Meridian IVR

Fax Application Guide

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Publication history

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This document is the first standard issue for Meridian IVR release 2.0/I.

Contents

List of figures

List of tables

List of procedures

About this guide

Who should use this guide

This guide is written for application developers who will be developing and administering fax applications.

This guide assumes that you are familiar and experienced in creating voice applications with Meridian IVR 2.0/I. You should also be familiar with the UNIX operating system and have a knowledge of telecommunications.

How to use this guide

This guide contains the following chapters and appendices:

Chapter 1: Overview

Provides you an overview on the functions and features of the Meridian IVR Fax Response system, and the hardware and software requirements.

Chapter 2: Engineering your system

Shows you how to set up and maintain your fax system.

Chapter 3: Installing Meridian IVR Fax Response

Teaches you how to install your fax system.

Chapter 4: Developing a fax application

Teaches you how to develop effective fax applications.

Chapter 5: Administering your system

Describes how to administer your fax system and generate system logs and reports.

Chapter 6: Troubleshooting your system

Explains the meaning and impact of the warning and error messages and the action you can take to correct the problem.

Appendix A: Meridian IVR fax fonts

Lists the fonts you can use with your fax system.

Appendix B: TTI line keywords

Lists the special formatting you must use for certain TTI line keywords.

Appendix C: List of standard file extensions

Provides you with a list of extensions for the files used in the Meridian IVR Fax Response system.

Related documentation

You may find the following documentation useful while reading this guide.

IVR 2.0/I documentation

The following documents are part of the Meridian IVR 2.0/I Operational and Developmental document suites:

Name of guide	NTP number
Meridian IVR Product Guide	555-9001-010
Meridian IVR Planning and Engineering Guide	555-9001-200
Meridian IVR Installation Administration	555-9001-210
Meridian IVR System Administration Guide	555-9001-300
Meridian IVR Getting Started Guide	555-9001-301
Meridian IVR Application Development Guide	555-9001-310
Meridian IVR 3270 Gateway Development Guide	555-9001-312
Meridian IVR SQL Server Guide	555-9001-314
Meridian IVR VT100 Gateway Development Guide	555-9001-316

Name of guide	NTP number
Meridian IVR 5250 Guide	555-9001-318
Meridian IVR Maintenance and Diagnostics Guide	555-9001-500

Third party documentation

The information supplied with your vendor's host connectivity package is necessary for hardware and software installation and configuration.

Conventions used in this guide

Throughout this guide, we have used several typographic conventions to highlight certain types of information.

- Buffer names are shown in upper case characters, for example, the CURRENT MESSAGE buffer.
- Commands you must type are shown in bold, for example, type **sam** at the prompt.
- Keynames you press are enclosed in angle brackets, for example, the <Enter> key.
- Softkeys shown on the screen that are mapped to function keys are enclosed in square brackets, for example, the [Save] softkey.
- Variables shown in command lines appear in italics, for example, the host_cfg*n* file, where *n* is a variable representing a board number.
- Screen output is shown in `courier`.

Chapter 1: Overview

Meridian IVR Fax Response allows you to create Meridian IVR applications that can send and receive facsimiles (faxes/telefax). For example, you can set up an application whereby a caller has the option to obtain information over the phone, be connected to a live attendant, receive a fax, or send a fax to the application.

Meridian IVR Fax Response is integrated into the Meridian IVR application through cells available on the Meridian IVR palette. Meridian IVR Fax Response is an optional feature that you can add to the basic Meridian IVR system.

A fax can be a T4 file or a file with embedded commands to merge a special form, logo, and/or signature with your text.

Functional description

Meridian IVR Fax Response gives callers the ability to send and receive faxes by telephone through Dual Tone Multi-Frequency (DTMF) and audio as part of a Meridian IVR application.

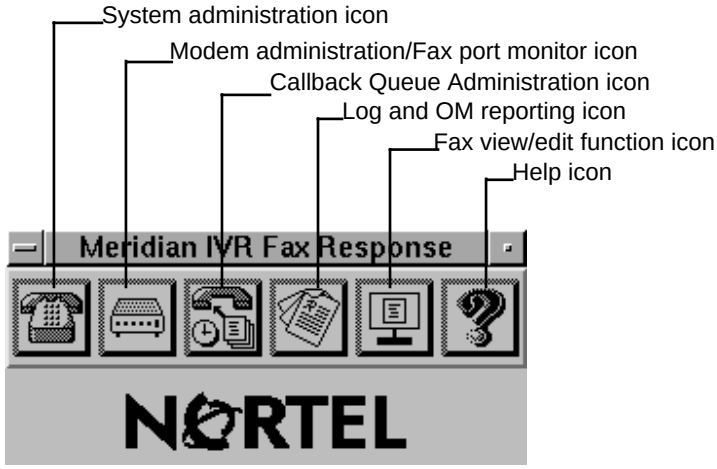
Key features of Meridian IVR Fax Response are

- seamless integration of interactive voice response/fax functionalities
- ability to receive a fax in the same call
- ability to send a fax in the same call, or schedule a fax for later delivery
  Scheduling fax delivery at night can save on long distance charges. It also prevents your customers' fax machines from being tied up in the day.
- multipage fax sending or receiving
- fax print capability on the Meridian IVR laser printer
- fax view/edit capability on the Meridian IVR Super VGA monitor
  Fax View/Edit is an X windows application that allows an application developer or administrator to interactively view/modify faxes or print faxes.
- fax administration functionality on Meridian IVR
- fax files that build faxes dynamically at run-time
  The fax files can reference data that changes from call to call, allowing customized faxes to be sent on each call. The available data includes ASCII data/graphics (for example, text, signature, logo) to overlay, or ASCII data to convert to fax-ready format fonts.
- the ability to incorporate into a fax the data that is collected from a host or SQL database

The Meridian IVR Fax Response main menu

The Meridian IVR Fax Response main menu is an icon-based interface similar to the Meridian IVR main menu. By clicking on the icons, you gain access to the six interfaces for developing and managing applications (see Figure 1-1).

