desktop, TED, or simply, the desktop.

How This Book Is Organized

This manual includes the following chapters:

Chapter 1 has an *Introduction* about TEDfax such as product description, platform compatibility, and features.

Chapter 2 is *Getting Started* and includes a discussion of how to install the TEDfax.

Chapter 3 *Learning TEDfax: A Tutorial* provides step-by-step instruction on how to use TEDfax.

Chapter 4 discusses procedures for *Sending Faxes*.

Chapter 5 shows *Viewing Faxes* procedures such as viewing INBOUND and FAXBOX directories.

Chapter 6 describes *Using TEDfax Phonebooks.*

Chapter 7 discusses *Using TEDfax Queues*.

Chapter 8 gives *Advanced Topics* for system administrators.

What Typographic Changes and Symbols Mean

The following table describes the type changes and symbols used in this book.

Table P-1 Typographic Conventions

Typeface or Symbol	**Meaning**	**Example**
`AaBbCc123`	The names of commands, files, and directories; on-screen computer output	Edit your `.login` file. Use `ls -a` to list all files.
AaBbCc123	Parameters or variables; replace with a real value	To delete a file, type `rm` *filename*.
AaBbCc123	Book titles, new words or terms, or words to be emphasized	Read Chapter 6 in *User's Guide*. These are called *class* options. You *must* be root to do this.

In addition, any of the above type changes may appear in bold for additional emphasis.

Introduction 1

This User's Guide includes instructions necessary to configure and use TEDfax.

Note – Before you begin using the TEDfax software, read this User's Guide. It describes how to install, launch and use your copy of TEDfax. Perhaps most important, this guide has a tutorial to quickly acquaint you with TEDfax's essential functions.

Product Description

TEDfax is a powerful, easy-to-use fax software that enables you to send and receive faxes directly from your UNIX workstation, server, or X terminal, without ever leaving your desk.

TEDfax allows you to send and receive faxes to/from any fax machine. Faxes sent by TEDfax have a cleaner appearance than those sent by conventional fax machines. That's because while fax machines scan the pages (like a photocopier), TEDfax sends the actual digital data, similar to sending data to a laser printer.

With TEDfax, you may compose faxes from a variety of sources: text, PostScript files, applications, or simply by typing your message in the message window. A cover page with your company name and logo can even be included automatically.

You may view the faxes you receive (and those you send) on your computer's screen, or you may print them to a laser printer. In fact, you can print faxes automatically when they are received.

TEDfax Features

The following is just a partial list of TEDfax's features.

TEDfax is a robust software package, designed to appeal to both novice and advanced UNIX users. Among TEDfax's primary features are:

- A Phonebook Database which You Can Share

  TEDfax's Phonebook allows you to save the fax numbers of people that you send faxes to frequently. You can even build large lists of recipients, and send a fax to all of them just by selecting a single name from the Phonebook.

- Links to Other Applications.

  TEDfax comes with a number of simple filters that, when installed, allow you to send faxes directly from within other applications, like FrameMaker.

- ICR Autorouting (Sun OS and Solaris 2.3 Platforms Only)

  Normally, TEDfax puts the faxes it receives in an "inbound" directory, but has no way of knowing for which TEDfax user the fax was intended. When Intelligent Character Recognition (ICR) Autorouting is enabled, however, TEDfax searches the cover page (of every received fax) for the name of an TEDfax user. If it finds a user name, it sends the fax directly to that person.

- Email Notification of Important Events.

  TEDfax can be configured to send you an Email notification that your fax was not delivered to the intended recipient's machine.

- A Command Line Interface

If you don’t wish to use the Graphical User Interface (GUI), you can use TEDfax without ever having to use the “user-friendly” interface. Furthermore, you can use the command line utilities to link TEDfax to nearly any program that uses a PostScript printer.

The TEDfax user interface is based on CDE/Motif, the most commonly used UNIX graphical interface. If you’ve never used a CDE/Motif-based program before, you should consult the tutorials that came with your computer. CDE/Motif is, by the way, very similar to most other graphical interfaces you may have used on other computers.

- Shellscript Implementations of Important Features

  Many of TEDfax’s features are accomplished through the use of UNIX shellscripts. If you’re an advanced user, and your company has requirements that are not met by TEDfax, you can change how TEDfax works by changing the shellscripts that it uses.

TEDfax Configuration

While it is not necessary to install TEDfax separately from the TriTeal Enterprise Desktop, there are some configuration issues that should be defined prior to using or de-installing TEDfax. The configuration should only be done by a system administrator. You must login as `root` to be able to access the FaxAdmin tool.

Note – If you are deinstalling TEDfax please go through the configuration steps to deselect the system preferences (Figure 1-2, “FaxAdmin Screen,” on page 4) and to delete the modem configuration from the Install Modems screen (Figure 1-3, “Install Modems Screen,” on page 6).

From the Application Manager, open the TEDfax icon by double-clicking on it and then double-click the FaxAdmin icon. The FaxAdmin icon is shown below in Figure 1-1

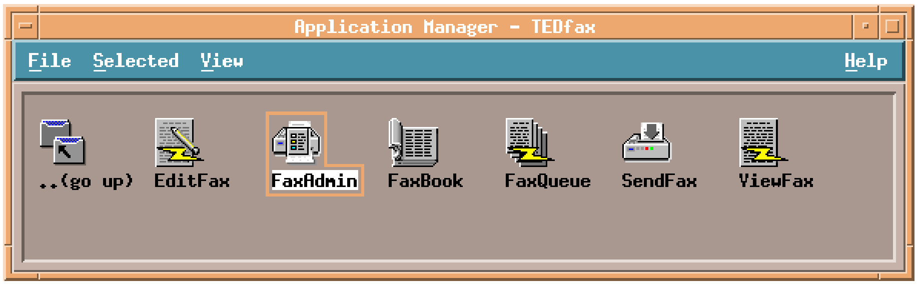


Figure 1-1 FaxAdmin Icon

After you open the icon, the FaxAdmin screen will appear listing several system preference check boxes. Select or deselect the options listed according to your system requirements. The choices availabe are for email options, printers, and auto-restart.

This screen is shown below in Figure 1-2.

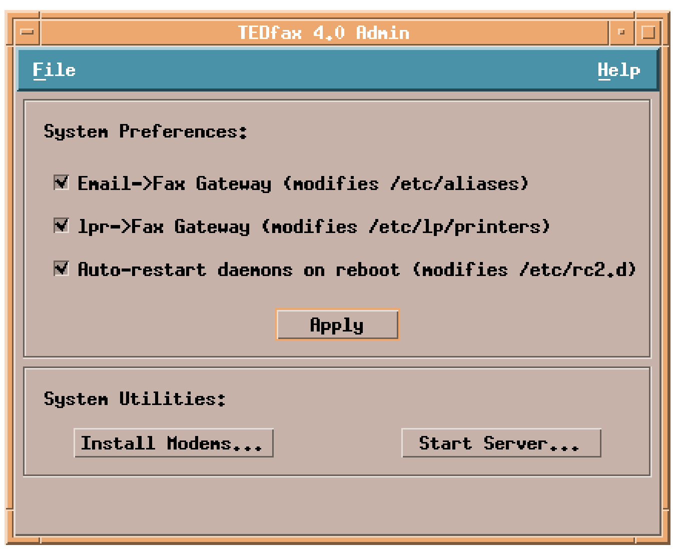


Figure 1-2 FaxAdmin Screen

Detailed descriptions of these checkboxes are listed below:

Email->Fax Gateway.	By default this is checked. When checked, this will add an entry in `/etc/aliases` and run newaliases to make the entry visible to the system. This will allow users to send email to 'fax' and have that Email filtered through TEDfax to a remote fax machine.
lp or lpr -> fax gateway.	By default this is checked. When checked, this will add an entry to `/etc/printcap` or install a printer model in `/etc/lp/model` or `/var/spool/lp/model` which will allow users to treat TEDfax as a 'fax printer'. Jobs can be sent via lpr or lp requests and their output sent to a remote fax machine through TEDfax.
Auto-Restart daemons on reboot.	By default this is checked. When checked this will add an entry to `/etc/rc.local`, `/etc/rc2.d`, or `/etc/rc` to cause the TEDfax daemons to restart when the system reboots.

1. Click on the button labeled Install Modems...

The Install Modems screen will appear, as shown in Figure 1-3.

Figure 1-3 Install Modems Screen

It is important the you enter the *area code* and *fax number* with area code for you fax modem. It is also important that you enter a valid *device name* for the fax modem. The default entry for the first TEDfax modem should be called "modem1" and should have a spool directory named "Any."

2. Fill out the empty fields within the Install Modems screen. The fields are described and listed below:
   - Modem Name: name of modem (unique and REQUIRED),
   - Area Code: (typically a 3 digit AC) - REQUIRED,
   - Number: (typically AC+PHONE#) - REQUIRED,
   - Pre-Dial: (a pre-dial string such as 9,) OPTIONAL,

- Post-Dial: (a post-dial escape code) OPTIONAL,
- Device: (device name where modem lives) REQUIRED,
- SubDirectory: (directory name for outbound fax management and for 'modem1', must be Any) REQUIRED.

3. Click on the OK button.

   The serial device file will be `chown`-ed to `root`. The serial line will become a dedicated fax line.

   You'll be returned to the FaxAdmin screen again.

4. Click on the button labeled Start Server...

   The Start Server screen will appear, as shown below in Figure 1-4.

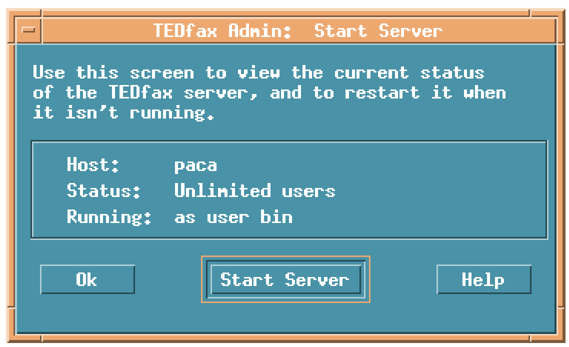


Figure 1-4 Start Server

5. Click on the Start Server button.

   Be patient. The first thing that TEDfax will try to do is to talk to the server on the current host to make sure that one isn't already present. It may take some time (up to a minute) for this connection to fail. A status of what TEDfax is doing is displayed at the bottom of the start server popup.

   If all goes well, the "status" field will change from "Unable to connect" to "connected." You may now exit the FaxAdmin tool. TEDfax is now ready for use.

Starting TEDfax

To start TEDfax, locate the TEDfax icon in the Application Manager. It is shown below in Figure 1-5.

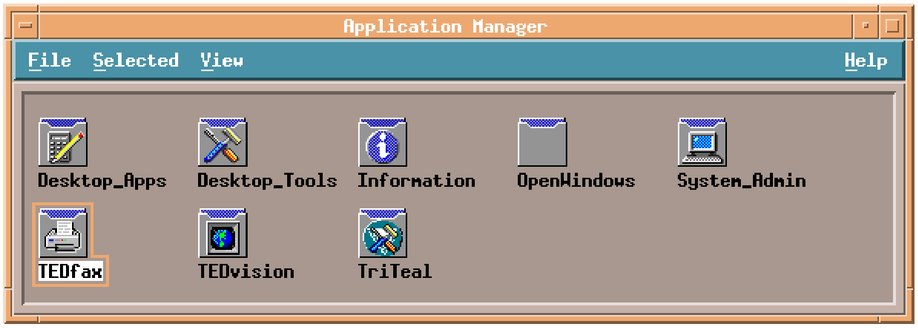


Figure 1-5 TEDfax Icon

Double-click the TEDfax icon. This will open up the TEDfax directory and list the available options: EditFax, FaxAdmin, FaxBook, FaxQueue, SendFax, and ViewFax. The TEDfax Application Manager is shown below in Figure 1-6.

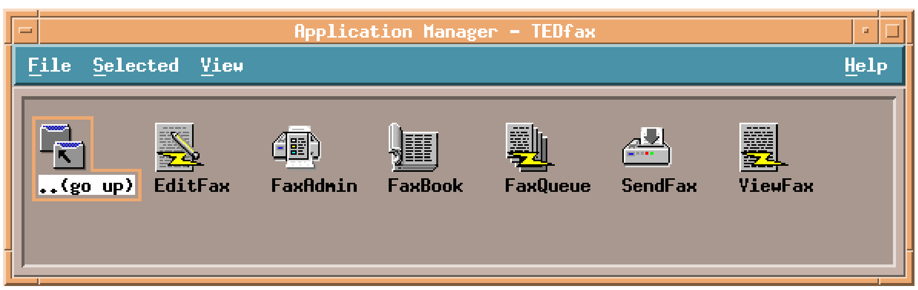


Figure 1-6 TEDfax Applications

From this location, you can access all of the features of TEDfax. For more information on using TEDfax please see *Chapter 2, Learning TEDfax*.

Learning TEDfax 2

This chapter explains how to use TEDfax's fundamental features. It is TriTeal's belief that examples are among the best tools for learning. Therefore, the procedures in this chapter are presented within a step-by-step tutorial that uses a lot of examples. For instance, you'll be instructed to send a fax to yourself. Feel free to send a fax to anyone you wish instead of actually using the exact example items presented.

The method of using TEDfax's menus, screens, and fields is consistent throughout all aspects of TEDfax; once you know how to use the send feature, you'll be capable of exploring all features that TEDfax offers.

Note – To learn TEDfax, this chapter should be read from beginning to end without any interruptions. It will take approximately 20 minutes to learn how to send and receive faxes using TEDfax.

Sending Faxes

This section will familiarize you with using TEDfax's buttons and menus as well as how to send a fax. Follow these instructions to send a fax:

1. Locate the SendFax icon in the TEDfax folder in the Appliction Manager. It resembles the icon shown below in Figure 2-1.

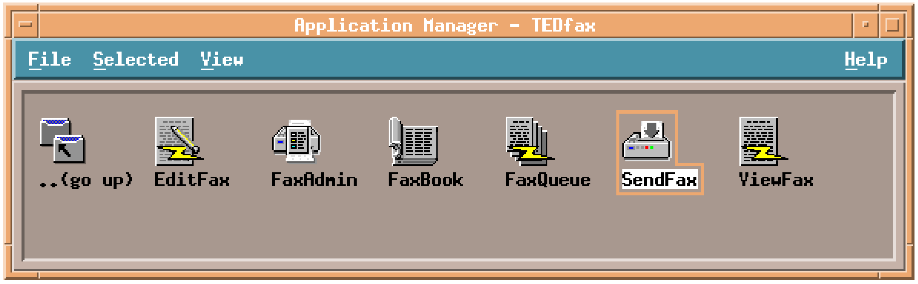


Figure 2-1 The SendFax Icon

2. Open the SendFax icon, by moving the mouse cursor over it and double-clicking the left mouse button.

If this is the first time you run any of the TEDfax clients, it is likely that you will not have a .faxrc file in your home directory. This is the file which contains your personal TEDfax settings and information. TEDfax will notice this and popup the GUI panel to ask if you would like to create this file. The Startup Error dialog box is shown here in Figure 2-2.

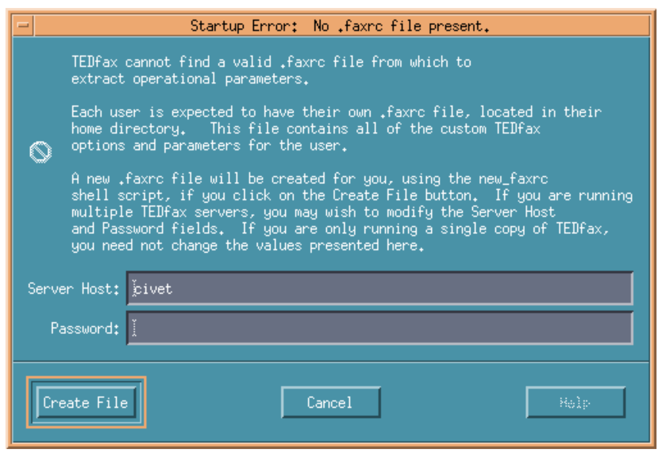


Figure 2-2 The Startup Error Diaolog Box

Enter the hostname of your fax server and password assigned to that fax server and click on the “create file” button. By default there is no password assigned to your fax server so you can just leave this field blank. At this point reselect the SendFax icon to continue with the tutorial.

After a brief wait, the Send Screen will appear, as shown here in Figure 2-3.

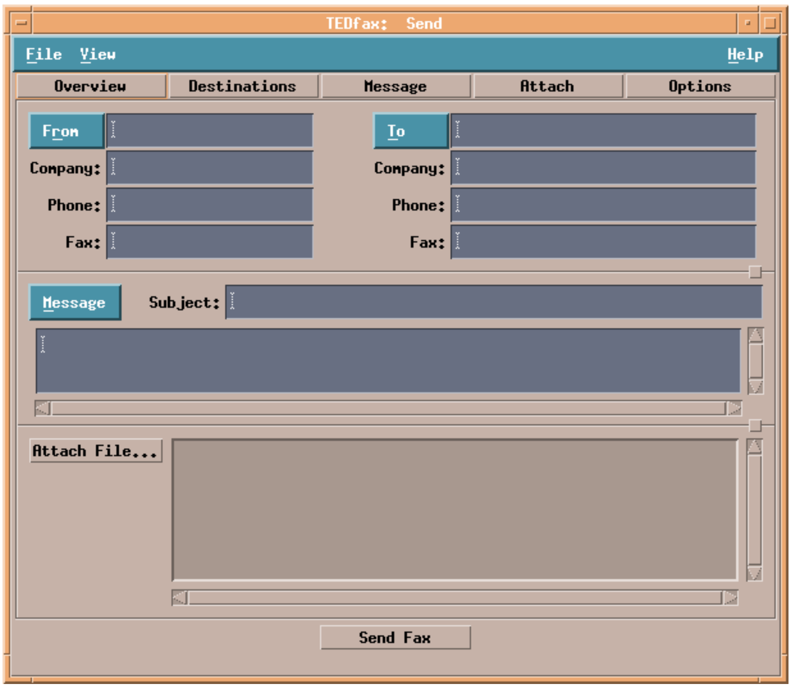


Figure 2-3 The Send Screen

The Send Screen

The Send Screen has four primary fields which are listed below:

From	Specifies the person sending the fax (typically you).
To	Specifies the person who will receive the fax.
Message	Specifies a subject and message to appear in the fax. This will usually appear on the fax’s cover page.

Attach Specifies any files you wish to send along with the fax.

Sending a fax is straightforward. You move to each field within the send screen by clicking on it with the mouse, or by using the tab key. Then you simply enter the appropriate text using the keyboard.

From Fields

If this is the first time you've used TEDfax, the From fields will probably be blank. The cursor will be blinking in the from field. The following steps guide you through using the From portion of the Send screen. When typing phone numbers, you may omit the
"-" or "()" characters (or use them); TEDfax will ignore the "-" and "()" characters between digits.

1. Type your name. Press the `<Tab>` key. This will forward the cursor to the Company field.
2. Type your company name. Press the `<Tab>` key. This will forward the cursor to the Phone field.
3. Type your phone number. Press the `<Tab>` key. This will forward the cursor to the Fax field.
4. Type the fax number.
5. Using the left mouse button, select Save As User from the From menu. The button marked From is actually a menu. Your information will now appear automatically, every time you open the Send Screen.

That's all there is to using the From portion of the Send screen. The following steps will show you how to use the To portion of the Send screen.