Figure 1-1
Meridian IVR Fax Response main menu



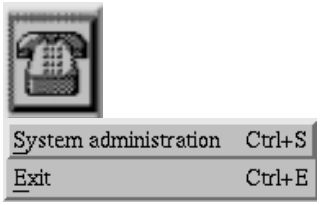
The main menu is invoked automatically when you log in a Meridian IVR Release 2 system that has the Meridian IVR Fax Response option installed.

Clicking on the icons in this menu enables you to invoke the Meridian IVR Fax Response functions and the corresponding windows. You can run several copies of each window at the same time.

Fax System administration icon

The system administration icon, as shown in Figure 1-2, allows you to access the System Administration window and to exit, thereby closing the main window.

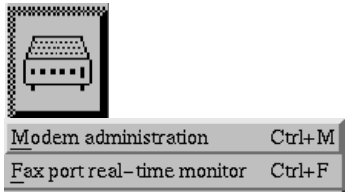
Figure 1-2
Fax System administration icon with pull-down



Modem administration icon

The modem administrative icon, as shown in Figure 1-3, provides you with a pull-down menu of window options including Modem administration and Fax port monitor.

Figure 1-3
Modem administration icon with pull-down



Callback queue administration icon

The Callback queue administration icon, as shown in Figure 1-4, allows you to access the callback queue.

Figure 1-4
Callback Queue administration icon with pull-down

Fax Log/OM reporting icon

The Fax Log/OM reporting icon, as shown in Figure 1-5, gives you access to all logs generated by the fax system in the last seven days as well as call traffic logs.

Figure 1-5
Fax Log/OM reporting icon with pull-down

Fax view/edit icon

This icon, as shown in Figure 1-6, provides access to the fax view/edit windows.

Figure 1-6
Fax view/edit icon

Help icon

The Help icon, as shown in Figure 1-7, enables you to access the help system's overview of operations on the system.

Figure 1-7
Help icon

Hardware

Meridian IVR Fax Response requires the Meridian IVR application processor (AP) to be equipped with a Dialogic Internal 4-port Fax Card (VFX/40E).

Software

Meridian IVR Fax Response comes with the following software components:

- Meridian IVR Fax Response cells for the Meridian IVR Graphical Applications Editor which are the building blocks of applications. These applications enable you to request a same call fax line, release a same call fax line, send or receive a same call fax, and queue a callback fax for later transmission, all within the Meridian IVR application. You can also dynamically create fax files.
- The Meridian IVR Fax Response administration component allows you to manage the Meridian IVR Fax resources. For example, you can add, delete, configure, enable, or disable a modem.
- UNIX tools allow you to process fax documents by formatting them, printing them, or submitting them to the callback queue for delivery.

Chapter 2: Engineering your system

This chapter describes how you can determine the number of fax ports required for your Meridian IVR Fax Response system based on the amount of traffic which your system encounters. This chapter is written for engineers who are setting up and maintaining the Meridian IVR Fax Response system.

Modem pools

There are three types of modem pools:

- same call pool (reserved for Same Call applications)
- callback (reserved for Callback applications)
- shared (reserved for both Same Call and Callback applications)

For both Same Call and Callback applications, Meridian IVR attempts to reserve a modem from the same pool as the application. If no modem of the same type as the application is found, Meridian IVR tries to obtain a modem from the shared pool.

Notes:

1 A Same Call application cannot obtain a modem from the callback modem pool.

2 A Callback application cannot obtain a modem from the same call modem pool.

Determining number of fax ports required

The number of fax ports required by your system depends upon the estimated traffic that you anticipate the system will meet.

You can determine traffic by analyzing the fax application and voice menu traffic. The following subsections contain general information to help you do this.

Fax Response traffic models

Fax Response traffic models have queuing and blocking. A pure queuing model is used for Callback fax. The application initiates a Callback request. The fax is queued up and sent out once it reaches the head of the queue and a fax modem becomes free.

The Same Call model is more complex. An application that wants to use Same Call fax has to reserve a modem first. We recommend that you reserve the modem as close as possible to the time when the application has to use it. If a reserved modem remains idle for more than three minutes, it is freed up by the system. The application can also specify a time that it is willing to wait to reserve a modem.

The Same Call model thus becomes

- the blocking model if that time is set to zero
- the queuing with a time-out model if the time is set to nonzero
  The application dequeues if the time in queue reaches a threshold.

Target Fax Grade of Service

The factors affecting the Grade of Service (GOS) are

1 the number of faxes requested in a busy hour

2 the average number of pages and their resolution

3 the average rendering time per page

4 the number of fax ports available

Fax rendering and sending are one operation to a Meridian IVR application. Therefore, factors 2 and 3 determine how long a fax port is held. Together with factor 1, they determine the fax traffic intensity.

The GOS is important in a Same Call situation because the fax operation takes place on the same Meridian IVR call. The GOS is the probability that a fax modem does not become available in a certain time (which could be 0).