To Fields

In this portion of the tutorial, you'll be sending a fax to yourself so you can easily verify the accuracy of this exercise:

1. Move the mouse cursor over to the To field and press the left mouse button.
2. Type your name. Press the `<Tab>` key. This will forward the cursor to Company field.

3. Type your company name. Press the <Tab> key. This will forward the cursor to Phone field.

4. Type your phone number. Press the <Tab> key. This will forward the cursor to Fax field.

5. Type your fax number.

6. Press the <Tab> key. This will forward the cursor to the Subject field.

7. Type "This is a test fax".

8. Using the left mouse button, select Save To Phonebook from the To menu. The button marked To is actually a menu. A dialog window, as shown below in Figure 2-4, will appear.

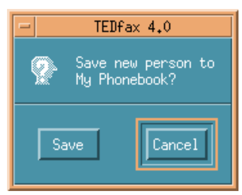


Figure 2-4 Save To Phonebook Dialog Box

9. Move the mouse cursor over the Save button and press the left mouse button.
   The information in the To portion of the Send screen will automatically be saved in your Phonebook for future use. We'll discuss the Phonebook later on in this tutorial.

10. Press the Send Fax button at the bottom of the Send screen.

    That's it, your fax is on its way.

Note – Your fax will *not* be sent until you press Send Fax. If you close the Send Screen, by pressing Done in the File menu, without first pressing Send Fax, your fax will not be sent, and the information you entered will be lost.

That's enough about sending faxes for now. The Send Screen has many features we haven't explored, but that will be done later in this Guide. You're welcome to experiment as you already possess the skills necessary to navigate through TEDfax's easy to use screens.

11. Move your cursor to the File menu, press the left mouse button and select Done.

    This will close the Send screen.

Viewing Received Faxes

TEDfax allows you to view faxes that have been received. To find out what faxes have been received by TEDfax, you just select the ViewFax icon in the TEDfax folder in the Application Manager.

1. Locate the ViewFax icon in the TEDfax folder in the Application Manager. It resembles the icon shown below in Figure 2-5.

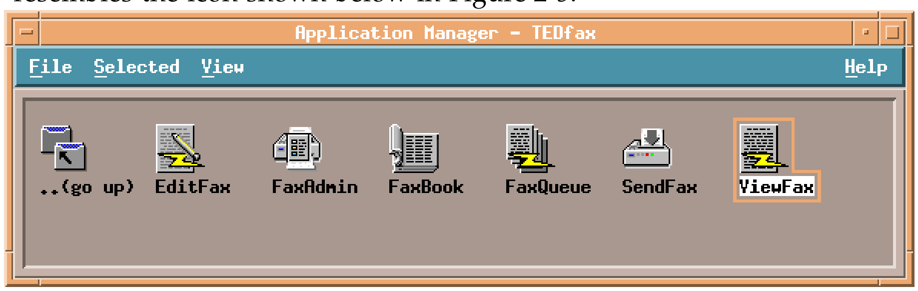


Figure 2-5 ViewFax Icon

2. Open the ViewFax icon, by moving the mouse cursor over it and double-clicking the left mouse button.

The View Screen, as shown in Figure 2-6, will be displayed. As you've just installed TEDfax, the list of faxes will probably be empty.

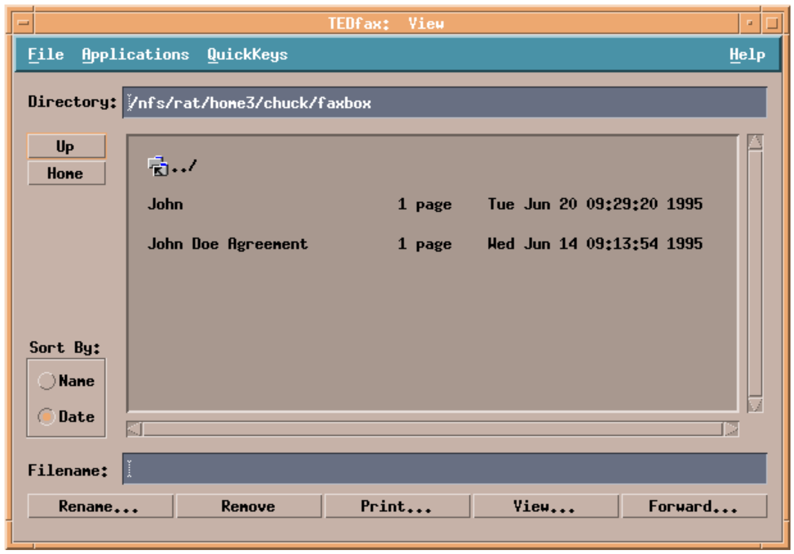


Figure 2-6 The View Screen

Although we're not going to perform in-depth examples of how to use the View screen, as we did with the Send screen, it's important that you know how to view incoming faxes. When TEDfax receives a fax, it is placed in a file located in an inbound spool directory.

Faxes received by TEDfax are stored in an inbound directory, typically `/usr/spool/TEDfax/inbound`. Each user also has a private faxbox directory, typically `$HOME/faxbox`, in which faxes which have been forwarded to that user will be stored. The View Screen shows you a list of the faxes in this directory.

The buttons at the bottom of the screen perform actions on the faxes. We'll explain them all in detail later in this Guide. To use these buttons, select one or more faxes from the list as you would when using the File Manager. Then, press the button for the desired action. For example, Print to print the faxes to a printer, or View to view the fax on your computer's screen.

Updates to the View Screen

The view screen displays the faxes in the currently selected directory from the time the view screen was last told to update or when it was first displayed. If a new fax is added to a directory which the View screen has already displayed, the faxes listed in the view screen might not include the new fax. There are several ways to force the View screen to re-scan the directory and update the list of faxes stored there:

- Use QuickKeys to re-select a directory. This will force it to be re-scanned,
- Double click on the "." entry shown in the directory listed,
- Move the mouse into the text field displaying the current directory name and hit <`return`>.

Using TEDfax Phonebooks

Often TEDfax users send faxes to the same people, or group of people. To save time, TEDfax has a built in Phonebook that will store these frequent fax recipients. After you add these people to your Phonebook, you don't have to type these fax numbers again; TEDfax will do it for you, automatically. You can also create Phonebook entries that contain lists of people. This feature allows you to send a fax to many people, just by selecting a single Phonebook name.

1. Locate the FaxBook icon in the TEDfax folder in the Application Manager. It resembles the icon shown here in Figure 2-7.

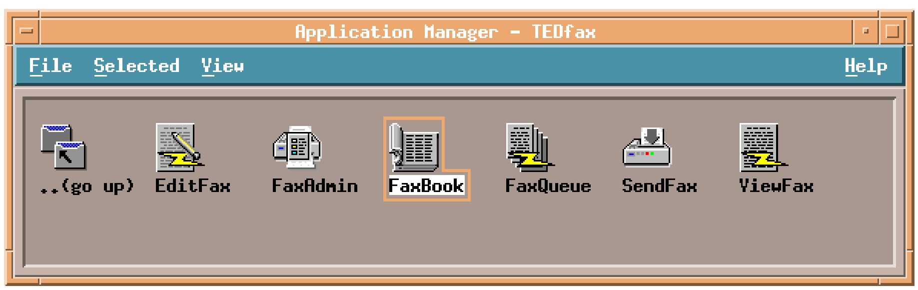


Figure 2-7 The FaxBook Icon

2. Open the FaxBook icon by moving the mouse cursor over it and double-clicking the left mouse button.

The Books screen, as shown below in Figure 2-8, will be displayed.

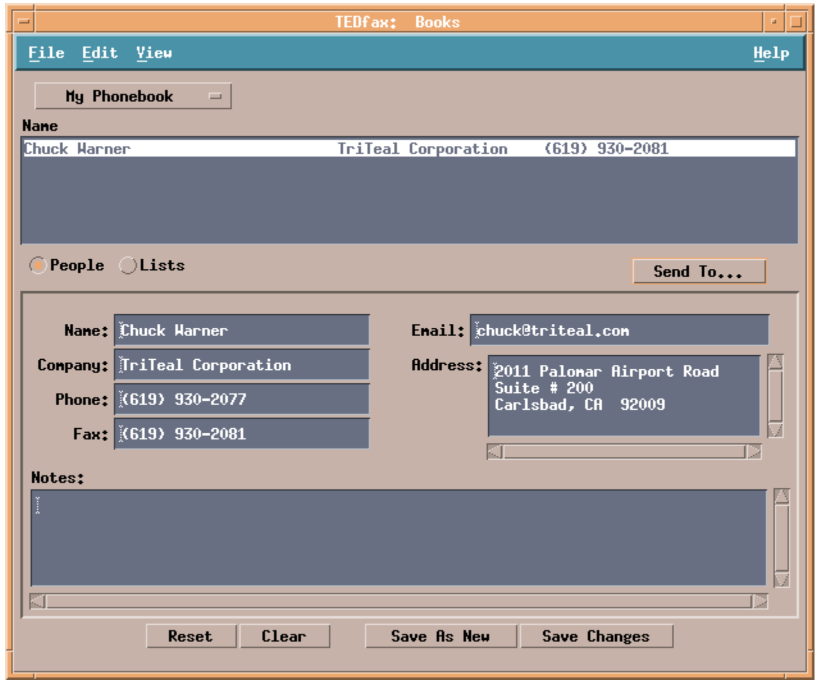


Figure 2-8 The Books Screen

The top part of the screen is a list of everyone in the phonebook. That's referred to as the Phonebook List. The name of the phonebook being displayed is at the top of the list. You may have as many phonebooks as you want, but there will just be two when you first install TEDfax: Your Private Phonebook, that only you normally have read and write access to, and the Server Phonebook, that everyone can read. Toggle between these two Phonebooks as follows:

♦ Press the Phonebook button (it is likely displayed as My Phonebook), by moving the mouse cursor over it and pressing the left mouse button.

The available Phonebooks are displayed.

The bottom part of the screen displays the information about the person who is currently selected in your Phonebook List. To view the information about someone else, you'd simply click on their names in the Phonebook List, using the left button on your mouse.

Adding People to a Phonebook

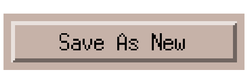
You added yourself to the Phonebook earlier in this tutorial when you were learning how to send faxes. Let's add an imaginary person (or you may add the name of a real person if you wish) to solidify your use of the Phonebook. First, decide which phonebook you want to add the person to, and select that Phonebook as follows:

1. Press the Phonebook button (likely is displayed as My Phonebook), by moving the mouse cursor over it and pressing the left mouse button.

   The available Phonebooks are displayed. Be sure you select your private Phonebook, to which you have write permission, before trying to add a new name.

2. Locate the area of the Book screen that lists the Name, Company, Phone, and Fax fields.
3. Click on the Name field.
4. Type "Gary Marton." Press the `<Tab>` key. This will forward the cursor to the Company field.
5. Type "Marton Enterprises." Press the <Tab> key. This will forward the cursor to the Phone field.
6. Type "(555) 555-5555." Press the <Tab> key. This will forward the cursor to the Fax field.
7. Type "(555) 555-5555."

   You can continue tabbing your way through the fields to add the information you feel is necessary.



8. Using the left mouse button, select Save As New at the bottom of the screen.

The person's name will now appear in the Phonebook List, and will appear every time you open the Books screen.

Removing People from a Phonebook

To remove a person from a Phonebook, just click on the person's name in the Phonebook List and select Remove Person from the Edit menu. The person will be deleted from the phonebook. In the following example, we'll remove our imaginary person, Gary Marton, from the Phonebook. Proceed as follows:

1. Move the mouse cursor over Gary Marton and press the left mouse button.
2. Select Remove Person from the Edit menu.

Gary Marton is now deleted from the Phonebook.

Adding Lists to a Phonebook

TEDfax also allows you to create lists of people. For example, you may create a list of all your branch offices, so that you can send a fax to all of them with the click of a single button. To view the lists in a phonebook, press the Lists toggle, located just below the Phonebook List.

Move the mouse cursor over Lists and press the left mouse button.

The Phonebook List will now display all the lists contained in the selected phonebook.

The bottom of the screen shows information about the list currently selected in the Phonebook List. Most likely, you don't have one yet. This section will present general procedures. Phonebook Lists will be explained in *Chapter 5, Using TEDfax Phonebooks*. The Books Screen which with the "Lists" toggle button selected is shown below in Figure 2-9.

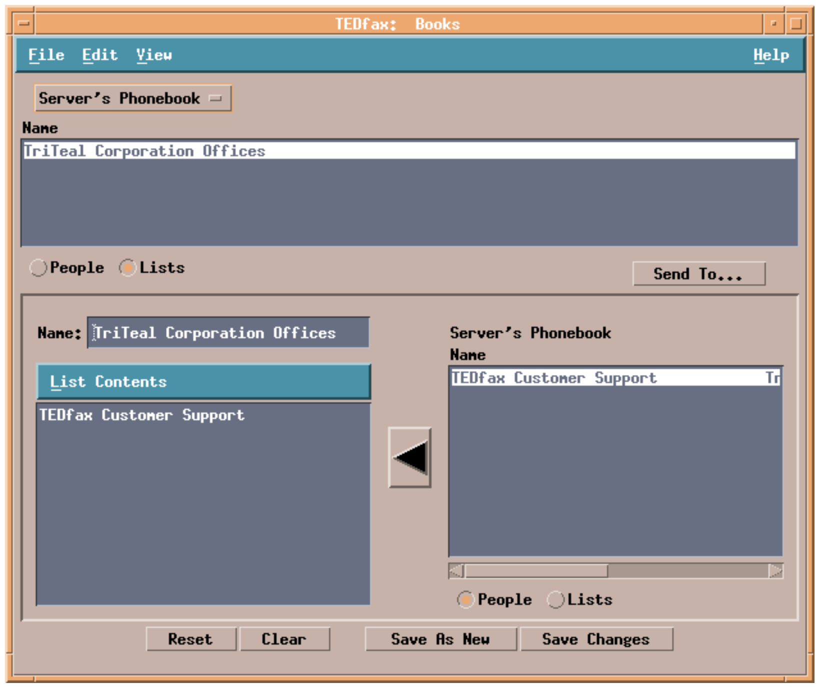
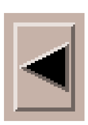


Figure 2-9 The Books Screen Lists Toggle



On the left is the Name of the current list, and a list showing everyone who's within the current list. To the right is a list of all the people in the current phonebook. To add a person to a list, click on the person's name in the Name list, and press the Arrow button t move that person into the List Contents. You can add both people and other lists to your list. You can only add things from the currently selected phonebook (not from other phonebooks).

The Save As New button is used to save your addition to the Phonebook List.

Sending Faxes to People and Lists

To show you how to send faxes to people and lists, a general discussion is presented in this section. Phonebook Lists will be explained in detail later in this Guide.

To send a fax to a person or list of people, just select the person's name from the Phonebook List and press Send To. It resembles the button shown.

The Send Screen will appear and the person or list will be added to the To region. You can add as many people as you want this way. The To region of the Send Screen becomes a list, and all the people you've added will appear within that list. When you press the Send Fax, the fax will be sent to all of them.

You can more easily add groups of people by clicking the Destinations button in the Send Screen. The Destinations button is shown here.

A miniature version of a Phonebook screen will appear, with an arrow button to allow you to add people and lists to your list of destinations. We'll explain this in more detail later. To return to your original view of the Send Screen, press the Overview button.

To close the Books Screen, select the Done button from the File menu.

Sending Faxes 3

The Send Screen allows you to create and send faxes. You can send a fax to one person or to many people, at one time. A fax can consist of a typed message as well as attached files.

To send a fax, you'll simply click on the SendFax icon, type in the recipient's information, and click the SendFax icon.

1. Locate the SendFax icon in the TEDfax folder in the Application Manager. It resembles the icon shown in below in Figure 3-1.

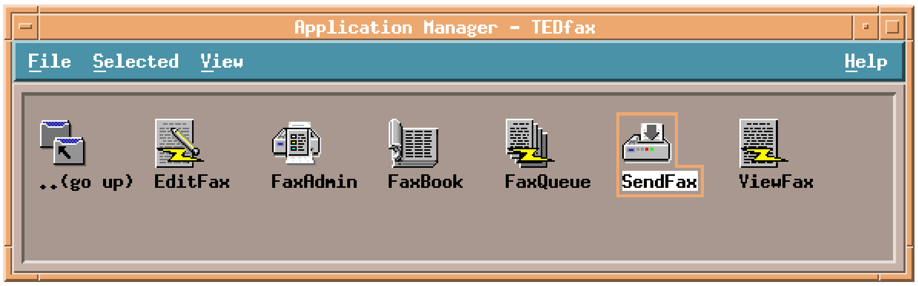


Figure 3-1 The SendFax Icon

2. Open the SendFax icon, by moving the mouse cursor over it and double-clicking the left mouse button.

Send Screen Structure

The Send Screen is made up of several components which are shown below in Figure 3-2.

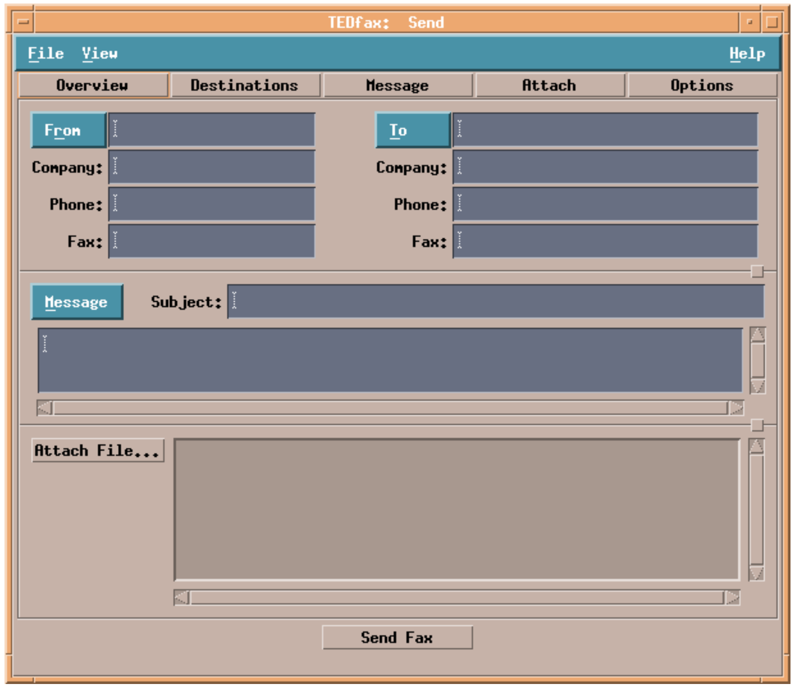


Figure 3-2 The Send Screen

At the top of the screen is a standard Motif menubar, containing the File, View, and Help menus.

Below that are the View Buttons, marked Overview, Destinations, Message, Attach, and Options. They display different views of the same information; in other words, the views are comparable to different windows looking at the same information. The views have no effect on the fax data. Go ahead and click on the different View buttons if you wish, but press the Overview button to return to the default screen.

Below the view buttons is the main input area (the view input area varies according to the view you have selected). This is where you specify information about the fax.

When you are done composing your fax, press the Send Fax button to send it on it's way.

Note – *Your fax will not be sent until you press* Send Fax. If you close the Send Screen, by pressing Done in the File menu, without first pressing Send Fax, your fax will not be sent, and the information you entered will be lost.

The Input Area

When you first open the Send Screen, the input area will display four distinct regions:

From	Specifies the person sending the fax (typically you).
To	Specifies the person who will receive the fax.
Message	Specifies a subject and message to appear in the fax. This will usually appear on the fax's cover page.
Attach File...	Specifies any files you wish to send along with the fax.

Sending a fax is straightforward. You move to each field within the send screen by clicking on it with the mouse, or by using the tab key. Then you simply enter the appropriate text using the keyboard and/or use the appropriate menus.

Send Screen Views

The default screen shown is the Overview view of the Send Screen. While it's the view you will use most commonly, the Send Screen has several ways to display your fax's information. You can select between these different views (Overview, Destinations, Message, Attach, and Options) by selecting the desired View Button, or from the View menu in the menubar. The two methods do exactly the same thing.

Each of the views changes the input area to display different information about your fax, as listed below:

Overview	The "default" view that you will use most often. This was the view you explored in the tutorial, containing the From, To, Message, and Attach regions.

Destinations	Displays a list of the people who will receive the fax. This view is simply a larger version of the To region.
Message	Displays the subject and message for the fax. This view is simply a larger version of the Message region.
Attach	Displays a list of the files to be sent with the fax. This view is just a larger version of the Attach region.
Options	Displays advanced options for the fax.

The Overview View

The Overview view is the what you've used so far in this guide. This view is made up of four regions: From, To, Message, and Attach.

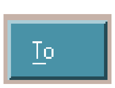
The "From" Region

The From region displays who the fax is from. This information usually will appear on the coverpage of the fax. Typically, the fax is from you, so your name and information should appear in the Name, Company, Phone and Fax fields.

By holding down the left mouse button on the From menu, you'll see the functions listed below.

Revert To User	Changes the information displayed in the From region to whatever values you've previously saved using Save As User.
Save As User	Saves what you've entered in the From region as your "default" values. These are the values that automatically appear whenever you open the Send Screen.
Clear All	Clears the fields in the From region. By selecting Clear All, each field will be blank.

The "To" Region



The To region displays who the fax should be sent to. When you first open the screen, this region will display four fields, just like the From region. You may enter the information of the recipient of the fax in this region. This is referred to as the single-destination mode.

It is also possible to specify the destination of a fax by using the Send To button of the Books Screen. From the Books Screen, you can send to one or many recipients in a list. This is referred to as the multiple-destinations mode. Refer to *Chapter 5, Using TEDfax Phonebooks*, for detailed information.

By holding down the left mouse button on the To menu, you'll see the functions listed below.

The To menu contains the following functions when it's in "single-destination" mode:

Find By Name	Attempts to find a name in your Phonebooks that matches the name you've entered in the name field, and enters that person's information into the To region. You can even specify a partial name, or even a single letter. Press this button repeatedly to find other possible matches.
Save To Phonebook	Saves the person and information you've entered into your Phonebook. A new Phonebook entry is created.
Clear All	Clears the fields in the To region.

When in "multiple-destinations" mode (adding destinations using the Send To button of the Books Screen) the To menu has these functions:

Clear Selected	Removes any selected person(s) from the list of destinations. To select or unselect a person, click on the person's name.
Clear All	Removes everyone from the list of destinations.

The "Message" Region

The Message region contains a subject and message to be printed on the fax. Usually, this information is printed on the coverpage of the fax, but you can change its printing location using the Options view.

The message can be as long or as short as you desire. If it's too long to fit on one page, TEDfax will divide it into several pages. The Message area is always 80 characters wide, so that standard UNIX text files fit comfortably.

The message can originate from a file "dragged" from the File Manager onto the message text area or a selected text buffer "dragged" from another application.

By holding down the left mouse button on the Message menu, you'll see the functions listed below:

Load Text	Loads any standard text file into the Message textfield. A file browser pops up to allow you to choose a file to load.
Save Text	Saves the message you've entered as a text file. A file browser pops up to allow you to enter the desired name of the file.
Clear Message	Clears the Message text field.

The "Attach" Region

The attach region displays any files you've attached to your fax. The files will appear as icons in the Attach window.

TEDfax recognizes FrameMaker, Sun Raster, text, TIFF and PostScript files (and can be configured to recognize most other file types). Ask your TEDfax administrator to install other file types, if necessary. A copy of each attached file will be "rendered" into fax format (TEDfax TIFF) and sent along with your fax. The original files themselves will not be changed in any way.

These files may be attached via "drag & drop" from the File Manager onto the attached file's scrolled window.

The Attach menu contains the following features:

Attach File...	Attaches a file. A file browser pops up to allow you to choose the files to attach. To select one or more files, select files as you would using the File Manager and either drag them to the attachment area or select the "Attach File" button.
Clear Selected	Removes any selected files from the list of attached files.
Clear All	Clears all attached files.
Move Selected Left	Moves the selected file left, so that it's attached before the files to its right.
Move Selected Right	Moves the selected file right, so that it's attached after the files to its left.

The Destinations View

The Destinations view displays the list of people you wish to receive your fax and allows you to add people, or lists of people, from your phonebooks. When building a large list of people, it tends to be easier to use than the Overview view. The Destinations button is shown here.

To use the Destinations view, press the Destinations button at the top of the screen, or select Destinations from the View menu.

The Destinations view is shown below in Figure 3-3.

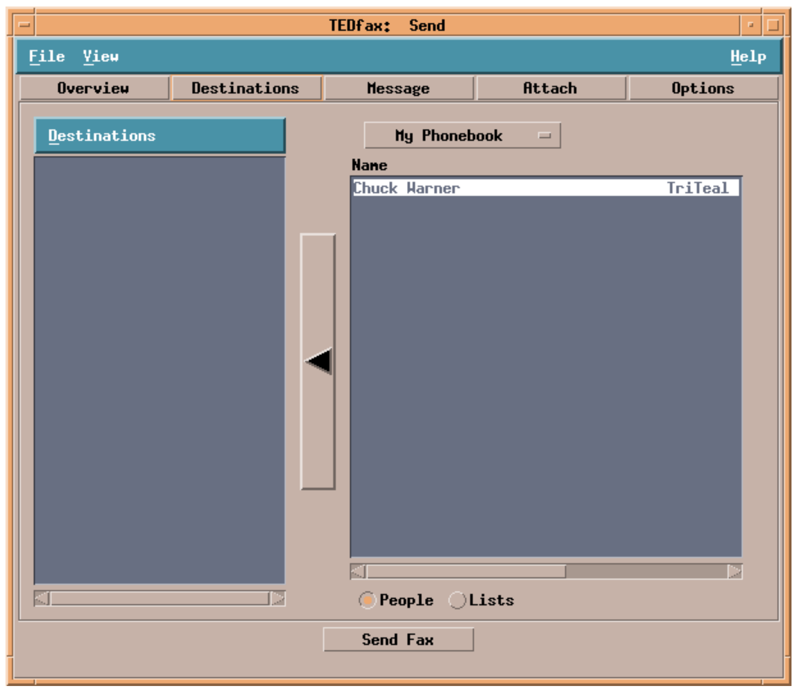


Figure 3-3 The Destinations View Screen

The Message View

The Message view displays the subject line and message to be printed on a fax. This view is identical to the Message region of the Overview view, it's just a little bigger. Sometimes it's easier to use.

To use the Message view, press the Message button at the top of the screen, or select Message from the View menu. The message can originate from a file “dragged” from the File Manager onto the message text area or a selected text buffer “dragged” from another application.

The Attach View

The Attach view displays the list of files you’ve attached to your fax. It displays the same information as the Attach region of the Overview view, but in a slightly different way. It tends to be easier to use than the Overview view when working with large lists of files.

To use the Attach view, press the Attach button at the top of the screen, or select Attach from the View menu. The Attach view is shown below in Figure 3-4.

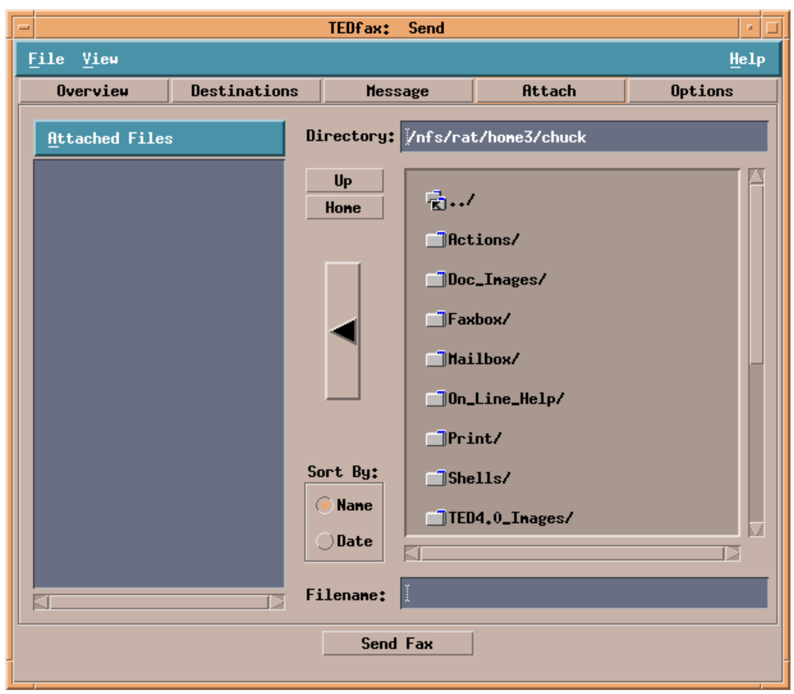


Figure 3-4 The Attach View Screen

On the left side of the screen is the list of attached files. On the right is a file browser. To add a file to the list of attached files, select it's name from the file browser, and press the Arrow button or you can drag them to the list of attached files.

Clear Selected	Removes any selected person(s) from the list of destinations. To select or unselect a person, click on the person's name.
Clear All	Removes everyone from the list of destinations.

Files can be attached via "drag & drop" from the File Manager onto the attached file's scrolled window.

The Options View

The Options view contains TEDfax's advanced options for sending faxes. The Options Screen is shown below in Figure 3-5.

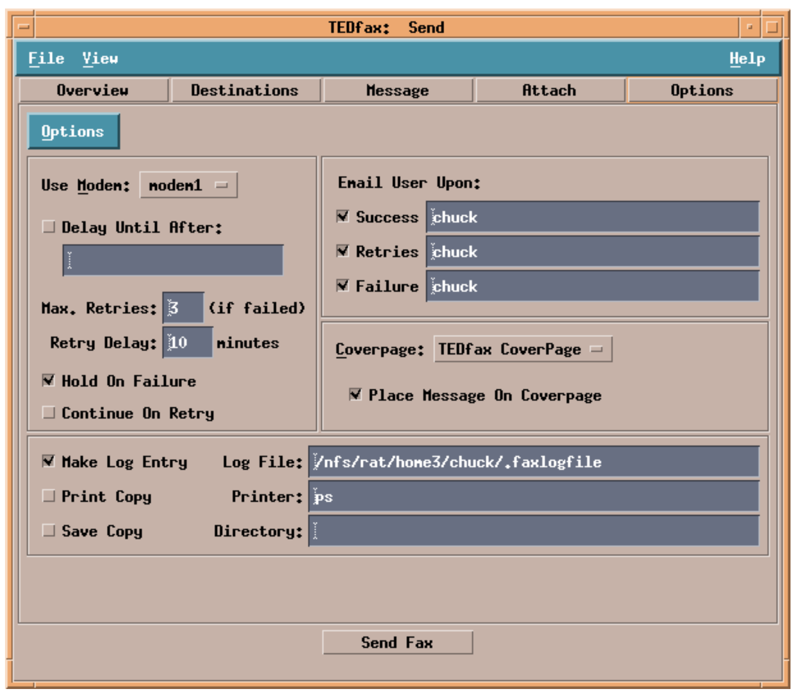


Figure 3-5 The Options View Screen

The values in this screen are reset to their default values every time you open the Send Screen. Use the Options menu (between the Overview button and the "Use Modem:" field) to change these default values, and to return to them.

Revert To Saved	Changes the values in the Options view to their default values.
Save As Default	Saves the current values as the "default" values. In other words, the values that automatically appear whenever you open the Send Screen.

Keep in mind that Save As Default always saves the value of every option in the Options view. Make sure that all options on the screen are exactly how you want them.

Choosing Which Modem to Use

You can specify which modem you want to use by selecting it from the Use Modem: menu. TEDfax allows each modem to have a name of your choosing: the names of your modems were picked by the person in your company who installed TEDfax.

If you want the selected modem to be used as the default modem; that is, the modem that will be used for all faxes you send unless you specifically choose another, you must save your change as the default value using Save As Default from the Options menu. If you don't, your change will only be in effect until you close the Send Screen.

Specifying Retry Counts

When TEDfax can't deliver a fax, because the line is busy, the other fax machine wasn't working correctly, or for other reasons, it will try again. How many times it will continue to try is called the Retry Count.

To change the retry count, type the desired number into the Max. Retries field.

To change the amount of time TEDfax will wait before trying again, type the desired number (in minutes) into the Retry Delay field.

Remember, if you wish your changes to take effect for all faxes you send, you must save your changes as the default values using Save As Default from the Options menu. If you don't, your changes will only be in effect until you close the Send Screen.

The Hold on Failure “checkbox” will keep a fax in the queue even if the send fails, after reaching the maximum retry count.

Setting Email Notifications

TEDfax can, at your option, send you Email when a fax is successfully transmitted, or when a problem has prevented the fax from being sent. These are very useful features, and are strongly recommended by TriTeal.

The three notification options are marked Success, Retries, and Failure. They are enabled by pressing the checkbox next to them so that it appears “checked.” Usually, a “checked” box will appear pressed and display a check mark over the box.

When you turn on one of these features, use the textfield to the right of the option to specify an Email address. Usually, you should put your own address. An example of an Email address is “`smith@mycompany.com`”.

Success	Send Email to the specified address when a fax is successfully transmitted.
Retries	Send Email to the specified address when a fax transmission has failed, but TEDfax will try again.
Failure	Send Email to the specified address when a fax transmission has failed, and TEDfax will *not* try again, because the Retry Count has been “used up.”

Note – Note that all email sent by TEDfax is sent via the shell script `/usr/dt/fax/bin/TEDfax_sendmail`. All notification is sent via the shell script `/usr/dt/fax/bin/TEDfax_notify`. Fax administrators may change the behavior to success, notify, and retry by editing these shell scripts.

If you wish for your changes to take effect for all faxes you send, you must save your changes as the default values using Save As Default from the Options menu. If you don’t, your changes will only be in effect until you close the Send Screen.

Documenting A Fax Transmission

Your company may desire, or even require, some documentation of faxes that are sent, and when they are sent. TEDfax provides three "levels" of documentation. You may use all, some, or none.

To enable each option, click in the checkbox next to it so that the box appears "checked." Use the textfields to the right to specify the additional information each option requires.

Make Log Entry	TEDfax will make a brief note in a special text file called a log file, documenting when the fax was sent, who it was sent to, and who sent it. Use the textfield to specify the full name and path of the file to use. If it does not exist, it will be created.
Print Copy	TEDfax will print a copy of the fax to the printer you specify in the textfield. (To automatically print *all* incoming faxes, run TEDfax as user `root` (or fax administrator), select this option, and save as default.)
Save Copy	TEDfax will save a full copy of the fax to the directory you specify in the textfield. Because faxes are large, this takes quite a bit of disk space. It is, however, helpful for some companies.

If you wish for your changes to take effect for all faxes you send, you must save your changes as the default values using Save As Default from the Options menu. If you don't, your changes will only be in effect until you close the Send Screen.

Choosing a Coverpage

TEDfax allows you to create your own coverpages, and to use different coverpages with different faxes.

Each coverpage is a PostScript file with special "flags" that TEDfax knows to replace with, for example, the name of the person sending the fax, or the message that's supposed to appear.

The Place Message On Coverpage checkbox controls (you guessed it) whether the message you typed for the fax appears on the coverpage, or not. If this box is unchecked, the message will always appear on a separate page by itself, just after the coverpage.

Each coverpage is given a name of your choosing. To select a coverpage to send with your fax, select the name of the coverpage from the Coverpage menu.

If you wish to use a certain coverpage as the default coverpage for all faxes you send, you must save your change as the default value using Save As Default from the Options menu. If you don't, your change will only be in effect until you close the Send Screen.

Creating Custom Coverpages for Your Company

To automatically generate a coverpage with your company's name on it, select Create Coverpage from the File menu of the Send Screen. The Create Coverpage window is shown here in Figure 3-6.

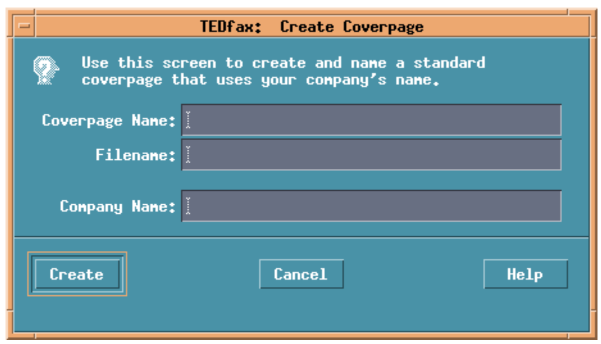


Figure 3-6 The CreateCoverpage Window

In the dialog that pops up, you'll need to fill in the following information.

Coverpage Name	The name you want to give this coverpage, that will appear in the Coverpage menu.
Filename	The desired full path and filename for the coverpage. This is where the coverpage file will be created (for example, `/var/dt/fax/data/mycover.ps`).
Company Name	The name of your company, as you want it to appear on the coverpage. You don't actually *have* to put your company's name; you could put a title like "From the desk of Bob Smith" on your coverpages instead.

Press Create to actually create the new coverpage file and add it to your menu of coverpages. Press Cancel to close the screen without creating a coverpage.

TEDfax Coverpages are stored as PostScript files which may contain macro strings. The PostScript file thus acts as a template coverpage. The macros are substituted as each fax coverpage is to be generated, the PostScript is rendered into a fax ready image, and that image is sent out. *Chapter 8, Advanced Topics* contains information on how to create such custom postscript template coverpages on your own. However, to simplify matters, TEDfax has a simple means of modifying its default coverpage to contain your company name. This allows most users to avoid the task of creating a coverpage by hand.

Installing Coverpages from Other Applications

You can use other applications to create your own coverpage files. TEDfax coverpages are PostScript files that contain macro strings. TEDfax knows to look for these strings and replace them with the relevant information.

To install these coverpages, once they're created, into your Coverpages menu, select Customize Coverpages from the File menu of the Send Screen. The Customizer window is shown below in Figure 3-7.

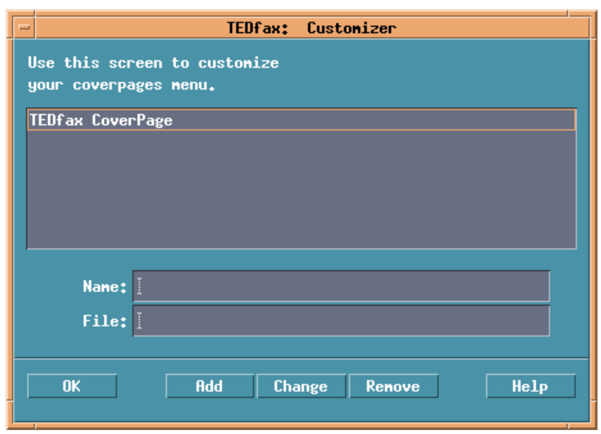


Figure 3-7 The Customize Coverpage Window

The list in the center of the screen is your current list of coverpages. To change an entry, click on it in the list, make your modifications in the textfields below, and press Change. To delete an entry, click on it, and press Remove. To add a new entry, enter the information into the textfields, and press Add.