The GOS for Callback fax is a measure of the probability that a fax sitting in the queue waiting to go out exceeds a certain time. This is important when a Meridian IVR application promises to send a fax within a certain time.

Another factor which can affect Callback fax is the probability that the remote machine is busy. If the fax is being sent with a retry option, it is queued up again. For the purposes of this document, this factor is ignored.

Fax on Demand (Callback delivery)

The Fax Application traffic must be estimated and channel requirements determined for the number of faxes requested in the busy hour. This is done by

- estimating the average session length for each fax application defined
- estimating the expected maximum number of busy hour calls to that application

The traffic from a Callback fax delivery should include the duration of the call to receive the request and the duration of the call that delivers the faxes. The call receiving the request consists of the following components:

- time to listen to voice prompts (15 seconds)
- time to select options (10 seconds for each option selected)
- time to enter callback number and extension (30 seconds)

The session time for each fax delivery can be estimated as follows:

- a 10-second time to set up the call
- a 14-second time to answer the call
- a 12-second time to establish protocol
- 40 seconds per page in normal resolution, and 80 seconds per page in fine resolution
- a 10-second time to complete fax delivery

This assumes that the fax is delivered on the first attempt. Additional time should be added if this is not the normal case.

Fax on Demand (Same Call delivery)

The Voice Menu traffic must be estimated and channel requirements determined for the number of faxes requested in the busy hour. This is done by estimating the average session length for each menu defined, the number of pages in the fax to be delivered, and the expected maximum number of busy hour calls to that menu.

The traffic from a Same Call fax delivery call should include the following components:

- time to listen to the greeting prompt
- time to listen to voice menus and select as many faxes as required
- time to receive Same Call faxing instructions
- time to transmit the faxes selected
  - — a 12-second time to establish protocol
  - — 40 seconds per page in normal resolution, and 80 seconds per page in fine resolution
  - — a 10-second time to complete fax delivery

Tables have been generated for fax session lengths of 234 seconds (3.9 minutes). The tables indicate the traffic which can be handled by a given number of Meridian IVR and fax channels. Refer to the *Meridian IVR Planning and Engineering Guide* (NTP 555-9001-200) for more information.

Fax storage requirements

Fax storage limit

All fax data is stored under a single directory hierarchy, so you can use standard UNIX utilities (du) to determine when fax storage has been exceeded. The system does not receive and schedule to send any more faxes when the file system threshold is exceeded, nor will the use of the CFAX cell be permitted.

Hard disk storage

At 60 Kbytes per fax page, you need about 600 Mbytes of disk space for 10 000 pages of fax data, which is the amount of disk space typically available when a Meridian IVR application is first installed.

Second hard disk

You can use the second disk for storing fax data when there is either so many fax pages to store that they would not fit on the first drive, or because the available space on the first drive is being used for other purposes such as databases.

The only Meridian IVR component that can use the second hard disk is the Fax Response option. You can use the space available on the drive for your own purposes.

The second disk drive is mounted as "/sdisk".

Fax support

Remote maintenance and diagnostics are available with your Meridian IVR Fax Response system. Support is accessible via the external modem using a character-based interface. All features of Meridian IVR Fax Response can be accessed with the character-based interface excluding the graphical Fax View/Edit windows.

Access and modem dial-up, which are available with your Meridian IVR Fax Response system, support Fax features. The administrative functions allow you to start up or shut down Meridian IVR Fax Response, configure ports, enable and disable modems, and view the log files maintained by the fax system.

Chapter 3: Installing Meridian IVR Fax Response

This chapter leads you through the procedures for installing Meridian IVR Fax Response. The 4-port fax board used for Meridian IVR Fax Response can be ordered separately for the Meridian IVR application processor (AP). This chapter is meant for an installation technician who has a basic understanding of UNIX and telecommunications.

The 4-port fax board

The AP supports up to two internal 4-port fax boards. The internal fax card offers four ports of enhanced call processing and 14 400 bps (V.17) fax services in a single slot. The fax board has the following features:

- ITU-T G3-compliant (T.4, T.30), ETSI NET/30 compliant
- 14 400 (V.17) (maximum), 9600, 7200, 4800, and 2400 bps
- Automatic Rate Adaptation (fallback)
- IEEE P996 ISA bus compatibility
- telephone interface (trunk type): loop start

The rear bracket of the card contains four RJ-11 connectors, each carrying an audio/fax port.

Performing a hardware installation

CAUTION!

Risk of damage to electronic components

When installing or upgrading the AP, always use an Electro Static Device (ESD) wrist strap. Static electricity can cause serious damage to electronic components.

CAUTION!

Risk of equipment damage

If adding or upgrading a card or peripheral device, follow the software shutdown procedures, then power down the AP. Failure to shut down the AP causes hardware damage.

Procedure 3-1
Installing the fax board

1 Ensure that the dial switch is set according to Table 3-1.

2 Carefully slide the fax board into the appropriate slot.

The first fax board is installed in the sixth slot (the topmost EISA slot). The second fax board is installed in the fifth slot of the AP (below slot 6).

Table 3-1
Fax board switch settings

Board/Slot	SW1 setting
First board (slot 6)	0
Second board (slot 5)	1

Performing a software installation

The software installation for Meridian IVR Fax Response is done during the Meridian IVR software installation. To perform the installation, you should have the following:

- application tape with the keycode for Meridian IVR Fax Response
- the fax card(s)
- second hard drive for additional storage (optional)

For more information on installation procedures, refer to the *Meridian IVR Installation Guide* (NTP 555-9001-210).