To add a coverpage created from another application, just type the name of the coverpage, and its path and filename, and press Add.

Previewing a Fax Before You Send It

Frequently, it is useful to have a look at a fax before you press Send Fax, just to make sure what you are sending is what you think you're sending. This is referred to as *previewing* a fax.

To preview a fax, select Preview from the File menu.

If you haven't yet specified enough information about your fax for TEDfax to determine how it will look, you might get an error message telling you what else is required. Typically, the View/Edit Screen will pop up, with an image of your fax.

We'll see how the Editor works later. For now, you should just know the basics.

- The Arrow buttons at the bottom let you change which page you're viewing,
- The View menu lets you look at the fax in different ways, and
- The Done button, in the File menu, closes the screen.

Since you're looking at a read-only copy of your fax, you won't be able to make any changes to it using the editor. If you make changes to the fax using the Send Screen, for example, changing the attached files, you'll have to close the Editor screen and press Preview again to look at your changes.

Select Done from the File menu to close the Editor Screen.

Printing a Fax

Printing a copy of your fax is straightforward. Just select Print from the File menu. Enter the name of the printer, if necessary or you may drag a "received" fax to the printer icon.

Sending the Fax, An Advanced Explanation

At this point, you already know how to send a fax. This section describes what TEDfax does after you press the Send button. You don't need to read this material to use TEDfax, but it is helpful for administrators and advanced users.

First, TEDfax attempts to render the fax and any files attached to the fax, into fax format (TEDfax TIFF). The resulting fax "picture" is then sent to the TEDfax fax server, where it is placed in a queue.

Each modem TEDfax uses is attached to a separate process, called a faxmodem process. Each process scans its queue for faxes to be sent, and controls the modem during transmission and receipt of faxes.

If a modem has many faxes to send at the same time, or has to send the same fax to an entire list of people, it obviously can't call them all at once, so each faxmodem process handles each fax one at a time. Sometimes, a group of modems will use the same queue. In this case, they can "team up" by sending faxes to different people at the same time.

This means that a fax might not be sent as soon as you press Send Fax. You might have to wait for the faxmodem to finish sending other faxes first. If you've set a delay time for the fax, using the Send Screen's advanced options, be aware that the time you enter is the time the fax will be placed into the queue. It may not be sent at that exact time, if other faxes need to be sent first.

If it's taking too long to send a fax, because your company sends lots of faxes, you should connect more faxmodems to your network to speed things up.

Viewing Faxes 4

The View Screen allows you to look at and manipulate received faxes. You'll find this to be a powerful method of reading faxes.

To view a fax, you'll simply double click the ViewFax icon in the TEDfax folder in the Application Manager and select the fax.

1. Locate the ViewFax icon in the TEDfax folder in the Application Manager. It resembles the button shown below in Figure 4-1.

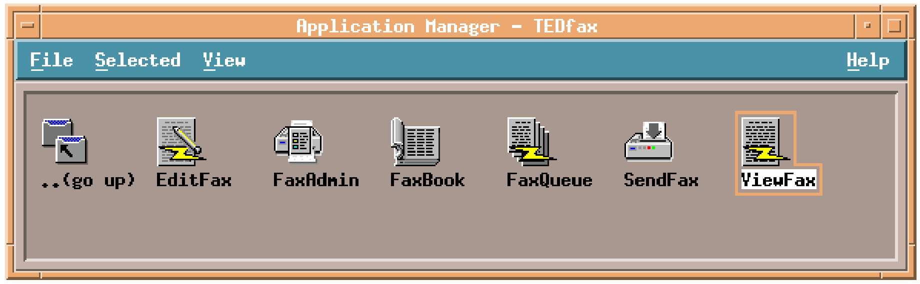


Figure 4-1 The ViewFax Icon

2. Open the ViewFax icon, by moving the mouse cursor over it and double-clicking the left mouse button.

The View Screen, shown here in Figure 4-2, is made up of several distinct areas.

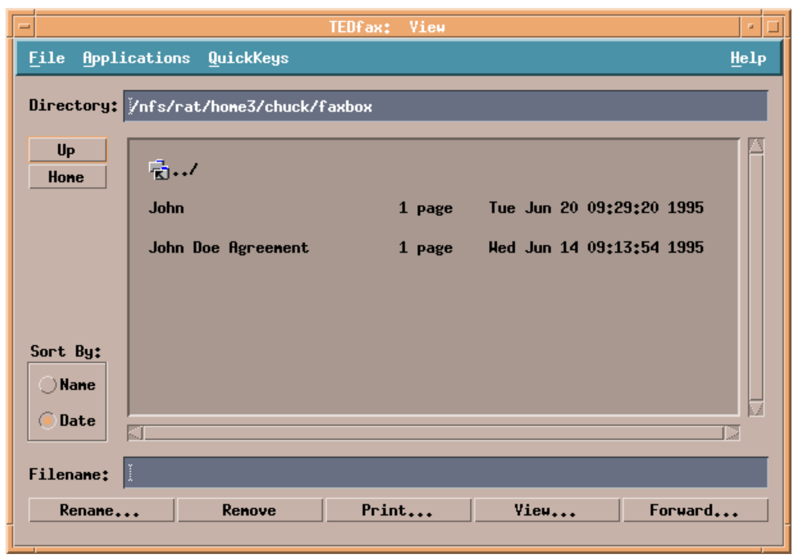


Figure 4-2 The View Screen

View Screen Structure

At the top of the screen is the standard Motif menubar, with the File, Help, and two other useful menus we'll explain later.

Below that is your list of faxes. This is actually a file browser, that automatically opens to the directory to which received faxes are sent.

At the bottom of the screen are the action buttons. To perform an action on one or more faxes, select them from the browser (as you would in the File Manager), then press one of the buttons.

How TEDfax Receives Faxes

In Chapter 3, we described what happens when TEDfax receives a fax. Before explaining the features of the View Screen, the following paragraphs will refresh you on incoming faxes. You're encouraged to re-read the section of Chapter 3 titled, Viewing Received Faxes before continuing.

There are two directories TEDfax uses to store your received faxes. When a fax is received from a faxmodem, it's put into the INBOUND directory, typically `/usr/spool/TEDfax/inbound`. Because fax machines don't tell TEDfax who a fax is for, all received faxes are put into this location.

The other directory is your FAXBOX directory. The FAXBOX directory is your own private mailbox, where faxes go when TEDfax knows the fax is for you. This is also where faxes are sent when other users forward them to you. Every user has their own FAXBOX directory, typically, `$HOME/faxbox`.

Managing Received Faxes

To use TEDfax most effectively, your company needs to decide how it wants to manage the receipt of faxes. Will one person be in charge of forwarding faxes, or will users look through all the faxes themselves? How do you and your fellow users want to be notified when a fax comes? Do you want to print the fax to a printer when it is received? TriTeal strongly recommends that you start by configuring TEDfax to automatically print all received faxes to a nearby printer.

Small companies, or small groups of people in large companies, may be well served by many options. Many larger organizations decide to either assign someone the task of looking at and forwarding faxes, or configure TEDfax to automatically print all received faxes to a nearby printer. Your own decision will probably be based on how many faxes you receive during the day, and how many different people usually receive them.

You also should consider using ICR Autorouting (only available on SunOS 4.1.x and Solaris 2.3 platforms) to automatically forward faxes to users. When this option is enabled, TEDfax will look on the first page of received faxes for the names of people in your company. If it finds one, it forwards the fax to that person.

Regardless of what your company decides, you almost certainly want TEDfax to send you Email or some other notification when you receive a fax. Think carefully before turning this feature off.

Being Notified When Faxes Arrive

You may select how you want to be notified when faxes are sent to you by selecting Options from the File menu of the View Screen. This opens the View Screen Options window, shown below in Figure 4-3.

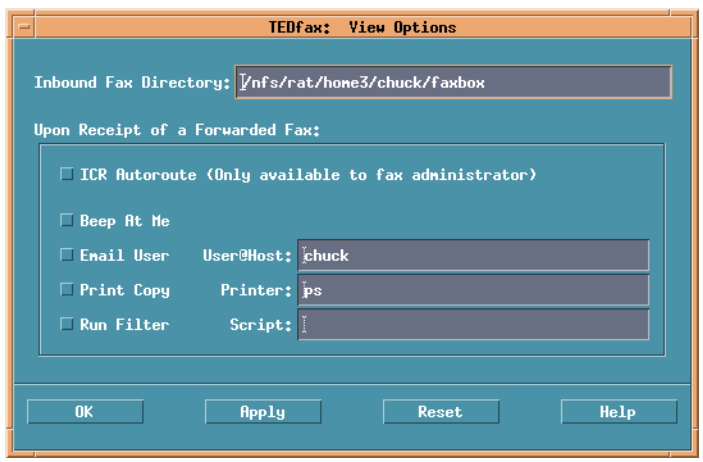


Figure 4-3 The View Screen Options Window

The topmost field, marked Inbound Fax Directory, specifies the directory where received faxes are placed. You probably shouldn't change this directory without good reason.

The other options control what happens when a fax is received. To enable an option, press the checkbox next to it so that it appears “checked,” and enter any required information into the textfields.

ICR Autoroute	Attempt autorouting when a fax is received. This option is only used by the TEDfax administrator. For regular users, ICR Autoroute is ignored.
Beep At Me	Makes a “beep” sound at the last terminal you’ve used when a fax is received, but only if you’re logged in at the time.
Email User	Sends Email to the specified user address when a fax is received.
Print Copy	Prints each received fax to the specified printer. TriTeal strongly recommends enabling this notification feature.
Run Filter	Runs the specified shellscript on each received fax. The full path of the received fax is appended.

To save your changes, you must press the Apply button. The Reset button will reset each option to its saved value. To close the screen, press OK.

Viewing INBOUND and FAXBOX

When you first open the View Screen, the contents of your private FAXBOX will be displayed.

To switch between viewing the INBOUND (`/usr/spool/TEDfax/inbound`) and FAXBOX (`$HOME/faxbox`) directories, use the QuickKeys menu. Remember, INBOUND contains faxes received from the faxmodems. FAXBOX contains faxes that other users or ICR Autorouting have forwarded to you.

The QuickKeys menu is just a list of important directories. Use it to quickly move to directories you’re interested in. Usually, this will be limited to INBOUND and FAXBOX, but you can add other directories by selecting Customize QuickKeys in the File menu.

The View Screen Action Buttons

Once you've received a fax, you most likely want to do something with it. The *action buttons* at the bottom of the screen perform useful functions. To use them, select a fax from the browser, and press the desired action button. The action buttons work as follows:

Rename	Allows you to change the filename of the fax to something more descriptive and useful, or to move the fax to some other directory.
Remove	Permanently deletes the fax.
Print	Prints the fax to a printer. You should enter the name of the desired printer into the dialog box that pops up, along with any other options you desire.
View	Displays the fax on your computer screen using the TEDfax Editor.
Forward	Forwards the fax to another TEDfax user.

Each of these buttons has an identical entry under the File menu, for your convenience. The File menu also contains an entry called New.

New	Creates a new, empty fax and opens the TEDfax Editor to allow you to edit it.

Viewing and Editing Received Faxes

To have a fax displayed on your computer's screen, select the fax from the list and press the View button. You may also just double-click on the list entry. To test this feature, select any fax; the fax below is simply an example. The Edit window is shown below in Figure 4-4.

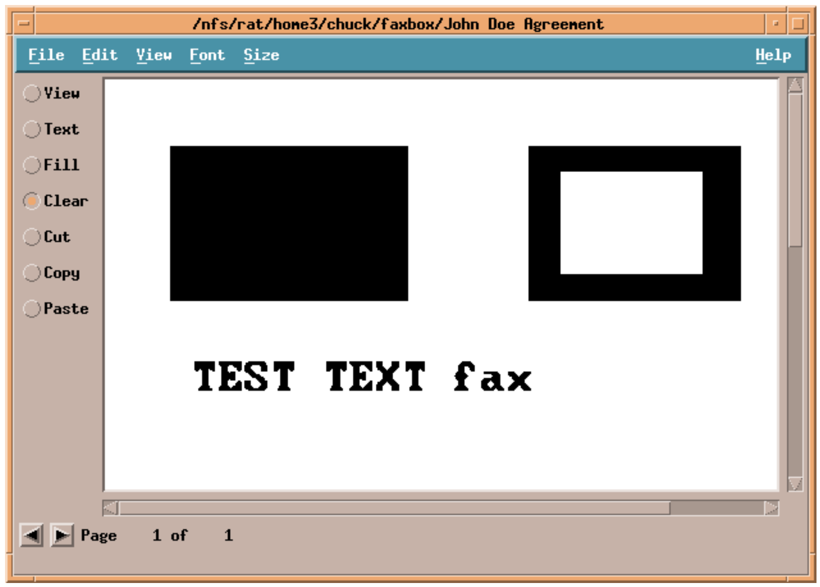


Figure 4-4 The View Screen Edit Window

Using the editor is straightforward. You can use the Arrow buttons at the bottom to view different pages, and the View menu to view the fax at different scales and orientations. As the editor is so simple to use, TriTeal encourages you to explore the editor and discover the rest of its useful features.

To close the Editor, select Done from the File menu.

Forwarding Faxes to Other Users

If you want to let another user know that a certain fax needs attention, you should *forward* the fax to that user.

Forwarding a fax places a copy of the fax in the other user's FAXBOX directory. If the user has the correct options turned on, that user will receive Email, or perhaps the user's computer will "beep."

To forward a fax to another, user, select the fax from the browser and press the Forward button which is shown to the left. The Forward Fax window will appear, as shown below Figure 4-5.

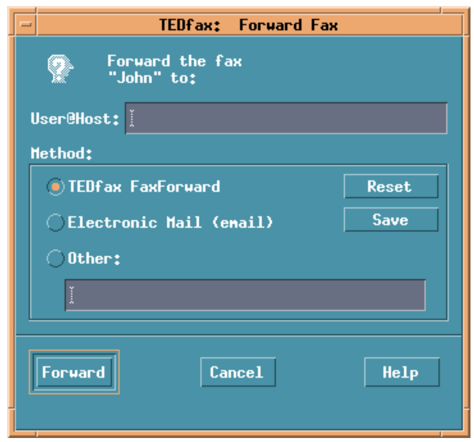


Figure 4-5 The Forward Fax Window

Type the Email address of the user you want to receive the fax. You may choose several different methods of forwarding faxes:

TEDfax Forward	The default method, described above.
Electronic Mail	The fax will be sent in Email format to the other user. Use this format for sending faxes to TEDfax users at other companies.
Other	Allows you to specify a shellscript to use to forward the fax.

When you're ready, press the Forward button to send the fax to the user you've specified. To close the screen without forwarding the fax, press the Cancel button.

Navigating the Filesystem

As mentioned before, the list in the middle of the View screen is actually a file browser. Received faxes are stored as files.

If you wish, you can navigate around your filesystem using the View Screen similar to the way you can with the File Manager. The following features help you navigate:

Up	Moves back one directory in the filesystem hierarchy, like typing "`cd ..`" in a UNIX shell. For example, pressing Up when the Directory textfield reads "`/usr/myname/dirA`" would move you to the directory "`/usr/myname`".
Home	Moves to your home directory, like typing "`cd ~`" from a UNIX shell.
Sort By	Allows you to sort the list of files by alphabetical order, or by the date the file was created.

Using Faxes with Other Applications

The Applications menu allows you to install links to other applications, so that you can view, edit, or manipulate faxes using your favorite software.

Each entry in the Applications menu is a shellscript that's been given a name of your choice. When you select the entry from the menu, TEDfax calls the script it represents, including the filename of the selected fax.

You can customize the contents of the Applications menu by selecting Customize Applications from the File menu. The Customizer window is shown here in Figure 4-6.

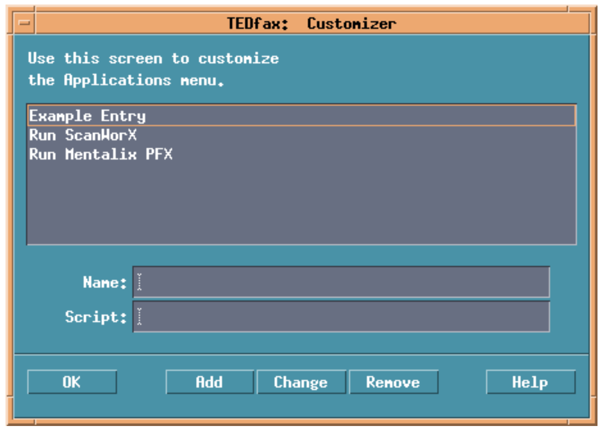


Figure 4-6 The Customizer Window

To add an entry, type the name you wish to call the entry, the shellscript it's supposed to represent, and press Add. To remove an entry, click the entry in the list, and press Remove. To change the name or script of an entry, click on the entry, make your changes to the fields below, and press Change. To close the screen, press OK.

Customizing the QuickKeys Menu

The QuickKeys menu is just a list of important directories. Use it to quickly move to directories you're interested in. You can add directories by selecting Customize QuickKeys in the File menu. The QuickKeys Customizer Screen is shown below in Figure 4-7.

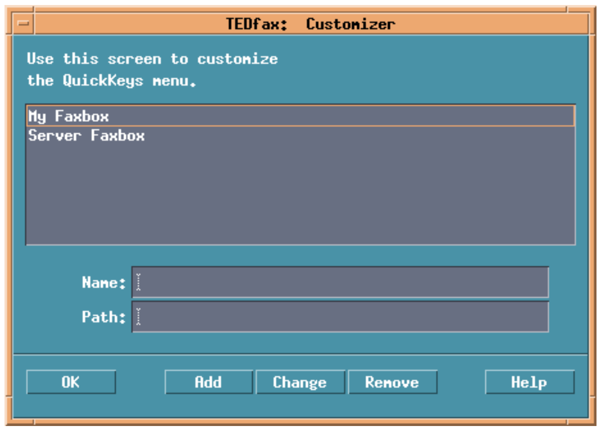


Figure 4-7 QuickKeys Customizer

To add a directory entry, type the name you wish to call the directory, the path of the directory, and press Add. To remove a directory entry, click the entry in the list, and press Remove. To change the name or path of a directory entry, click on the entry, make your changes to the fields below, and press Change. To close the screen, press OK.

Using TEDfax Phonebooks 5

The Books Screen allows you to access TEDfax's Phonebooks. Often TEDfax users send faxes to the same people, or group of people. To save you time, TEDfax has a built in Phonebook that will remember these frequent fax recipients. After you add these people to your Phonebook, you don't have to type these fax numbers again; TEDfax will automatically do it for you. You can also create Phonebook entries that contain lists of people. This feature allows you to send a fax to many people, just by selecting a single Phonebook name.

To look at the contents of your Phonebooks, double click on the FaxBook icon in the Application Manager.

1. Locate the FaxBook icon in the Application Manager. It resembles the button shown below in Figure 5-1.

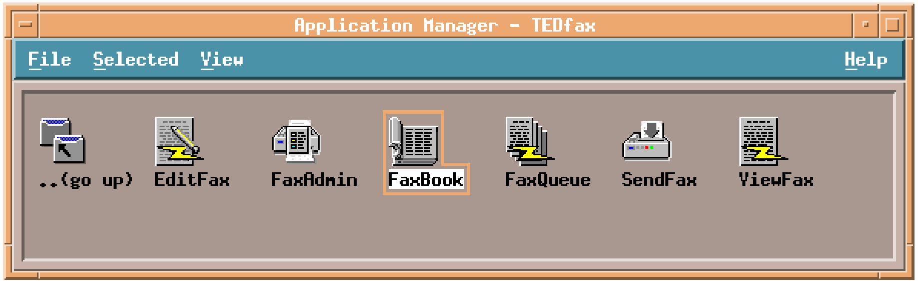


Figure 5-1 The FaxBook Icon

2. Open the FaxBook icon, by moving the mouse cursor over it and double-clicking the left mouse button.

The Books Screen, as shown below in Figure 5-2, will be displayed. As you may recall, you added yourself to the phonebook tutorial within Chapter 3 (when you were learning how to send faxes). The Phonebook list will only contain yourself in its list.