Upgrading software

Software upgrades for fax are performed concurrently with the upgrade of any Meridian IVR software.

For more information on upgrading procedures, refer to the *Meridian IVR Installation Guide* (NTP 555-9001-210).

Configuring fax modems

When you configure modems on your system, certain parameters can be modified from their default values. The parameters include device name, modem phone number, modem pool, and station ID. For further information about these parameters, refer to the section in Chapter 5, "Modem naming conventions," on page 3-15.

Procedure 3-2
Configuring existing fax modems

1 In the Meridian IVR Fax Response main menu, click on the Modem administration icon with the left mouse button to access the pull-down menu.

2 Click on Modem administration with the left mouse button.

The frame for the Meridian IVR Fax Response Modem Administration window appears.

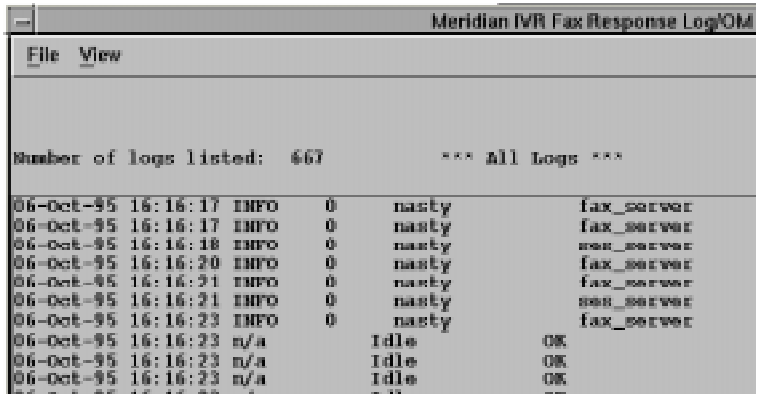
3 Move the mouse to position the frame in a suitable place on the desktop.

4 Click on the left mouse button to open the window.

5 Click on Admin with the left mouse button to access the Admin pull-down menu.

6 Click on Configure modem to access the Configuring modem window:

Figure 3-1
Configure modem window



7 Select a modem pool for the new modem by clicking on the radio button beside either Same Call, Callback, or Shared with the left mouse button.

For more information on selecting modem pools, refer to the section, "Using modem pools," on page 3-6.

8 Type in the Dialogic device name in the form "dxxxBnCn":

- dxxx indicates the modem name.
- Bn indicates the card number, where n equals 1 or 2.
- Cn indicates channel number, where n equals 1–4.

Refer to Figure 3-1 for the location of the various ports.

9 Type in the station ID.

10 Type in the modem phone number for the port specified in step 8.

11 When you finish, click on OK with the left mouse button.

The Modem administration window appears. The list of modems on this window now includes the new modem configuration.

12 To exit the Modem administration window, click on File, then Exit with the left mouse button.

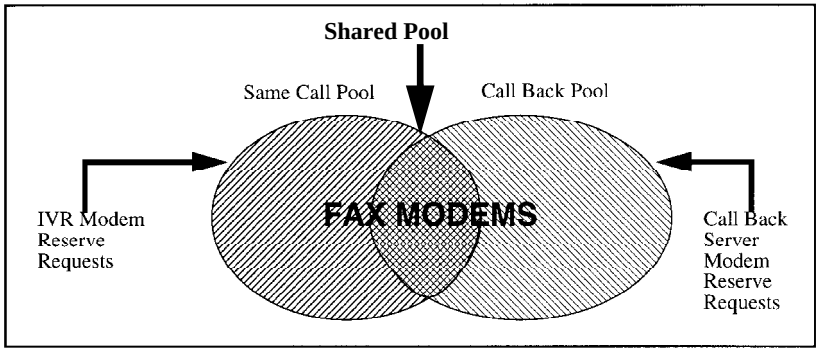
The system returns to the Meridian IVR Fax Response main menu.

Using modem pools

All of the fax modems on your system are allocated to one of three modem pools: Same Call pool, Callback pool, and Shared pool.

The pools can be thought of as two overlapping objects, as seen in the following diagram:

Figure 3-2
Modem pools



You can send faxes in one of two ways: immediately (using Same Call send) or at a scheduled time (using Callback send). The modem used depends on the type of fax being sent (or received), and how busy the modem pools are.

Determining which fax modem to use is based upon the following logic:

- Callback delivery attempts always try to allocate a modem from the Callback pool first.
- Same Call send or receive operations always try to allocate a modem from the Same Call pool first.
- If either of the above operations fail because all of the modems in the pool are busy, an attempt is automatically made to allocate a modem from the Shared pool.
- If the attempt to allocate a modem from the Shared pool fails because all of the modems in the pool are busy, the system waits for the specified number of seconds for a modem from either the Shared pool or Callback/Same Call pool.
- Same Call send/receive operations *never* use a modem in the Callback pool.
- Callback send operations will *never* use a modem from the Same Call pool.

When you configure the modems on your system, you assign them to specific modem pools.

Verifying your installation

You should verify the installation of Meridian IVR Fax Response to ensure that all of the ports which you purchased are working properly and that all phone lines are connected.

The ports on the Dialogic card should be connected to analog ports of the switch using the RJ11 cables provided.

Meridian IVR software can be provisioned for a maximum of eight ports. While performing your verification, test just the number of ports which you have purchased. If you purchase two ports but test all four, the extra two can pass testing even though the Meridian IVR Fax Response software only uses the number of ports purchased.

You should verify each port with a diagnostic program that sends and receives faxes. If the ports work, you can configure and enable them. Once the ports are enabled, run an application to check that the system is operating properly with the Meridian IVR Fax Response software.

To verify the installation, you need to run the diagnostic program for the fax machine and send a fax to the Directory Number (DN) of the appropriate fax port.

Procedure 3-3
Verifying your installation

1 Select “MIVR Fax stop” from the backdrop menu to ensure that Meridian IVR Fax Response is stopped. (You can also stop the system from the System Admin window).

2 In the Unix shell, type

faxdiag

The system asks you to enter the fax board number, fax port, and the external fax phone number.

The system displays the following message:

“Waiting for rings from remote fax machine”.

3 Insert a page in the fax machine (the one whose phone number you specified).

4 On the remote fax machine, go off-hook, then dial the Directory Number (DN) of the port you are testing.

If the program does not return the waiting message, Dialogic hardware/software is not properly installed.

If there is no answer when dialing the port

- the cable or phone line is not connected
- the DN being called is not the DN of that fax port

If the fax is not received back, the command line specified the wrong fax number.

5 After the beep, press Start on the remote fax machine.

The fax machine sends a fax to the faxdiag application running on the modem port.

Once the Meridian IVR port receives the fax, it calls the remote fax machine and sends the fax back. The system then tells you that the test is completed.

Chapter 4: Developing a fax application

Meridian IVR Fax Response is an extension of the Meridian IVR application. To develop a Meridian IVR Fax Response application, you should have a good background in UNIX, telecommunications technology, and programming. It is helpful if you take a course on developing a Meridian IVR application.

Meridian IVR Fax Response can do the following:

- Send and receive multipage faxes to or from a destination group 3 fax device.
- Convert ASCII data to fax-ready format with a selection of fonts and character sizes.
- Convert tiff data to fax-ready format.
- Overlay data (for example, text, signature, or logos) onto the fax data.

The cells provide seamless integration between Meridian IVR and Meridian IVR Fax Response, and allow integration with host connectivity (3270 or VT100) and/or the SQL database.

The following Meridian IVR Fax Response functions are available with the fax cells:

Fax Same Call Send With Fax Same Call Send, you can send a fax back to a caller on the same call. The caller's phone must be connected to a fax machine.

Fax Same Call Receive With Fax Same Fax Call Receive, you can receive a fax.

Callback Send With Callback Send, you can queue a callback fax for subsequent transmission. This is used for callers who do not have a fax machine attached to their phone, or for sending faxes at specified times or dates.

In addition to developing applications for fax on your Meridian IVR application, you can view and edit your faxes with the Fax View/Edit utility which allows you to delete pages or merge information from different sources.

You can also use the Meridian IVR Fax Response Data Concatenation (DCAT) cell to develop fax documents at run time. Therefore, you can send customized faxes on each call, add a company cover sheet with each fax, or merge fax documents.

Building applications

Before you begin building an application, you must understand the basic concepts of Meridian IVR application development. For information on application development, see the *Meridian IVR Application Development Guide* (NTP 555-9001-310). You need to read and be familiar with the concepts in the following chapters of that guide:

- Chapter 1: “Understanding applications”
- Chapter 2: “Understanding cells”
- Chapter 3: “Building applications with the graphical Application Editor”

Meridian IVR applications can be developed using fax cells to send or receive faxes. The main components of Meridian IVR applications are the following:

Cells These are the building blocks of each application. You customize different cells to build your application.

Buffer This is a temporary storage place of information that is passed from cell to cell.

The Meridian IVR Graphical Application Editor (XAE) provides seven new fax cells that allow you to use Meridian IVR Fax Response in your application.

Fax Same Call Reserve (FRSV) The Fax Same Call Reserve cell reserves a fax modem for the exclusive use of the calling Meridian IVR application.

Fax Same Call Release (FRLS) Fax Same Call Release releases the modem previously reserved by the Meridian IVR application.

Fax Same Call Send (FSND) This cell allows you to send a fax during the same call when it was requested. This is done if the caller is calling from a phone attached to a fax machine.

Fax Same Call Receive (FRCV) Fax Same Call Receive allows the application to receive a fax from the caller.

Fax Callback Send (CFAX) This cell allows you to schedule delivery of a fax at some later time.

Two new file manipulation cells provide you, the developer, with the ability to write Meridian IVR applications that create faxes dynamically:

Data File Create/Concatenate (DCAT) The DCAT cell creates or appends data to a data file.

File Delete (FDEL) The FDEL cell deletes one or more files.

Designing an application

Before you begin to build an application, you should sketch the general call flow on paper. The following steps guide you through the process of creating a call flow diagram that shows all of the cells in the application:

1 Turn to Chapter 3, “Building applications with the Application Editor”, in the *Meridian IVR Application Development Guide* (NTP 555-9001-310), and review the section on cell types. Choose the cell types you need.

2 Turn to Chapter 7, “Cell catalog”, in the *Meridian IVR Application Development Guide* for a complete description of the cell types which you have chosen, and make sure that they are appropriate. Refer also to the section “Fax cells” on page 4-11 of this guide for a detailed description.

3 Sketch a call flow diagram that shows the cells and the branches from one cell to another. Chapter 7, “Cell catalog”, in the *Meridian IVR Application Development Guide* describes the branches each cell type may take.