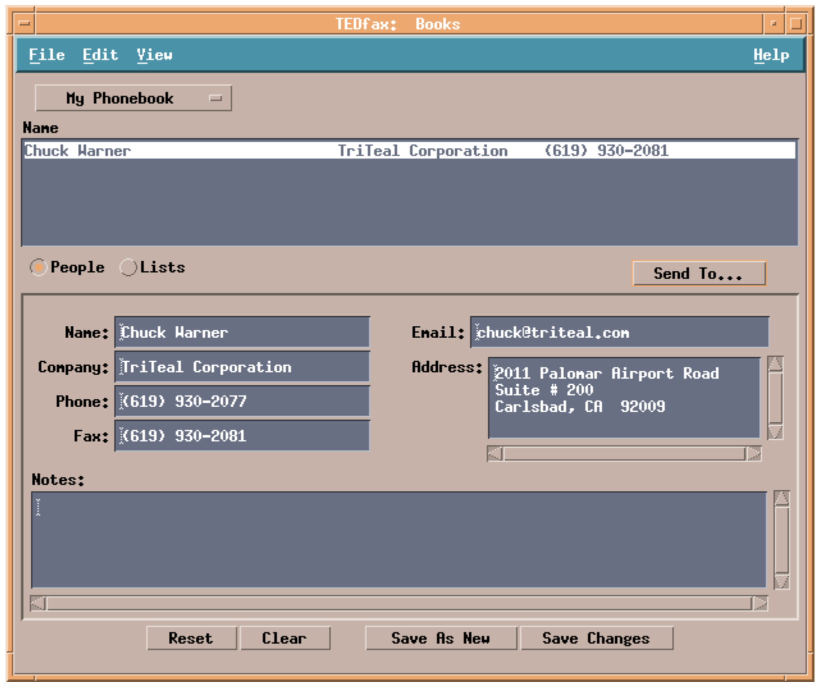


Figure 5-2 The Books Screen

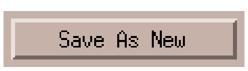
Note – Your screen will likely be different than the one shown and the following examples will be different too, but all the pieces will be present. The information presented, however, applies to all TEDfax Phonebooks.

The left-most part of the screen is a list of everyone in the phonebook; we'll call that the Phonebook List. The name of the phonebook being displayed is at the top of the list. You may have as many phonebooks as you want, but there will usually be two when you first install TEDfax: Your Private Phonebook (one to which you have read and write access) and the Server Phonebook (that everyone in your company can read). To choose which one to display, press and hold down on the name of the phonebook. A menu of all installed phonebooks will appear. Release the mouse button over the name of the phonebook you want to see.

The right-most part of the screen displays the stored information about the person who is currently selected in your Phonebook List. To view the information about someone else, just click on their names in the Phonebook List.

Adding People to a Phonebook

You added yourself to the phonebook in the tutorial within Chapter 3. So, most likely, the Phonebook list will only contain yourself in its list. If you've just installed TEDfax, there probably isn't anyone in the list, so let's add someone. First decide to which phonebook you want to add the person, and select that phonebook (as explained above.) Now, click on the Name field and type the name of the person you want to add. Hit the <Enter> key to get to the next field, or just click on the field you want, and enter the appropriate information. You can add a note or two about the person, if you wish. TEDfax doesn't use the information in the Notes field, so you can do whatever you'd like in that field.



When you're done, Press Save As New at the bottom of the screen. The person's name will now appear in the Phonebook List, and will appear every time you open the Books Screen and select this Phonebook.

If you want to change something about a person (or at least, about your information regarding them) click on the person's name in the Phonebook List, change the fields you want to change, and press Save Changes.

Keep in mind the difference between these two buttons: Save As New saves the information as an entirely new person. Save Changes just modifies the information about an existing person.

If you decide you don't want a person in your Phonebook, just click on the person's name in the Phonebook List and select Remove Person from the Edit menu. The person will be deleted from the phonebook.

Adding Lists to a Phonebook

TEDfax allows you to create lists of people. For example, you may create a list of all your branch offices, so that you can send a fax to all of them at once.

To view the lists in a phonebook, press the Lists toggle, located just below the Phonebook List.

The Phonebook List will now display all the lists contained in the selected phonebook. The right side of the screen now shows information about the list currently selected in the Phonebook List.

Note – Your screen will likely be different than the one shown on the next page, but all the pieces will be present. The information presented, however, applies to all TEDfax Phonebooks

---

The Lists Toggle is shown below in Figure 5-3.

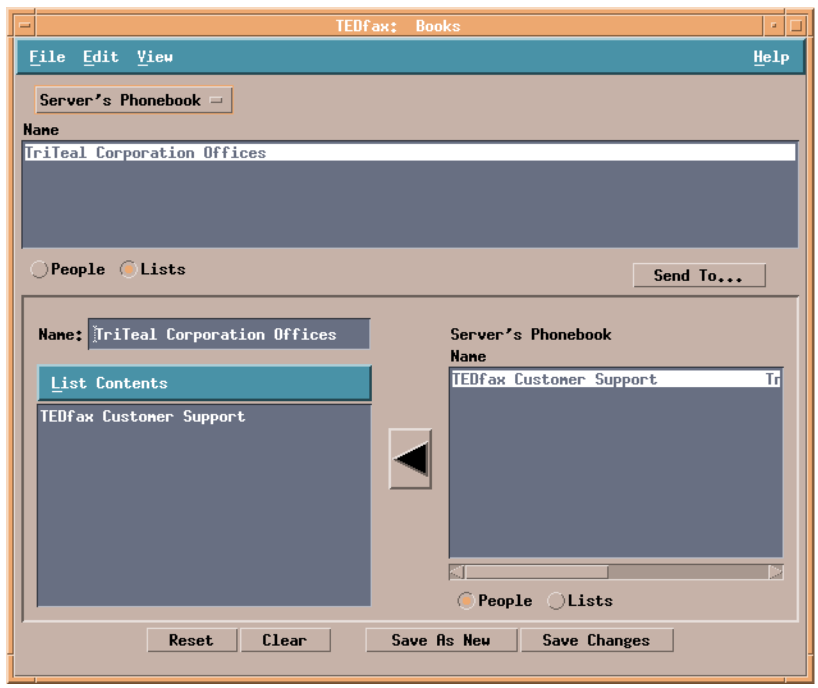


Figure 5-3 The Books Screen Lists Toggle

On the left is the Name of the current list, and a list showing everyone who is in the current list. On the right is a list of all the people in the current phonebook, called the List Contents. To add a person to a list, click on the person’s name in the right-most list, and press the Arrow button to move that person into the List Contents.

You can add both people and other lists to your list, but you can only add things from the currently selected phonebook, not from other phonebooks.

The Save As New button, the Save Changes button, and all the other buttons work exactly as previously described.

Sending Faxes to People and Lists

To send a fax to a person or list of people, just select the person’s name from the Phonebook List and press Send To. The Send Screen will appear (if it isn’t up already) and the person or list will be added to the To region.

You can add as many people as you want this manner. The To region of the Send Screen becomes a list, and all the people/lists you’ve added will appear in the list. When you press Send Fax, the fax will be sent to all of them.

You can more easily add groups of people by clicking the Destinations button in the Send Screen.

A miniature version of a Phonebook screen will appear, with an Arrow button to allow you to add people and lists to your list of Destinations. To return to your original view of the Send Screen, press the Overview button.

To close the Books Screen, select the Done button from the File menu.

Using TEDfax Queues 6

The Queues screen displays the current status of TEDfax's outbound fax queues. It can be used to monitor the status of the queues and the fax modems servicing those queues.

To look at the contents of your fax queue, double click on the Queues icon in the TEDfax folder in the Application Manager.

1. Locate the FaxQueue icon in the TEDfax folder in the Application Manager. It resembles the icon shown below in Figure 6-1.

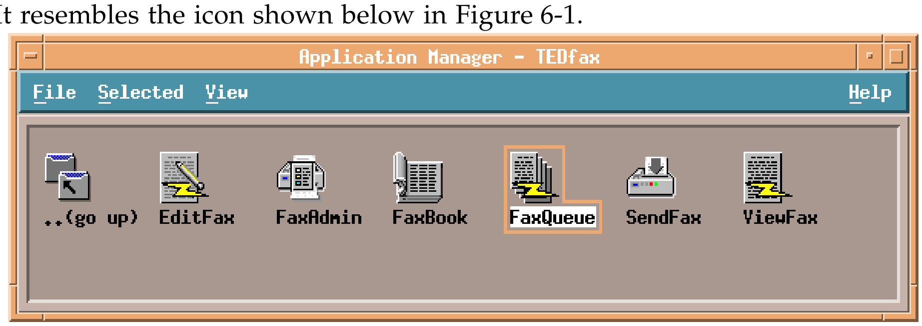


Figure 6-1 The FaxQueue Icon

2. Open the FaxQueue icon, by moving the mouse cursor over it and double-clicking the left mouse button.

The Queues Screen, as shown here, will be displayed. Depending on the amount of fax activity, the TEDfax Queue Screen may be filled with items, or it may be empty. The Queues Screen is shown below in Figure 6-2.

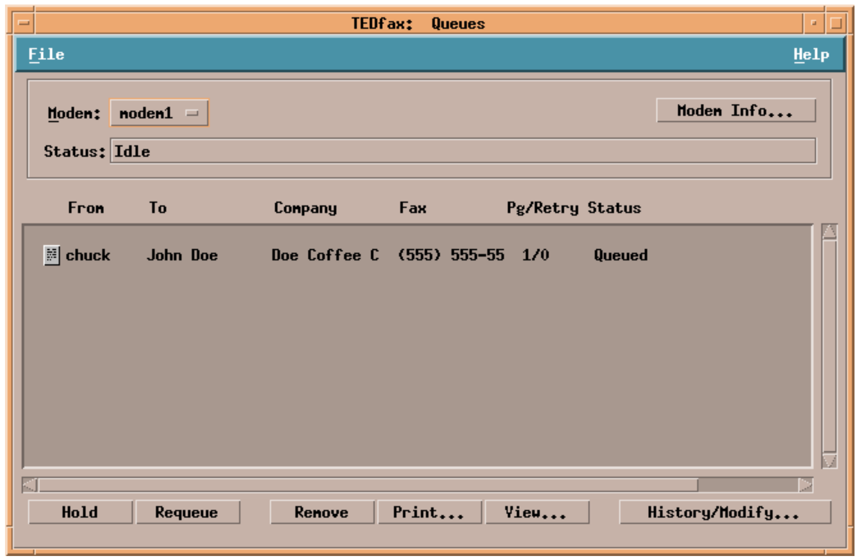


Figure 6-2 The Queues Screen

Note – Your screen will likely be different than the one shown and the following examples will be different too, but all the pieces will be present. The information presented, however, applies to all TEDfax Queues.

Using this screen, users and administrators may “hold” items in a queue, delaying their transmission, or may change the order of items in a queue. Functionality similar to that of the UNIX commands `lpq`, `lprm` and `lpc` is provided.

The Queues screen consists of a menu bar, a Modem Info region, and a browser. Combined, these items show the complete, exact, and current contents of the queue. Each modem has its own queue. As each fax is transmitted, it will disappear from the queue.

Popup menus activated with the right mouse button allow you to reorder the queue. The options are “move to top”, “move up one”, “move down one”, and “move to bottom”.

Queue Screen Menu Bar

The Queues screen menu bar contains the following functions:

File	Contains the View Log... and Done menu items.
View Log...	This file keeps a record of each successful transmission which you queued. This log is only kept if you request it through the View/Options panel.
Done	Closes the screen.
Help...	Displays help information.

Queue Screen Action Buttons

To perform an operation on a fax, select it using the mouse button (as you would in the File Manager), and press the button for the desired action located at the bottom of the screen. You will sometimes find it helpful to “Hold” the fax to temporarily prevent its transmission and removal from the queue. You must own the fax to alter its state in the queue. Only the TEDfax administrator and those users listed in the file `/var/dt/fax/data/fax_admin` may alter other people’s faxes and move faxes around in the queue. The Queues Screen has the following action buttons:

Hold	Freezes the selected fax in the queue, temporarily preventing its transmission. Only the owner of the fax or an authorized TEDfax administrator may hold a fax.
Requeue	Unfreezes the selected fax, if it was being held, allowing its transmission. Only the owner of the fax or an authorized TEDfax administrator may requeue a fax. This can also be used to re-try the sending of a fax *before* the retry time has elapsed.
Remove	Removes the fax from the queue, cancelling its transmission. Only the owner of the fax or the administrator may remove a fax from the queue.

View...	Views the selected fax. A coverpage will be rendered when View is requested in order to allow you to view the full fax. Only the owner or an authorized TEDfax administrator may view a fax.
Print...	Prints the selected fax. Only the owner or an authorized TEDfax administrator may print a fax.
History/ Modify...	Opens the Queue Edit screen, allowing the user to edit transmission options, like the destination fax number of the fax. Only the owner or an authorized TEDfax administrator may modify a fax. You must click on "save" after you make any changes to the transmission options.

The Queues Screen Modem Info Region

The Modem Info region displays the status of each modem driver. To change the modem shown, pull down the menu button in this region with the right mouse button and release the button on the name of the desired modem. The status and queue list of the newly selected modem will then be displayed.

The status of the modem is updated frequently by the modem driver and the faxserver process. If the TEDfax_modem process is functioning properly, the status field will "flicker" every thirty seconds or so.

The Modem Info... button opens the Modem Info screen, which displays the currently active options and information for the modem displayed.

The Modem Info... popup allows the fax administrator to hangup, restart or terminate the TEDfax modem process for a given modem. It also allows the administrator to redefine some of the phone number strings for the faxmodem as well as to determine if the fax modem is allowed to transmit or receive faxes.

Clicking on "Restart" will attempt to kill off the current modem daemon process running for this fax modem by sending it a "kill -TERM" signal. It will then attempt to restart a new `TEDfax_faxmodem` process. Both these actions are done by the `TEDfax_serverd` process.

Any changes made in the modem info panel (such as phone number changes and the like) must be followed by a “Save” operation. Also, once a change has been saved you must “Restart” the modem process for it to recognize the changes you have made. Thus if you wish to disable reception of faxes for a given fax modem, you would:

- Uncheck Fax Reception,
- Save new settings,
- Restart the fax modem in question.

The Queues Screen List

The browser in the center of the Queues screen displays the faxes waiting for transmission by the selected modem. When a fax is to be sent to more than one destination, it will appear as more than one entry in the queue. Thus if you send a single fax to ten people, you will see ten entries appearing in the fax queue, one for each recipient.

Select an individual fax by clicking on it with the left mouse button. Once you’ve selected a fax, you may perform any of the Queue Screen actions, via the action buttons.

Drag and Drop 7

This chapter outlines the drag and drop functionality within TEDfax.

The instructions in this chapter assume you are familiar with basic desktop skills, drag and drop functionality, and keyboard navigation. For more information, see the Chapter 1, “Basic Skills” and the Appendix A, “Keyboard Shortcuts for the Desktop” of the *TriTeal Enterprise Desktop User’s Guide*.

Drag & Drop between TEDfax and the Desktop

TEDfax has two active drop zones within the Application Manager. You may either drop a fax icon onto the EditFax icon to open up the fax for editing or you can drop any object onto the SendFax icon to include it as an attachment to a new fax.

Only faxes can be dropped onto the Edit icon. The Edit screen will not open if anything other than a fax is dropped onto this location. The EditFax icon is shown below in Figure 7-1.

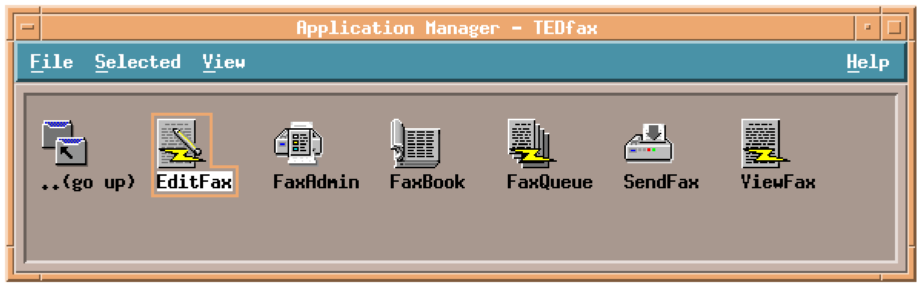


Figure 7-1 The EditFax Icon

Any object may be dropped onto the SendFax icon. When something is dropped onto the SendFax icon, the Send screen will open with the item you just dropped there in the attachments area. The SendFax icon is shown below in Figure 7-2.

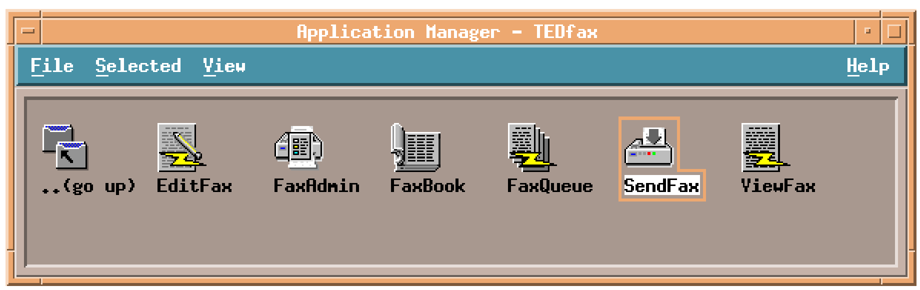


Figure 7-2 The SendFax Icon

Note – If you drop a fax onto the SendFax icon it will become an attachment in a new fax.

▼ To Drag an item from Another Application to TEDfax

From Mailer or File Manager, and possibly other applications, you can drag a fax icon to TEDfax for several different purposes.

From Mailer

1. Select the object (attachment or mail that has been saved as text) that you wish to include as an attachment in your fax.
2. Drag the object to TEDfax and drop it on the Send icon.

   The pointer changes to an icon representing the moving file.

   The Send screen will appear with the object included as an attachment in a new fax.

Note – You cannot drag mail directly to TEDfax. You must first save the mail message as text and then drag it from the location you saved it.

From File Manager

If you have a file containing a fax or object you wish to include as an attachment:

1. In an open File Manager window, navigate to a folder containing the fax you wish to edit or object you want to include as an attachment.
2. Drag the fax or other object to either the SendFax icon (to include it as an attachment) or the EditFax icon (faxes only) and drop it.

▼ To Drag an item from TEDfax to Another Application

From TEDfax, you can drag an fax icon to Mailer to mail it to someone as an attachment or to File Manager to save it in your file system or to Print Manager to print a hardcopy of the fax.

To Mailer

1. Drag the fax icon from the Queues screen and drop it on Mailer's attachment list.
2. Compose and address your mail message and send it.

Note – In order read the attached fax, the person receiving the mail message must will need an application that is capable of reading TIFF files (XV or TEDfax will read TIFF files).

To File Manager

1. In an open File Manager window, navigate to a folder where you want to save the fax in a file.
2. With both the File Manager window and TEDfax on your screen, drag the Drag fax icon from the Queues screen and drop it on the File Manager window.

   The fax is saved in a file in the folder where you dropped it.

Advanced Topics 8

This section is intended for TEDfax administrators, and other experienced users who want to explore TEDfax's more advanced features.

General Theory & Daemons

TEDfax uses a client/server model. TEDfax users run client applications to build and view faxes; these client applications connect to a server process to actually queue, transmit, and receive faxes.

Three background daemon processes are used by TEDfax:

TEDfax_serverd	The most important daemon which handles all queue and other control requests by users.
TEDfax_faxmaild	Handles fax forwarding and sends user notifications.
TEDfax_modem	Handles each modem. One `TEDfax_modem` process is present for each installed modem, and is responsible for communications between TEDfax and that modem.

Most TEDfax functions operate through shell scripts; this is an intentional feature designed to make TEDfax as customizable as possible.

How TEDfax Restarts

When a machine serving as an TEDfax server is rebooted, the scripts `/usr/dt/fax/sbin/start_faxserverd`, `/usr/dt/fax/sbin/start_faxmaild`, and `/var/dt/fax/autoroute/bin/icr_server.sun` (Solaris 1.x only) are restarted from several lines added to the host dependent boot scripts (`/etc/rc.local`, `/etc/rc`, or a file in `/etc/rc2.d`).

The first two scripts start TEDfax's daemon processes. The third is required when ICR autorouting is enabled. The `TEDfax_serverd` process, started from running `/usr/dt/fax/sbin/start_faxserverd`, also forks an `TEDfax_modem` process for each modem defined.

How TEDfax Sends Faxes

When an TEDfax user requests to send a fax, usually by pressing the Send Fax button in the Send Screen, TEDfax attempts to "render" the body of the fax using the shell script render. The resulting fax image is then transferred to the faxserver for placement in an outbound queue.

The "render" script is passed the file type, returned by the UNIX `file` command, of each attached file. It uses the file type to execute the necessary conversion utility to convert the file into a fax ready TIFF format.

The coverpage of the fax, if any, is not rendered until a modem is ready to transmit the fax. This ensures the time-stamp of the coverpage will be accurate.

A queued fax is composed of a small configuration file, and a directory containing the rendered image. The information required to render the appropriate coverpage is "split" between this file and the rendered image directory. This design allows TEDfax to minimize the disk space required to send a fax image to multiple recipients. Only one copy of the "body" of the fax is kept, saving a large amount of disk space.

The TEDfax_serverd Daemon

The `TEDfax_serverd` daemon is the heart of TEDfax. It is responsible for fax modem feedback, and queuing of faxes into the outbound spool directories. It also forks an `TEDfax_modem` process for each installed fax modem defined in the file `/var/dt/fax/data/faxdevices`. The daemon is started using the shell script: `/usr/dt/fax/sbin/start_faxserverd.`

For proper operation, the `TEDfax_serverd` process must:

- Run as root. The software uses the current UID to find the file `.faxrc` in the home directory of the current user. This file (usually `/.faxrc`) defines critical data and directories used by the software. Failure to find this file and the information stored within it will prevent TEDfax from functioning properly.
- Have write permission to `/var/dt/fax/data`, `/usr/spool/TEDfax/Any`, `/usr/spool/TEDfax/inbound`, and any other spool directories used.

The TEDfax_faxmaild Daemon

The `TEDfax_faxmaild` daemon handles the forwarding of faxes and user notifications, including the updating of TEDfax's log files. The daemon is started using the shell script:

```
/usr/dt/fax/sbin/start_faxmaild
```

This is usually started by the system boot scripts upon a system reboot. The daemon is started automatically if a user runs TEDfax when the daemon is not already running on the host. Technically, it should be started from the boot script, such as `/etc/rc` or `/etc/rc.local` on any client machine.

Note – For proper operation, the `TEDfax_faxmaild` process *must* run as root.

The daemon is used to "forward" faxes into the defined faxbox of a user. In order to write to the named directory, the daemon must be able to "become" that user.

If the daemon is not running, TEDfax will be unable to forward faxes, update the log files, or "beep" at the user; other TEDfax features will continue unhindered.

When forwarding a fax to a user, the process will `setuid` to that user to avoid security problems.

The TEDfax_modem Daemon

TEDfax modem daemons handle communication between TEDfax and each installed modem. The `TEDfax_serverd` process will fork one `TEDfax_modem` process for each modem.

The list of installed modems is defined in `/var/dt/fax/data/faxdevices`.

Note – `/var/dt/fax/data/faxdevices` *is an internal TEDfax system file and is* <*tab*> *sensitive. Do not edit this file by hand. To add modems or change modem settings, login as root or su to root, and use the FaxAdmin tool.*

The `TEDfax_modem` process opens the serial line associated with the fax modem, sets up the modem to send and receive faxes, if those options are enabled, and waits in a `select()` loop for incoming fax calls.

About every thirty seconds, the `select()` will time-out, and the process will check its defined fax queue for transmission requests. If one exists, the process will attempt to transmit it.

The `.faxrc` File

When each new user starts TEDfax, the file "`.faxrc`" and the directory "faxbox" are created in that user's home directory, if they do not already exist. The "`.faxrc`" file is created by running the shell script `new_faxrc`. This will run automatically the first time a user runs "fax."

The faxbox directory is used to store faxes received by the user.

The `.faxrc` file is used to keep each user's defaults and options. The file is updated each time the user selects "Save As Default" from an TEDfax screen, or at other times when user defaults change.

Note – The `.faxrc` file must be writable by the user for TEDfax to function.

The `.faxrc` file is composed of lines of the form key<tab>value<return> where the "value" field may in fact hold several tab-separated fields. The <tab> characters are mandatory for proper key and value recognition. Lines with unrecognized keys will be ignored.

A full list of values and their meanings is in their file:
`/usr/dt/fax/man/man1/new_faxrc.1`

Note – Editing of the `.faxrc` file by users is discouraged. Every option that might require modification can be modified from within TEDfax. Editing the file while TEDfax is running could have unintended consequences.

Administrators may modify the `new_faxrc` script to change the default values TEDfax places in the `.faxrc` files of new users.

Ownership and Permissions

The directory `/usr/dt/fax` should be owned by the user "`bin`" and be writable by "`bin`". It should have the permissions "`drwxr-xr-x`".

All files in `/usr/dt/fax` should be owned by "`bin`" except:

- `/usr/dt/fax/sbin/TEDfax_faxmaild` should be owned by root.
- `/usr/dt/fax/filters/fax_filter` should be owned by root.

The directories in /usr/dt/fax should also have the permissions "drwxr-xr-x".

/usr/spool/TEDfax/lock should have the permissions "drwxrwxrwx".

The .faxrc file present in each TEDfax user's home directory must be writable by the user at all times.

Xt Resources

The TEDfax interface is Xt-based, and uses Xt style resources. The Xt resource file should be placed in /etc/dt/app-defaults/C/Fax.

If the resource file is not found, the colors and fonts TEDfax uses may be awkward, and some screens may appear "too small" to hold their contents.

Fax.ad Resources

The file /usr/dt/fax/Fax.ad contains the resources used to define the colors, fonts, and the names of buttons you see in your pull-down menus. Changes can be made to this file to change the name of the strings.

TEDfax's Shell Scripts

Many of TEDfax's features have been implemented through shell scripts. This allows experienced UNIX users to easily customize TEDfax's behavior. The scripts are located in /usr/dt/fax/bin. The Shell Scripts are listed below.

Table 8-1

Shell Script Name	Function
archdir	Prints current host architecture.
render	Converts documents of various types into fax (TIFF) format.
TEDfax_forward	Handles fax forwarding.
TEDfax_notify	Handles user notifications.
TEDfax_sendmail	Handles sending Email on the current system
TEDfax_print	Handles the printing of faxes.

Table 8-1

TEDfax_logfilter	Handles the filtering of log files.
new_coverpage	Creates a coverpage for new users.
new_faxrc	Creates .faxrc files for new users.
faxq	Allows users to list the contents of a modem's outbound fax queue or to delete faxes owned by them from the UNIX command line. Similar to lpq/lprm.

The "`render`" Script

The "`render`" script controls rendering of different file types into fax format; namely, TIFF.

The script accepts the following arguments:

```
render <file_type> <input_file> <macro> <output_file> <host>
<port>
```

The file type is determined by running `/bin/file`. The special case of "TIFF file" is also recognized if TEDfax determines the file is already in TIFF format. ("TIFF file" is not a normal `/etc/magic` entry.)

Case statements within "`render`" handle individual file types. You may add format converters of your own; for example, if you have the program "`ptroff`" and want TEDfax to properly format nroff, troff, or ptroff formats, add the lines below to the script:

```
"[nt]roff, tbl, or eqn input text")
ptroff -t $FILE | /usr/dt/fax/bin/ps2x -out $OUTPUT
exit 0
;;
```

The "`TEDfax_forward`" Script

The "`TEDfax_forward`" script handles the forwarding of faxes.

The script accepts the following arguments:

```
TEDfax_forward <forward_type> <to_address> <filename>
```

A case statement within the script is used to branch between the different available forwarding mechanisms. The installed options are:

"TEDfax"	Runs `TEDfax_forwardfax`, which uses the `TEDfax_faxmaild` daemon to forward the fax.
"email"	Uses uuencode and `/bin/mail` to forward the fax.

Additional statements may be added to take advantage of the "Other" field in the Forward screen. For example, to add a mechanism called "x25" which uses a program called "x25-transfer" to forward files, add the lines below:

```
"x25")
x25-transfer $ADDR $INPUT
exit 0
;;
```

The "TEDfax_notify" Script

The "TEDfax_notify" script handles user notifications requested by the TEDfax_modem driver.

The script accepts the following arguments:

```
TEDfax_notify <notify_type> <to_address> <host> <port> <modem>
```

A case statement within the script is used to branch between the different available options:

"success"	Executed when a fax is successfully transmitted.
"retry"	Executed when a fax transmission fails, but will be retried.
"failure"	Executed when a fax transmission fails, and will not be retried.
"newfax"	Executed when TEDfax receives a new fax.
"feedback"	Executed when the `TEDfax_modem` process needs to send feedback to the user.
"telebit-proms"	Executed when older-version Telebit proms are detected which are not compatible with TEDfax. Sends Email to root.
"deadmodem"	Executed if the `TEDfax_modem` process has been unable to communicate with the modem for five minutes or longer.

The “TEDfax_print” Script

The “TEDfax_print” script handles the printing of faxes. The following arguments and flags are recognized:

```
TEDfax_print <filename> <printername>
[ file | Postscript]
[ -copies ncopies ]
[ -from frompage ]
[ -to topage ]
[ -manual ]
[ -lowres ]
[ -width n_inches ]
[ -height n_inches ]
```

Note that the provided implementation of this script does not take advantage of the “-manual”, “-lowres”, “-width” or “-height” flags. You may modify this script to use these options if they make sense to your printer.

This script uses a slightly modified version of “fax2ps” to convert TIFF fax files to compressed PostScript, with options added to allow the printing of page ranges. One could also use “tifftops”, but much larger files are generated.

The “TEDfax_logfilter” Script

The “TEDfax_logfilter” script is used to filter the onscreen display of log files in the Log screen.

A case statement within the script is used to branch between the different available filters. Additional filters may be added and installed into the Log screen. For example, to add a filter called “newcase”:

Add the following lines to the TEDfax_logfilter script:

```
"newcase")
awk -F<tab> '{printf "%5.5s %5.5s %8.8s %5.5s %20.20s \
%15.15s %15.15s\n", $1, $2, $4, $5, $6, $7, \
$8, $9}' \
$FILTER_INPUT >> $FILTER_OUTPUT
;;
```

Add the following line to your .faxrc file:

```
FAXFilterKey:<tab>newcase
```

The “`new_faxrc`” Script

The “`new_faxrc`” script is used to create the `.faxrc` files of new TEDfax users.

Administrators may modify the script to change the default values TEDfax places in each user’s `.faxrc` file.

Remember the `.faxrc` files of existing TEDfax users are not modified by this script.

Customizing Font and Size for Text Files

The `TEDfax_pstext` program converts ascii text to postscript as a first step to rendering an ASCII file into a fax. This program is run from `/usr/dt/fax/bin/render` in the default case (“*)”) at the end of the file.

`TEDfax_pstext` can take the following arguments:

-width <WIDTH>	Define WIDTH characters per line. This is used to determine where to ‘wrap’ a long line around. The default is 80.
-length <LENGTH>	Define the length of a page. This is used to determine where to do a page break. The default is 60 lines.
-font <FONTNAME>	The font name to use. The default is: CourierBold. Other font names may be picked from the file: `/usr/dt/fax/gsdir/Fontmap`.
-size <FONTSIZE>	The size of font to use, and the size + 0.4 to use as a ‘vertical space per line’. The default is point size 12.

In addition to these ‘command line’ parameters each user may select the font name and font size to use via an entry in their `.faxrc` file. Among the entries are:

FAXTextFont:	Courier-Bold
FAXTextSize:	12
FAXTextWidth:	80
FAXTextLength:	60

These parameters, if present in a users .faxrc file, will override the defaults when the user runs "fax" or "sendfax."

Faxing from the Command Line

The "sendfax" program allows users, and other applications, to send faxes without using the graphical interface. The table below lists the command line options which may be passed to sendfax.

Table 8-2 Command Line Options

Argument	**Description**
-n "name"	Destination Name.
-o "company"	Destination Company Name.
-p "fax#"	Destination Fax Number.
-v "phone#"	Destination Voice Number.
-f <filename>	Attach File. Currently only ASCII Text, PostScript, and TIFF files are supported from the command line interface.
-m <modem>	Use Modem - default is 'modem1'.
-b	Bannerless - Suppress generation of a coverpage.
-l "listname"	Include recipients of the named list.
-c <path>	Specifies full path (on local host) to a PostScript template file to be used as the coverpage for this fax.
-fn <name>	Use <name> for the From Name field.
-fo <organization>	Use <organization> for the From Organization field on the coverpage.
-fv <voice #>	Use <voice #> for the voice number field of the coverpage.
-fp <phone #>	Use <phone #> for the phone number field of the coverpage.
-lf <logfile>	Use <logfile> as the full path for the logfile to use when logging successful fax transmissions.

Table 8-2 Command Line Options

Argument	Description
`-ns <user@host>`	Send Email to <user@host> when a fax transmits successfully.
`-nr <user@host>`	Send Email to <user@host> when a fax has to retry (due to BUSY, NO CARRIER, etc).
`-nf <user@host>`	Send Email to <user@host> when a fax has retried the maximum number of times and has thus failed.
`-es <path>`	Specify <path> (on faxserver) of a program to execute when a fax successfully transmits. <path> will be run with argv[1] set to the full path of the faxsf file for the fax.
`-er <path>`	Specify <path> (on faxserver) of a program to run when a fax retries due to BUSY, etc.
`-ef <path>`	Specify <path> (on faxserver) of a program to run when a fax fails.
`-rt <minutes>`	Specify number of minutes to wait before fax should be retried.
`-mr <count>`	Specify number of times a fax may retry before failing.
`-s <subject>`	Specify Subject field to appear on coverpage.
`-debug`	Tells “sendfax” to print step-by-step and temporary file info of fax request.
`-ignore_tilde`	Tells sendfax to ignore processing “~” requests from standard input. Software which redirects output into sendfax should use this flag.
`-ignore_route`	Tells sendfax not to attempt to decode any possible router information from text or PostScript documents. This speeds things up.
`-is_binary`	Tells sendfax that the standard input coming into TEDfax is a binary file. Use this when pushing raster files and the like into sendfax.
`-job J<string>`	Used to pass in “job” field from LPR daemon. The <string> may contain a “name, org, phone”.

Table 8-2 Command Line Options

Argument	Description
-empty	No data file (used for sending just a coverpage).
-qt <HH:MM>	Set Queue time for this fax to HH:MM. This lets users queue faxes to be transmitted after a given HH:MM.
-email_filter	Treat As Email.
-hf	Hold on failure. Will cause fax to be marked as “held” instead of deleting it from transmit queue if “max. retries” occurs.
-cm <->	Continue on retry. If set and the fax fails to get through will re-send the coverpage and skip the pages that have been transmitted correctly.

Faxing from the Command Line Examples

Send “myfile” to Bob Smith through modem1:

```
> sendfax -n “Bob Smith” -o “TriTeal” -p “555-5555” \
-v “555-1234” -f ~mydir/myfile -m modem1
```

Send “myfile” without a coverpage to everyone in the list named “TriTeal Corporation Offices”:

```
> sendfax -b -f ~mydir/myfile -l “TriTeal Corporation Offices”
```

Send the coverpage file “coverfile.ps” to everyone in the list named “Customers” WITHOUT a fax body. This is good for a one page flyer:

```
> sendfax -empty -c ~mydir/coverpage.ps -l “Customers”
```

Remember to use quotes around arguments containing spaces. If no arguments are present, the user will be prompted for the file to be faxed and the destination’s name, company, phone number, and fax number.

Faxing from Other Applications

Documents may be faxed from within other applications by simply "printing" them to the printer "`fax`" and including the option "-J" in the string passed to lpr or including the appropriate routing information (embedded routing commands) in the document. These are both described in detail in the section titled *Faxing through UNIX lpr*.

Alternatively, many applications may be customized so that printing to the printer "`fax`" will open the TEDfax Send screen with the document to be faxed already attached. The user may then enter the destination(s) and other information for the fax, and click on "`Send Fax`".

To accomplish this integration, the print script of the calling application must be modified to recognize the "`fax`" option. The scripts for FrameMaker, Interleaf, and Island products have been included in the directory `/usr/dt/fax/utils`, along with installation instructions for these scripts.

For FrameMaker, the following lines should be added to the case statement of the `$(FMHOME)/.fminit2.0/FMlpr` script:

```
case "$1" in
[xX][pP][rR][fF][aA][xX])
TEDfax_HOME = <the path to ~fax>
$TEDfax_HOME/bin/fax -qf $2
/bin/rm -rf $2
;;
```

Finally, for non-GUI applications, you can add faxing as an output option using "`sendfax`" by simply building a `system()` or `popen()` request to send fax. In example:

```
char command[BUFSIZE];
FILE *fp;
sprintf (command, "/usr/dt/fax/bin/sendfax
-f %s -n\"%s\" -p\"%s\"", file, name, faxn);
pclose (fp);
```

Faxing through UNIX `lpr` or `lp`

An alternate method of sending a fax is to "print" the fax to the printer "`fax`". A "`-J`" option provides destination information.

For example, to send a fax to "Bob Smith" of the company "Bob Co" with a fax number of 818 555-5555, you could type:

```
% lpr -Pfax -J"Bob Smith, Bob Co, 818 555-5555" /tmp/doc
```

or

```
% lpr -Pfax -J"Bob Smith, Bob Co, 818 555-5555"
Hi Bob. Here's the fax you asked for...
^D
```

Note that there is no space between -J and the following quote. The same may be done using the SYSV lp command. Refer to the section titled, *Faxing using UNIX lp*.

Alternatively, *embedded routing commands* may be placed on the first page of the document, eliminating the need for the "`-J`" option. This works even if the document is a PostScript file. Routing commands are (case-insensitive) macro-substitutions embedded within the fax that define routing information for the fax. The same fax could be sent using routing commands as follows:

```
% lpr -Pfax
faxto_name: Bob Smith
faxto_org: Bob Co
faxto_phone: 818 555-5555
faxbegin:
^L (CONTROL L)
Hi Bob. Here's the fax you asked for...
^D
```

Note – For standard text to PostScript conversion, the `^L` is converted to a page break. If you're using a text editor, you should replace the `^L` with whatever is necessary to skip to the next page.