4 Give each cell a meaningful name.

5 Show the buffers that are used or updated. Chapter 7, “Cell catalog”, in the *Meridian IVR Application Development Guide* explains how each cell type uses and updates buffers.

Now that you know how your application looks, you can select the prompts that you want to use. The following sections give further clarification on how to build the different types of Meridian IVR applications.

Using a sample application

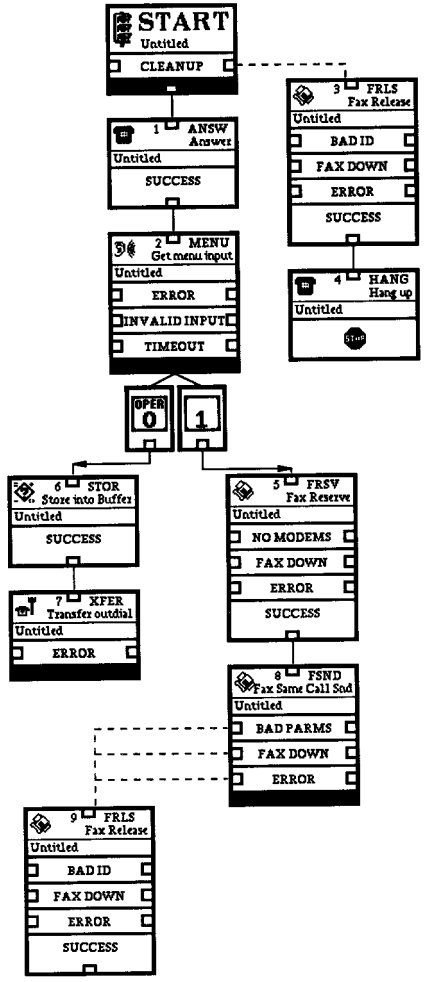
The following applications allow you to learn the basic ideas behind creating Meridian IVR applications:

- sending a fax during the same call
- receiving a fax during the same call
- scheduling delivery of a fax

Sending a fax during the same call

Figure 4-1 shows an application called Fax Same Call Send that allows Meridian IVR to send a fax to a caller.

Figure 4-1
Fax Same Call Send application



Cell 1 An ANSW (Answer Call) cell answers the phone call.

Cell 2 This MENU (Play Menu and Get Data) cell gives the caller two choices:

- Transfer the caller to an operator by pressing 0.
- Select a fax to be sent by pressing 1.

Cell 3 FRLS (Fax Same Call Release) calls a fax cell to release the Fax modem in case the send fails or the call hangs up before the fax transmission is started.

Cell 4 A HANG (Hang up) cell lets the call hang up.

Cell 5 FRSV (Fax Same Call Reserve) calls a fax cell to reserve a Same Call Fax modem for the exclusive use of the calling Meridian IVR application. The parameters of FRSV are the following:

- Call audit enabled
- Call audit information
- Reserve Wait time
- Fax Modem ID (returned from FRSV and sent to FSND)

Cell 6 A STOR (Store) cell stores the operator number in the system buffer.

Cell 7 An XFER (Transfer Outdial) cell transfers the call to the operator.

Cell 8 FSND (Fax Same Call Send) is used to send the fax to the caller. If there is an error, the call branches back to the operator. If the fax is sent successfully, the cell never returns. The parameters of FSND are the following:

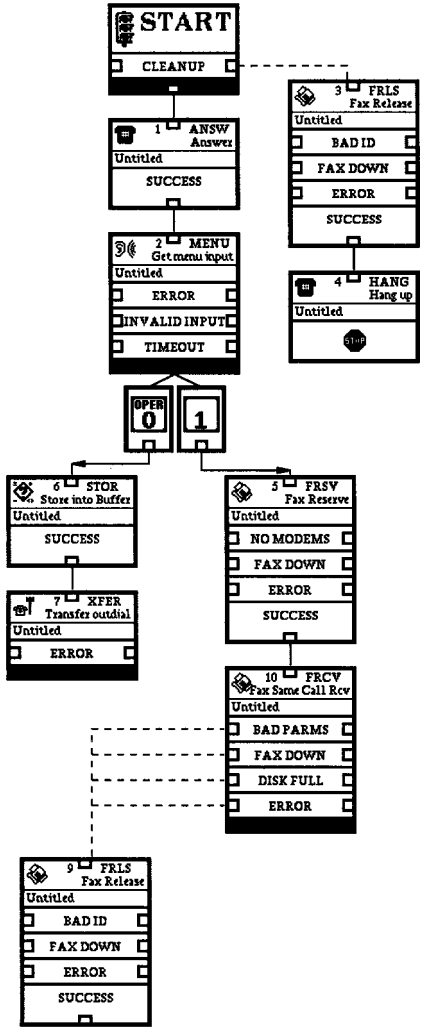
- Call audit enabled
- Call audit information
- Fax modem ID (returned from FRSV and sent to FSND)
- File name
- Resolution
- TTI
- Station ID

Cell 9 FRLS (Fax Same Call Release) calls a fax cell to release the Fax modem, in case the send fails due to errors. Errors can occur if there are wrong or missing parameters, if Meridian IVR Fax Response is not running, or if there is an internal Meridian IVR Fax Response error.

Receiving a fax during the same call

Figure 4-2 shows an application called Fax Same Call Receive that allows Meridian IVR Fax Response to receive a fax from a caller.When the person calls, they are presented with an option to go to an operator or to send a fax. If they opt to send the fax, the system then reserves a fax modem and receives the fax.

Figure 4-2
Fax Same Call Receive application



Cell 1 An ANSW (Answer Call) cell answers the phone call.

Cell 2 This MENU (Play Menu and Get Data) cell gives the caller two choices:

- Transfer the caller to an operator by pressing 0.
- Select a fax to be sent by pressing 1.

Cell 3 FRLS (Fax Same Call Release) calls a fax cell to release the Fax modem in case the send fails or the call hangs up before the fax transmission is started.

Cell 4 A HANG (Hang up) cell lets the call hang up.

Cell 5 FRSV (Fax Same Call Reserve) calls a fax cell to reserve a Same Call Fax modem for the exclusive use of the calling Meridian IVR application. The parameters of FRSV are the following:

- Call audit enabled
- Call audit information
- Reserve Wait time
- Fax Modem ID (returned from FRSV and sent to FSND)

Cell 6 A STOR (Store) cell stores the operator number in the system buffer.

Cell 7 An XFER (Transfer Outdial) cell transfers the call to the operator.

Cell 9 FRLS (Fax Same Call Release) calls a fax cell to release the Fax modem in case the send fails due to errors. Errors can be caused if there are wrong or missing parameters, Meridian IVR Fax Response is not running or if there is a Meridian IVR Fax Response internal error.

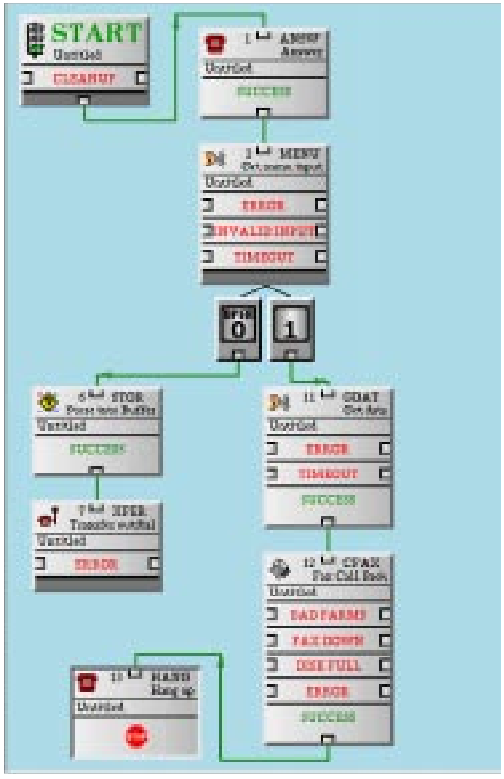
Cell 10 FRCV (Fax Same Call Receive) is used to receive the fax from the caller. The parameters of FRCV are the following:

- Fax Modem ID
- File name

Scheduling delivery of a fax

Figure 4-3 shows an application called Fax Scheduled Delivery that allows Meridian IVR Fax Response to schedule delivery of a fax to a caller**.** When callers dial in to the system, they are presented with an option to go to the operator or to schedule delivery of a fax. The system then requests the telephone number of the fax machine and obtains the basic fax cell buffer information from the system. It is queued up for delivery at some scheduled time.

Figure 4-3
Fax Scheduled Delivery application



Cell 1 An ANSW (Answer Call) cell answers the phone call.

Cell 2 This MENU (Play Menu and Get Data) cell gives the caller two choices:

- Transfer the caller to an operator by pressing 0.
- Select a fax to be sent by pressing 1.

Cell 6 A STOR (Store) cell stores the operator number in the system buffer.

Cell 7 An XFER (Transfer Outdial) cell transfers the call to the operator.

Cell 11 A GDAT (Play Prompt and Get data) cell is used to request a fax number and then to pass that number to a CFAX cell.

Cell 12 CFAX (Fax Callback Send) is used to queue the fax for delivery to the caller. If the fax is sent successfully, the system plays a prompt informing the caller that the fax was sent successfully.

Cell 13 This is a HANG (Hang up) cell.

Fax cells

There are seven fax cells available for adding Meridian IVR Fax Response to a Meridian IVR application:

- Fax Callback Send (CFAX)
- Fax Same Call Reserve (FRSV)
- Fax Same Call Release (FRLS)
- Fax Same Call Receive (FRCV)
- Fax Same Call Send (FSND)
- Data Concatenation (DCAT)
- Fax Delete (FDEL)

CFAX - Fax Callback Send

Description

This cell queues a fax for subsequent delivery to a specified phone number.

Since faxes may be queued for transmission at a later time, no mechanism exists for a Meridian IVR application to monitor the status of the fax in the callback queue.

Note: When Meridian IVR initiates a Callback Send Fax, the outbound call is billed to the fax modem DN.

Buffers used

CFAX uses the buffers specified by the following parameters: Phone number, File name, Resolution, TTI, Station ID, Delete after send, Number of attempts, Retry interval, and Send time.

Buffers updated

CFAX updates the Fax document ID buffer.

Parameters

Parameters	Initial value	Explanation
Call audit enabled	NO	Determines if this cell logs information to the call audit statistics file (audit_stat.d.) Application name Cell name Cell number Date and Time of cell execution Contents of the cell comment field Contents of the call audit information buffer This information is logged if this value is set to YES.
Call audit information	DIGITS	When you enable call auditing, that process logs the contents of this buffer to the audit_stat.d file.
Phone number	NONE	The phone number for which the fax is destined.
File name	NONE	The name of the fax file to send.
Resolution	“default”	The resolution of the fax which can be “default”, “standard”, or “fine”. Setting the value to “default” automatically sets the resolution to “fine”.
TTI	“default”	The TTI line to display at the head of each fax page.
Station ID	“default”	The station ID to send to the other modem. If possible, the length should not exceed 20 characters.
Delete fax after send	“yes”	Whether or not to delete the fax after it has been sent.