About the UNIX `lpr` Link

The ability for users to send faxes through "`lpr`" is accomplished by installing a "dummy printer" which acts as an input filter into TEDfax.

The default installation of the software installs a dummy printer named "`fax`" in the fax server's `/etc/printcap` file and creates the spool directory `/var/spool/fax`.

The lines inserted into the server's `/etc/printcap` file are:

```
fax|fax|TEDfax Input Filter:\
:lp=/var/spool/fax/null:sd=/var/spool/fax:\
:if=/usr/dt/fax/filters/lpd_filter.sh:\
:lf=/var/spool/fax/lw-log:mx#0:sb:
```

The directory `/var/spool/fax` contains the following files:

```
drwxr-sr-x 2 root ? Jul 10 14:33 .
-rw-r--r-- 1 root 0 Jul 10 14:33 lw-log
-rw-r----x 1 root 4 Jul 12 16:37 .seq
-rw-r--r-- 1 root ? Jul 12 16:37 null
-rw-r--r-- 1 root ? Jul 12 16:37 lock
-rw-r--r-- 1 root ? Jul 12 16:37 status
```

Recognition of Router Strings

When a fax containing embedded router strings is passed through lpr to TEDfax, it is TEDfax's job to recognize that the documents first page contains these router strings. Upon recognition, TEDfax must extract the information specified and then remember to strip off (or throw out) this first page after rendering the document so that it is not sent with the fax as a part of the body being faxed.

The "cookie" which tells TEDfax that a document's first page contains embedded router commands is the presence of the keyword "`FAXBegin:`" on the first page. If this word is present, then the first page will be "tossed" after any additional router commands and data have been extracted. If this word is not present then the document will be assumed to have no embedded router information.

If the document is straight ASCII text, this becomes fairly simple. TEDfax can just scan for the keyword "`FAXBegin:`" and do the right thing.

However, most documents containing embedded router commands actually come from fancy WYSIWYG editors that have produced PostScript output. TEDfax thus has an additional task of trying to decrypt from the PostScript the first page as text before it can begin to determine if the first page contains the keyword "`FAXBegin:`" with other embedded router commands and datum.

TEDfax uses the shell script "`/usr/dt/fax/gsdir/pstotext.sh`" along with one of two possible heuristics to attempt to convert PostScript to text. If the heuristic fails to extract keywords properly, as can be the case, then TEDfax won't be able to identify the embedded router commands present on the first page and will ignore them. This often results in a failure to queue the fax.

Most applications which generate PostScript do it consistently. Thus once a "good" heuristic is found for a sample PostScript document generated with a specific application, it is likely that all documents generated by that application will be properly processed using the same heuristic. See the *Appendix A, Testing and Adding PostScript Heuristics for Extracting Embedded Router Commands* for details on testing and updating `pstotext.sh` to work with specific applications PostScript files.

Faxing using UNIX `lp`

SYSV machines, such Solaris 2.3 and HPUX, also feature a print mechanism through an 'fax printer model' script. Instead of an entry in `/etc/printcap` these hosts have a small shell script which defines a printer "model". This script is used to pass printer requests which come in through lp directly to TEDfax.

The shell script is usually stored in `/etc/lp/model` or `/usr/spool/lp/model` under the name '`fax`'. For details on the script, refer to `/usr/dt/fax/filters/lp_filter`, `/usr/dt/fax/filters`, `lp_set.sh`, and `/usr/dt/fax/filters/lp_model.template`. For example, see below:

```
lp -n fax -t "Bob Smith, BobCo, 5551212" /etc/motd
```

Faxing using UNIX Mail

Users may also send a fax by sending Email to the user "fax". The destination of the fax must be specified in the Subject line, or be embedded as routing information at the top of the message being sent. Because of this, the "Subject" line will NOT be used as the "Subject" field in the fax cover page.

For example, to send a fax to "Bob Smith" of the company "Bob Co" with a fax number of 818 555-5555, a user might type:

```
% Mail fax
Subject: Bob Smith, BobCo, 818 555-5555
Hi Bob. Here's the fax you asked for...
^D
```

This same fax could be sent using embedded routing commands as follows:

```
% Mail fax
Subject:
faxto_name: Bob Smith
faxto_org: Bob Co
faxto_phone: 818 555-5555
faxbegin:
^L (CONTROL L)
Hi Bob. Here's the fax you asked for...
^D
```

Note – For standard text to PostScript conversion, the `^L` is converted to a page break. If you're using a text editor, you should replace the `^L` with whatever is necessary to skip to the next page.

Failure to include enough routing information for at least one recipient will result in TEDfax sending Email back to the user who attempted to send the fax.

The limitation of faxing via command line Email is that there is no provision for attaching multiple documents. The only exception to this currently supported by TEDfax, is that mail attachments of postscript and text files done using Sun's "`mailtool`" will be properly interpreted by TEDfax. Thus, mailtool users may compose Email to "`fax`", specifying the destination in the subject field or in the main body of the Email using router strings.

About the UNIX Mail Link

The ability for users to send faxes by Email is accomplished via a "dummy user" which acts as an input filter into TEDfax.

The default installation of the software installs a dummy alias named "`fax`" in the fax server's `/etc/aliases` file and runs the program "`newaliases`" to make this entry visible to the system.

The line which is placed in `/etc/aliases` is:

```
fax:"|/usr/dt/fax/filters/mail_filter.sh"
```

Remember that if you edit `/etc/aliases`, you must run "`newaliases`" afterwards.

Faxing from Non-UNIX Computers

Many non-UNIX based computers connected to your network can also fax documents using TEDfax if those computers are able to print to UNIX printers. Simply print the fax to the printer named "`fax`".

If the computer's print managing features do not allow you to append the "`-J`" flag to the print command (most do not), you must place routing information on the first page of your document so that TEDfax can determine who the fax should be sent to. Failure to do so will result in the fax failing to queue for transmission. In this event, TEDfax will attempt to send Email to the person who tried to queue the fax; note that this may be a problem if it was queued from a non-UNIX computer which cannot receive Email.

Using Embedded Routing Commands

Routing commands are macro substitutions embedded within the first page of a document to be faxed that define routing information for that fax. They are of the format:

```
key: value
```

If a set of these strings, followed by the string "`FAXBegin:`", appears on the first page of a document, then that information will be used to route the fax. The routing information, up to and including the string "`FAXBegin:`", will then be stripped from the document.

As an example of automatic routing, suppose the ASCII file (or PostScript file) "file_to_bob" contained, in part:

```
FAXto_name: Bob Smith
FAXto_voice: 818 555-1234
FAXto_phone: 818 555-5555
FAXbegin:
^L
Hello, Bob. I just wanted to send you this...
```

The commands `FAXto_name`, `FAXto_voice`, `FAXto_phone`, and `FAXbegin` would be recognized as embedded routing commands. The actual document to be faxed would begin after the string "`FAXbegin:`".

Note – Be sure that your print generator is not configured to do page reversals, as TEDfax will only search for router information on the first page of a document!

Recognized Routing Commands

The following keys are recognized when searching for embedded routing commands. Keys are case-insensitive. Examples of values used are also given. Refer to the table below

Table 8-3 Recognized Routing Commands

Routing Command	Example	Description
`FAXAuthor`	Bob Smith	String to appear in "From Name" field.
`FAXto_name`	John Doe	String to appear in "To Name" field.
`FAXto_org`	JohnCo	String to appear in "To Company" field.
`FAXto_voice`	818 555 1212	String to appear in "To Voice Number" field.
`FAXto_phone`	818 555 1212	String to appear in "To Fax Number" field.
`FAXfrom_name:`	Rob Samson	String to appear in "From Name" field.
`FAXfrom_org:`	SamSon Inc.	String to appear in "From Company" field.
`FAXfrom_voice:`	619 555 1212	String to appear in "From Voice" field.
`FAXfrom_phone:`	619 555 1213	String to appear in "From Fax" field.
`FAXlist`	"Sample List"	List Name to use to generate destination list.
`FAXOrigName`	/etc/motd	Original name of file (for logging purposes.)
`FAXModem`	modem1	Name of modem to use.
`FAXtmp`	/tmp	Path of temporary directory to use.

Table 8-3 Recognized Routing Commands

Routing Command	Example	Description
`FAXServerPasswd`		Password (if any) for faxserver.
`FAXNotifySuccess`	root	Send email to this person if fax transmits successfully.
`FAXNotifyFailure`	root	Send email to this person if fax fails to transmit.
`FAXNotifyRetry`	root	Send email to this person if fax fails but will retry.
`FAXUserLog`	hostname	Hostname to contact for "successful transmit" log update.
`FAXRetryCount`	3	Maximum retry count.
`FAXRetryDelay:`	10	Retry delay time in minutes.
`FAXBannerServer` `FAXCoverServer`	(no value)	If defined, use the server banner page mechanism
`FAXBannerNone` `FAXCoverNone`	(no value)	If defined, no cover page will be rendered.
`FAXCover`	<path>	Full path to coverpage postscript file to use.
`FAXSubject`	<string>	Specify subject string to use.
`FAXHoldOnFailure`	<->	If the fax fails to transmit after the maximum retry count specified mark it as Held in the output queue instead of deleting it.
`FAXContinueOnRetry`	<->	If a fax fails to transmit and retries resend the coverpage and then skip pages which have already transmitted correctly during the last transmit attempt.
`FAXExecuteSuccess`	<path>	Execute the command <path> on the server host when the fax transmits successfully.

Table 8-3 Recognized Routing Commands

Routing Command	Example	Description
`FAXExecuteRetry`	<path>	Execute the command <path> on the server host if fax is to be retried due to a busy signal, etc.
`FAXExecuteFailure`	<path>	Execute the command <path> on the server host if the fax fails to transmit.
`FAXContinueOnRetry:`	-	If defined, retry attempts will re-send the coverpage and then skip pages which have already transmitted correctly, only transmitting the remainder of the document.
`FAXCoverLine:`	<string>	Add another line of text to appear on the cover page (up to 15 lines). This is an alternative to FAXMemoBegin/FAXMemoEnd.
`FAXMemoBegin:`	-	Start of up to fifteen (15) lines of text to appear on the cover page.
`FAXMemoEnd:`	-	Signals end of lines of text to appear on coverpage.
`FAXBegin:`	-	Keyword which tells TEDfax that there are router strings.

ICR Autorouting

When a fax is received, TEDfax stores the fax in the INBOUND spool directory (`/usr/spool/TEDfax/inbound`). If ICR autorouting is enabled, an attempt will be made to autoroute the fax to the correct TEDfax user, using the Xerox/ScanWorX ICR engine to search the fax's coverpage for the names of the probable destinations.

Autorouting is enabled or disabled by checking or un-checking the ICR Autorouting checkbox in the View Options screen. This must be done while running TEDfax as the TEDfax administrator. Autorouting is enabled by default.

The file /var/dt/fax/autoroute/autoroute.list should be edited by the TEDfax administrator to contain the list of user names to search for. Each line in the file has the format:

```
User Name<tab>user@host
```

A sample line might be "John Smith<tab>jsmith@localhost".

TEDfax converts the first page of each fax into ASCII text, then scans the resulting text for the keyword "To:" followed by a user name or names. Note that if the text "To: Smith" appeared, and "John Smith" and "Bob Smith" appears in the file autoroute.list, the fax will be forwarded to both users. If the autorouter cannot find the keyword "To:" or any of the names in autoroute.list, it will leave the fax in the INBOUND directory to be manually routed (forwarded) by the TEDfax administrator.

A log of successfully forwarded faxes is kept in/var/dt/fax/autoroute/autoroute.log.

Autorouting is done through the shell script "/var/dt/fax/autoroute/autoroute.csh"; edit this script to change the behavior of the autorouter for your system.

The system must be running the Xerox/ScanWorX ICR engine, /vat/dt/fax/autoroute/bin/icr_server.sun4, which is started at boot time.

Note – Autorouting using character recognition is available only on sun4 architecture systems running SunOS 4.1.X.

Debugging ICR Autorouting

To debug ICR autorouting, you may step through the autoroute process by hand to see how TEDfax is handling a given fax. You must be logged in as the TEDfax administrator "root", as only this user will be able to execute the ICR engine.

Note – Autorouting using character recognition is available only on sun4 architecture systems running SunOS 4.1.X

---

1. Login as "root" to the fax server host and do a "ps -axw" to verify that the icr_server.sun4 process is running.
2. Select a fax whose first page you believe has valid routing information on it.
3. Convert the first page of the fax to text by running: /var/dt/fax/autoroute/autoroute <path to fax> You may wish to re-direct output to a file.
4. The output from autoroute is the text which the ICR engine was able to extract from the document. If this text looks "sane" we should be able to use it for routing information. If it doesn't, routing won't work. As a human you can make this decision, but the software can only try...

   If the ICR engine does not have a good success rate in recognizing the text, try a larger point size and/or a different font in the To: field.
5. Pass the generated text into "faxrouter", which attempts to match the text against entries from the first column of /var/dt/fax/autoroute/autoroute.list. If matches are found, the second column (user@host) is output.
6. If any addresses (user@host's) are found, the shell script (autoroute.csh) would normally use TEDfax_forwardfax to forward the fax to the named user. A copy is still kept in /usr/spool/TEDfax/inbound.

Modems

The TEDfax Modem Driver is has been tested with the following modems listed in the table below.

Table 8-4 Supported Modems

AT&T Dataport	Model 3710-A2-201.
Telebit WorldBlazer Telebit QblazerPlus Telebit T3000	PROM levels LA7.03 or higher (QB2.00 or higher for the Qblazer). Check PROM level with the command "ATI3". Contact Telebit to update older PROM levels.
Everex 24/96D Everex 24/96E	Everex 24/96D requires PROM levels released after 11/91. Check PROM level with the command "(?)".

Table 8-4 Supported Modems

Multitech 224BAF Multitech 932BA Multitech 1432BA Multitech 1432MU	PROM levels released on or after 5/5/92. Check model number with the command “ATI2”; the date will appear at the end of the returned string. Ensure the dip switches on the right side of the modem are set appropriately.
Supra Faxmodem v.32	Model V1.71-02 TR14-Jxxx-001 225 (ATI3)
BOCA M1440E	Model V1.31-AS29 (from ATI2)
Practical Peripherals	Model PM9600 FXMT

As the TEDfax Modem Driver customizes itself on the fly based on which one of these modems it detects, it is unlikely that plugging in an unsupported modem will work properly.

Developers may consult the section Modem SETUP Override if they wish to attempt to get another Class 2 faxmodem to function with TEDfax.

▼ Modem Configuration

TEDfax must be told which modems to use for its operations, and how those modems are to be configured. This is done by “installing” the modems into TEDfax using the FaxAdmin Tool in the TEDfax application manager. The FaxAdmin tool must be run as “root” in order to properly create, chown, and configure the serial device files used by the modems.

1. Be sure to terminate any getty processes currently running on the device.
2. Run the FaxAdmin tool as the “root” user.
3. Press the “Add Modem” button.
4. Enter the desired name for the new modem, then <return>.
5. Enter the Area Code, Number, and other information (for the faxmodem’s phoneline.
6. Enter the device name, (for example, `/dev/cu0b` or similar).
7. Enter the path of the unique queue directory to use or of the “shared queue” if you are setting up a “modem pool.”
8. Click on “Save.”

The device will be chowned to `root/bin`and will be usable only by TEDfax. The `TEDfax_serverd` daemon must be running in order to recognize the new modem. After adding a new modem, you may run “fax” as the user “root” and restart the modem from the Modem Info screen.

▼ Modem Hardware Configuration

TEDfax usually uses hardware flow control; therefore, the serial cable connecting to the modem must support hardware flow control. In general, the cable should wire pins 2, 3, 4, 5, 6, 7, 8, and 20, for transmit data, receive data, CTS, RTS, DSR, DCD, DTR, and signal ground, respectively.

If you are not using a Sun serial port (A or B), verify that the serial port you are using supports hardware flow control. TEDfax has been successfully tested with Aurora and Sun serial port extenders and some terminal servers. (On the Sun ALM-2, use ports 00-04.) Table 0-4 lists TEDfax compatible modems.

Some modem over ride files can be used to force the modem driver to software flow control. Refer to the section titled, *Modem SETUP Files*.

▼ Multitech DIP Switch Configuration

The Multitech faxmodem has a number of DIP switches on the right side. Switch settings successfully tested at TriTeal Corporation are listed in the table below.

Table 8-5 Multitech DIP Switch Configuration

Switch	Up or Down	Meaning
1	UP	DTR acts “Normally”
2	UP	Hardware Flow Control
3	DOWN	Enable Response Codes
4	UP	n/a
5	UP	Auto answer enabled
6	UP	Max Throughput On
7	UP	RTS functions “Normally”

Table 8-5 Multitech DIP Switch Configuration

Switch	Up or Down	Meaning
8	DOWN	Enable Command Mode
9	DOWN	n/a
10	UP	Dialup Line
11	DOWN	AT or MULTITECH responses
12	DOWN	default setting is DOWN
13	UP	2400 bps operation
14	UP	2400 bps operation
15	UP	CD & DSR “normal”
16	UP	n/a

▼ Modem SETUP Files

TEDfax features the ability for fax administrators to provide an external “SETUP” file which may be used to over ride the internal modem setup routine in the `TEDfax_modem` binary.

This allows programmers to override the modem switch settings used to synchronize the fax modem. This is used by TriTeal Corporation when adding support for new Class 2 fax modems.

In general, if the file “`SETUP.<modemname>`” is present in the spool directory for the modem named <modemname> then the internal setup routine will be replaced by the setup specified into the `SETUP.<modename>` file. For detailed information on the contents and format of this file consult the files in the directory `/usr/dt/fax/utils/modem_override`. This directory contains `SETUP.<modemtype>` files for each of the support fax modems and a `README` file.

Please note that this facility is documented for those advanced users who wish to spend time working with their own fax modems or who have special setup requirements for existing fax modems.

TriTeal Corporation does not provide modem porting services as part of the basic support contract. Support only covers “supported” fax modems!

Using An Alternate Dialer Program

TEDfax provides administrators with the ability to replace or override the internal dialer routine used by the `TEDfax_modem` binary when placing a fax call to a remote fax machine.

Non-US phone systems, or phone systems which run through a special PBX, will want to use this approach in order to prevent TEDfax from adding an extra “long distance 1” to long distance telephone numbers.

Using an alternate dialer can also be used to give local sites more control over their modem device. Adding an “ATM1” can, for example, be used to turn on the modem speaker.

The source code for the default dialer routine is distributed in the directory `/usr/dt/fax/utils/dialer`. A `README` and `Makefile`, along with the source code and comments in the file `TEDfax_dialer.c` may be used to install any number of alternate dialer routines. A step-by-step tutorial of this process is included below.

The source code in the file `/usr/dt/fax/utils/dialer/simple_dialer.c` may also be compiled and installed in `/usr/spool/TEDfax/Any/dialer.modem1` (or any other modem’s spool directory/dialer.<modemname> file). The `simple_dialer.c` routine simply glues any defined prefix string, the exact number entered by the user to fax to, and any postfix string together to result in an AT command to dial the specific number requested. It is ideal for sites in Europe or sites which operate through special PBX systems.

To compile and install the simple dialer, change directories into `/usr/dt/fax/utils/dialer` and type:

```
cc -DMAIN simple_dialer.c -o simple_dialer
```

Copy the `simple_dialer` program in the correct spool directory for the modem you are trying to replace the internal dialer routine for. Be sure to rename the file correctly so it "takes over" for the internal routine. Specific examples for various modems with different spool directories are listed in the table below.

Table 8-6 Modems with Spool Directory Names

Modem-Name	Defined Spool	File Name To Use
modem1	Any	/usr/spool/TEDfax/Any/dialer.modem1
modem2	Two	/usr/spool/TEDfax/Two/dialer.modem2
modem3	Any	/usr/spool/TEDfax/Any/dialer.modem3

General Modem/Serial Port Information

TEDfax locks the baud rate between the modem and the serial line at 19200. This is the minimum speed necessary to allow faxing to function properly.

TEDfax sets the serial port to operate using full hardware flow control signals. This allows both the host and the faxmodem to control the flow of data.

In some cases, TEDfax can be set to use software flow control. A series of SETUP files are provided if you wish or need to use this facility. See files with the word "`SOFTWARE`" in their name in `/usr/dt/fax/utils/modem_override`.

Seamless Integration with WordPerfect 5.1

The following describes the process of seamlessly integrating WP 5.1 with TEDfax so that jobs printed to an "TEDfax" printer from within WP will result in an TEDfax "Send" window popping up with the postscript document pre-attached.

The procedure is to setup a "Printer Port" for 'fax' and then to define a Passthru PostScript printer which points to this port. Consult the WordPerfect Administration Manual for details. The following procedures were verified by TriTeal Corporation for WordPerfect setup.

1. Login as root on the machine whose disks hold WordPerfect.

2. setenv `WPTERM51` to the correct terminal type for the terminal you are using (e.g. `setenv WPTERM51 xterm`)
3. Set your path to include the bin directory of your WordPerfect Installation (e.g. `set path = ($path /home/wp5.1/bin)`)
4. Run the "`wpport`" command.
5. Select "`1`" to Create a new Port.
6. Enter "`fax`" for the port name.
7. Define the header field as empty.
8. Define the trailer field as empty.
9. Define the command to run as:

   ```
   /usr/dt/fax/bin/fax_fw <f> $DISPLAY
   ```
10. Use "`0`" to get back to the main menu.
11. Save the result to disk using "Save" and option 1.
12. Exit `wpport.`
13. Restart `wpexc51.`

   ```
   wpexc51 -k
   wpexc51
   ```
14. Run "`xwp`".
15. From the "File" menu of the big window "Select Printer".
16. Add A New Printer.
17. Select "Passthru PostScript" as the Type.
18. Setup the Printer.
19. Change name to "`TEDfax`" and SET PORT to "fax".

Coverpages

TEDfax coverpages are Postscript documents that may contain a set of known macro strings TEDfax knows to look for and replace. The macros supply "placeholders" in which information such as destination name and company, etc., will appear. Coverpages are optional; faxes are not required to have them.

TEDfax allows you to create your own coverpages, either from within TEDfax or using another application. In general, most one-page Postscript documents may be used; however, users should keep in mind that complex Postscript documents, such as those with complex graphics, can take a long time to render.

PostScript files can contain EPS (Encapsulated PostScript) files, which for example, might contain your company logo. Coverpages are rendered by calling the render script from the `TEDfax_modem` daemon just before making a phone call. This ensures that coverpages will be correctly time-stamped.

TEDfax is shipped with a default coverpage with the title "TEDfax" at the top of the page, in `/var/dt/fax/data/coverpage.ps`. *DO NOT MODIFY THIS FILE* as it is used by TEDfax when creating new coverpages.

Coverpage creation and installation can be done from the File menu of the Send screen:

Create Coverpage...	Create a new coverpage based on the default TEDfax coverpage, but with your own company name and information.
Customize Coverpages...	Install or un-install an existing Postscript file from the user's list of available coverpages.

Using "Create Coverpage"

The "Create Coverpage..." feature of the Send screen's File menu is used to create simple coverpages based on TEDfax's default coverpage.

You will be prompted for your company's name and information; this will be used to customize the new coverpage for your company.

This is a front end to the shell script `new_coverpage`, which copies `/var/dt/fax/data/coverpage.ps` to a user defined file while substituting the company name specified by the user for the word "TEDfax."

To create more complex coverpage designs, use a third-party application to create a one page Postscript file. An example of using FrameMaker for such a task is included in the section titled *Coverpages from FrameMaker*. Then use “Customize Coverpages...” to install that file.

Using “Customize Coverpages”

The “Customize Coverpages...” feature of the Send screen’s File menu is used to add existing Postscript files created from other applications to the user’s menu of available coverpages (in the options panel of “Send”).

If you wish to add a new coverpage to the list of available coverpages, you must first create the new coverpage, either using “Create Coverpage...”, or using an external program to generate a PostScript file that contains the macro strings used by TEDfax to render a coverpage.

Once the Postscript file has been created, use “Customize Coverpages...” to add it to the list of available coverpages. Simply type the name you wish the coverpage to have and the exact path and filename of the postscript file to be used, then press the “Add” button.

The new coverpage will then be added to the user’s menu of available coverpages, appearing in the Options view of the Send screen. To use your coverpage on a fax, just select it from the menu. Be sure to press Save As Defaults under the Options menu if you wish to use this new coverpage as your default cover page.

Recognized Coverpage Macro Strings

Using macro strings within a Postscript coverpage, the user can specify information, such as the destination’s name, that will change from fax to fax.

To use the macro strings, type them (in UPPERCASE) in the exact position, size, font, etc. that you want their represented information to be. TEDfax will search the Postscript file for the macro strings every time the coverpage is rendered, and replace those strings with the information they represent. Known macro strings are listed in the table below.

Table 8-7 Known Macro Strings

`DATESTRING`	Replaced by the current date.

Table 8-7 Known Macro Strings

`FROMNAME`	Replaced by the From Name text field.
`FROMORG`	Replaced by the From Company text field.
`FROMVOICE`	Replaced by the From Voice Number text field.
`FROMFAX`	Replaced by the From Fax Number text field.
`TONAME`	Replaced by the To Name text field.
`TOORG`	Replaced by the To Company text field.
`TOVOICE`	Replace by the To Voice text field.
`TOFAX`	Replaced by the To Fax text field.
`TOSUBJECT`	Replaced by the text in the Subject text field.
`PAGECOUNT`	Replaced by the number of included pages.
`TEXT0 [...TEXT14]`	Replaced by the first 15 lines of the “Message” field.

Coverpages from FrameMaker

The following reviews the process of creating, editing, and installing a Custom CoverPage using FrameMaker.

First, create a single page FrameMaker document which represents the cover page you’d like to use. You can use the default coverpage for TEDfax, distributed as a frame document in `/usr/dt/fax/utils/coverpage.doc`. Feel free to import whatever graphics you would like into the page. On the page, using a fixed size font, insert the “keyword strings” which will be replaced each time a fax is generated (e.g.: `FROMNAME`).

Print the Frame document to a PostScript file using the Frame “Print” pulldown and the Save To File option. For the purposes of the example, we’ll call this file `custom_coverpage.ps`

Edit the saved file and re-join any of the “keyword strings” that FrameMaker may have broken into multiple words. For example, Frame might turn the word “`FROMNAME`” into something like:

```
    (FROM) 117 567.01 T
(NAME) 117 552.01 T
```

Your job is to join these using a text editor such as `vi`. In general, it's okay to merge these two components into the first component, deleting the latter component. In the example above, you'd edit it into:

```
(FROMNAME) 117 567.01 T
```

Finally, having saved the edited file, go into TEDfax's Send Module and use the "File" pulldown to select the "Customize CoverPages" option. Enter a name for the coverpage and the path to the file you've created and use the "Add" button to add it to your database of Cover Pages.

Debugging Hints

Before calling Technical Support we ask that you take the time to step through this debugging guide to verify that your problem and its solution is not already documented in this *TEDfax User's Guide*.

If you are still unable to resolve your problem, please feel free to call TriTeal Corporation Technical Support at 1-800-TRI-TEAL. You can also send Email to `TEDfax@triteal.com`, or fax to 619-930-2081, Attn: TEDfax support.

Debugging - File Ownership & Permissions

TEDfax is a complex package that can require a great deal of careful setup in order to work properly. This debugging guide is included to assist fax administrators in diagnosing some of the more common problems that incorrect system setup can introduce to TEDfax. The table below lists common debugging areas to inspect.

Table 8-8 Debugging Inspection Areas

`/usr/dt/fax`	Verify that faxserver has an install direcory to `/usr/dt/fax`. This directory contains the subdirectories Any, autoroute, bin, data, doc, filters, g3, gsdir, gsfonts, inbound, lock, sbin, tmp, and utils. All directories, including `/usr/dt/fax`, must be owned by bin and have owner write permission.
`/usr/spool/TED-fax/lock`	This subdirectory must have permission settings of drwxrwxrwx (e.g. world writable).
`/usr/dt/fax/.fa xrc`	The file must exist.

Table 8-8 Debugging Inspection Areas

/var/dt/fax/data	This directory must exist and be writable by bin. It must contain the files coverpage.ps, drivers, faxdevices, and macros.
/usr/dt/fax/filters/fax_filter	This file must exist and be owned by root. It must run setuid to root in order to allow faxing from "lpd". (-rwsr-xr-x and owned by root)
/usr/dt/fax/sbin/TEDfax_serverd	This file must exist, be owned by bin and run setuid bin. (-rwsr-xr-x and owned by bin)
/usr/dt/fax/sbin/TEDfax_faxmaild	This file must exist, be owned by root and run setuid to root to allow fax forwarding of faxes. (-rwsr-xr-x and owned by root)

Debugging - Is the Server Running

If the software appears to be properly installed and the permissions on the directories and files are correct, the next thing to check is the existence of the server daemon. Proceed as follows:

Table 8-9 Checking the Server Daemon

Checking Server	Do a "telnet serverhost 1234" to connect to our faxserver manually. A "connect: Connection refused" means that the faxserver is not running on "serverhost". You have to run `/usr/dt/fax/sbin/start_faxserverd` on "serverhost" to get things started.

Debugging - Is the Client Running

Run the GUI portion of the package:

Table 8-10 Checking the TEDfax GUI

Checking the TEDfax GUI (as the fax administrator).	Login as root and run `/usr/dt/fax/bin/fax` or select the “SendFax” icon from the Fax in the Application Manager. The TEDfax should appear in color on your screen. If this is not the case, then the application default resource file (`/usr/dt/fax/Fax.ad`) was not read in or installed on your current display. If you do not have a .faxrc file in your home directory, the software will notice and will ask you if its okay to create one. This runs the script `/usr/dt/fax/bin/new_faxrc`. If you do not have write permission to your home directory you could have real problems. Further, the new_faxrc script is there to create a .faxrc file for users, not fax administrators. It does not append all the necessary keys to the file for the administrator. If you damage the .faxrc file of the fax administrator, you should copy `/var/dt/fax/data/.faxrc` to `/usr/dt/fax/.faxrc` to recover. Note that the environment variables `TEDfax_HOME` and `TEDfax_FAXRC` will override the defaults of /usr/dt/fax and /usr/dt/fax/.faxrc. If you are having trouble, check to see that these environment variables are not misdirecting you.

Debugging - User Interface “looks” funny

If the user interface comes up but the background color of the windows is white on a color display, it is possible that the correct Xdefaults have not been read in.

Table 8-11 Checking Button Strings

Menu buttons have the wrong strings.	The file `/usr/dt/appconfig/C/Fax` may be corrupt. This file defines the strings.

Debugging - Status of The Modem Driver

The next aspect of the software is to check the status of the fax modem. Select the "FaxQueue" icon from the Application Manager in the toolbox to open a Queue module for modem1. Click on "Modem Info" to open a Modem Info module. The following table lists some modem driver status debugging hints:

Table 8-12 Checking Modem Driver Status

Modem Status	The Modem Status field displays the current status of the `TEDfax_modem` process controlling the current modem. It should say "Modem Ready" if all is well.
Terminate	Click on the "Terminate" button. This should terminate the current modem process. The status field should change to "Terminated."
Restart	Click on the "Restart" button to restart the faxmodem. If the message "Terminated - device /dev/XXXX not owned by bin" appears check the ownership of the device in question. It should be owned by bin. If the message "Terminated -- Failed to open /dev/XXXX" is displayed check the permissions of /dev/XXXX (should be rwx------). If the message "Trying to Setup Modem" alternates with "Failure To Setup Modem" and "Hanging Up Modem" then something is wrong with the link between the serial port and the faxmodem (or you have an unsupported faxmodem plugged in). Check the sections on Pre-Install Serial Port Configuration, Modem Hardware, Reserving a Serial Port and Adding A Serial Port. Also check to see that no other processes are currently using the serial port. if the message "Modem Ready" or "Modem Ready [DEMO MODE]" appear, the `TEDfax_modem` process is running and well.

Debugging - Queuing from GUI & Sendfax

The next aspect of the software to check is the queuing of outbound faxes to the outbound fax queue. The following lists some queueing debugging hints:

Table 8-13 Checking the Queueing of Faxes

Getting Ready	To test queuing of faxes open the Queues Module by selecting the"FaxQueue" icon in the Application Manager.

Table 8-13 Checking the Queueing of Faxes

Queuing a Fax from the GUI.	Click on the “SendFax” icon in the Application Manager. Try to move the “Send” window so you still have a view of the “Queue” window. Type in a name, company, voice number and the fax number of a fax machine. Enter a text message into the “Message” field and click on “Send Fax”. Otherwise, the fax should queue to the server. Shortly after you click on “Send Fax” the Queue Module should be updated to include an entry for your fax request.
Queuing a fax from the command line “sendfax” program.	To send a fax from the command line use sendfax: `sendfax -f /etc/motd -n` “Bob Smith” -o “Bob Co” -p “555 1212” Shortly after entering the line above, the fax should appear in the outbound queue. Any errors which occur will print to standard output.

Debugging - Queuing from `lpr` & `mail`

To continue testing of fax queuing, you can try to queue a fax via UNIX `mail` and UNIX `lpr`. The following lists some queuing from `lpr` and `mail` debugging hints:

Table 8-14 Checking the Printer and Mail

Getting Ready	To test queuing of faxes, open the Queues Module by clicking on “FaxQueue” icon in the Application Manager.
Sending a fax from UNIX mail	You should also be able to get a fax to appear in the outbound fax queue using UNIX mail. Use the line `mail fax -s` “Test Name, Test Org, 5551212” followed by a brief fax message to queue a fax via Email. If an error occurs you will receive Email indicating its nature.
Send a fax from UNIX lpr	Type in a line like the one below to queue a fax of your local `/etc/motd` file to your fax machine: lpr -Pfax -J”Name, Company, 5551212” `/etc/motd` If an error occurs, you’ll receive Email describing the nature of the problem.

Debugging - Modem Fails to Transmit or Receive a Fax

If fax jobs are showing in the fax queue, but are never draining from the queue, the `TEDfax_modem` process is failing to transmit the fax. The fax administrator should focus attention on this single portion of the TEDfax package. The following information may be useful in finding a pointer to the actual problem:

Table 8-15 Checking Modem Transmission/Receiving

`TEDfax_modem` running?	Do a 'ps -axw' on the server host and verify that an `TEDfax_modem` process is running for the modem. If one isn't running, use the "Restart" button in the Modem Info Screen to restart the modem.
Check the logfile	Check the logfiles in the spool directory for the modem. For modem1 this is `/usr/spool/TEDfax/Any/logfile.modem1`
Create a debug file and restart the modem process.	TEDfax will store detailed `TEDfax_modem` information if the fax administrator creates a debug file in the spool directory for a modem. The `TEDfax_modem` software will check for this file periodically and, if it exists, dump debug information of all modem commands and modem responses (e.g.: "AT"'s and "OK"s get logged to this file) touch `/usr/spool/TEDfax/Any/DEBUG.modem1` try to send or receive a fax (wait 30-40 seconds) `tail -f /usr/spool/TEDfax/Any/DEBUG.modem1` You can Email this file and brief comments describing the problem to TriTeal Corporation (TEDfax@triteal.com) for help in diagnosing problems. Be sure to DELETE this file when you're done.
Modem driver works but fails to correctly dial.	The built in dialer of `TEDfax_modem` may not be sufficient to handle dialing on phone lines running through PBX's and the like. Often this is the problem when the software is repeatedly unable to send a fax.

Debugging - Failure to Image Properly

If an attached document does not image correctly the following steps may be taken to identify the nature of the problem:

Table 8-16 Checking Document Imaging

Test through GUI attach	Run '`/usr/dt/fax/bin/fax -qf` <filename>' and use the File Menu's "Preview" button to verify that <filename> is imaging properly. In the case of a document rendering properly through the GUI but failing to render through another portion of TEDfax (e.g.: lpr interface), the trouble is probably not the render engine. If the document fails to render, be sure to check for messages in the window you ran "`fax -qf`" in. These may be helpful in debugging.
Check File Type	Do a "file <filename>" to see what UNIX thinks the file is. The base distribution assumes the file to be ASCII Text, PostScript, Sun Rastor, FrameMaker or TIFF. TIFF show up in the default 'file' command as "data" but will shows up as a TIFF file in the GUI attachment window. If the type returned from "file" does not exist as a case statement in the "render" script then <filename> will be rendered as ASCII Text. You can try rendering the file using alternate 'case' types by running: `/usr/dt/fax/bin/render` "<type>" <filename> x <output>
Send Email Copy to TriTeal Corporation	If the image still does not render, and there are no output error messages, please Email a copy of the file to TriTeal Corporation (support@triteal.com) with brief comments describing the problem. Any file type other than ASCII or PostScript should be compressed (if larger than 100K) and uuencoded before Emailing it.

Appendix A- Testing and Adding

PostScript Heuristics for Extracting Embedded Router Commands

As explained in *Chapter 8*, PostScript documents fed to TEDfax through the lpr or lp interfaces will attempt to see if there are any embedded router commands on the first page of the PostScript document. This is done by attempting to extract the ASCII text of the first page of the document using the shell script `/usr/dt/fax/gsdir/pstotext.sh`

As most PostScript generating applications generate their postscript consistently, it is usually the case that once a suitable heuristic is found for a test file generated by a particular application's PostScript engine, that all documents generated by that engine will be properly converted by the same heuristic.

As most applications also place an application-specific "%%Creator" line at the top of the PostScript file, it is fairly easy to modify the pstotext.sh script to execute a specific postscript-to-text conversion heuristic for files which come from the same "Creator."

To debug pstotext conversion you should create a test document and save it as a PostScript file to your UNIX workstation. Then do the following to see how pstotext processes the file:

```
cd /usr/dt/fax/gsdir
```

```
setenv TEDfax_HOME /usr/dt/fax
```

```
pstotext.sh /tmp/myfile.ps > /tmp/myfile-as-text
```

Then take a look at the file `/tmp/myfile-as-text` and see what `pstotext.sh` was able to make of it.

If the text output was not present, or the text was 'garbled' you can try our secondary heuristic by adding lines like the ones already present in `pstotext.sh` for "APPLE" and "NEXT" PostScript output. See the file "`pstotext.sh`" for details.

Finally, if our second heuristic doesn't work, you can always write one of your own by looking at the PostScript file and determining how to extract its text. If you extend `pstotext.sh` to handle a new PostScript file type, the entire TEDfax package will be able to take advantage of your extension as all PostScript-to-text conversions are run through `pstotext.sh`.

If you do add a new extension, please send a copy to support@triteal.com so that other TEDfax users can benefit as well.

Index

Symbols

A

B

C

D

T

U

V

W

X