Parameters	Initial value	Explanation
Number of attempts	0	The number of times that the system attempts to send the fax. "0" indicates the default value configured in the system parameters screen.
Retry interval (minutes)	0	The minimum amount of time to wait after an unsuccessful send attempt, before attempting to resend the fax. "0" indicates the default value configured in the system parameters screen.
Send time	"+00:00:00"	The earliest time to attempt the first fax transmission. You can specify time as an absolute or relative time. Absolute time is specified in the 24-hour format ("hh:mm:ss"), in which case the fax is sent at a specified time, either on the current day or the next day. Relative time is specified in the following format ("+hh:mm:ss"), in which case the fax is sent when the specified time has elapsed, with a maximum value of +99:59:59. If this parameter is an empty string, the fax is scheduled for immediate delivery. ***Note:*** The :ss or :mm:ss parts of the time can be omitted and default to :00 and :00:00, respectively.
Fax Doc ID	FAX DATA	A Doc ID number the system assigns to a callback fax in the queue.

Next cell

Next cell	Explanation
Bad parms	An invalid buffer value is detected.
Fax down	The fax was not queued because the system is down.
Disk full	The operation is not allowed because the disk has exceeded its “disk full warning threshold”.
Error	Miscellaneous error conditions.

Tables

None.

The calling application must not reserve a fax modem via the Fax Same Call Reserve subroutine. All modem communications, including requests to send a Callback fax, are handled by the Callback Server.

FRSV - Fax Same Call Reserve

Description

This cell reserves a Same Call Fax modem for the exclusive use of the calling Meridian IVR application. You can place a time limit on how long the application waits until a modem becomes available.

Buffers used

FRSV uses the Fax Reserve time buffer — the amount of time the application is willing to wait for a modem to become available.

Buffers updated

FRSV returns the Fax Modem ID for the fax modem now reserved for use by the calling application. The Modem ID is used by FSND and FRCV.

Parameters

Parameter	Initial value	Explanation
Call audit enabled	NO	Determines if this cell logs information to the call audit statistics file (audit_stat.d.) Application name Cell name Cell number Date and Time of cell execution Contents of the cell comment field Contents of the call audit information buffer
Call audit information	DIGITS	When you enable call auditing, that process logs the contents of this buffer to the audit_stat.d file.
Reserve wait time	0	The time in seconds that the application waits if no fax modems are currently available. “0” means the default time configured in the system parameters. ***Note:*** There is no maximum value for the reserve wait time.
Fax Modem ID	FAX DATA	Fax Modem ID returned by a previous call to FRSV.

Next cell

Next cell	Explanation
No modems	Fax reserve is unsuccessful due to lack of available modems.
Fax down	Fax system is down (not started).
Error	Miscellaneous error condition.
Success	A fax modem was reserved successfully.

Tables

None.

FRLS - Fax Same Call Release

Description

FRLS allows you to release a modem reserved by Fax Same Call Reserve (FRSV) if the application fails to release or use the modem within the three-minute modem reserve time.

You only use this cell if a modem is reserved and never used for fax transmission.

Note: You cannot change the modem reserve time.

Buffers used

FRLS uses the contents of the Fax Modem ID buffer.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call audit enabled	NO	Determines if this cell logs information to the call audit statistics file (audit_stat.d.) Application name Cell name Cell number Date and Time of cell execution Contents of the cell comment field Contents of the call audit information buffer
Call audit information	DIGITS	When you enable call auditing, this process logs the contents of this buffer to the audit_stat.d file.
Fax Modem ID	FAX DATA	Fax Modem ID returned by a previous call to FRSV.

Next cell

Next cell	Explanation
Bad ID	The Fax Modem ID of the fax modem reserved by FRSV is incorrect.
Fax down	Fax system is not running.
Error	Miscellaneous error condition.
Success	A fax modem was successfully released.

Tables

None.

FRCV - Fax Same Call Receive

Description

The Fax Same Call Receive cell receives a fax during the same call, provided that a same call fax modem was previously requested through Fax Same Call Reserve.

Buffers used

FRCV uses the buffers specified by the Fax modem ID and File name parameters.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call audit enabled	NO	Determines if this cell logs information to the call audit statistics file (audit_stat.d.) Application name Cell name Cell number Date and Time of cell execution Contents of the cell comment field Contents of the call audit information buffer
Call audit information	DIGITS	When you enable call auditing, that process logs the contents of this buffer to the audit_stat.d file.
Fax Modem ID	FAX DATA	Fax Modem ID returned by a previous call to FRSV.
File name	NONE	The name of the fax file in which to store data.

Next cell

Next cell	Explanation
Bad parms	The call was not successfully transferred to the fax modem.
Fax down	The call was not successfully transferred to the fax modem because the fax system was down.
Disk full	The operation is not allowed because the disk has exceeded its “disk full warning threshold”.
Error	Miscellaneous error conditions.

Tables

None.

If the call is successfully transferred to the fax modem, the cell does not return, and the Meridian IVR channel is free to service new calls.

If the fax is not successfully transferred to the fax modem, control is returned to the calling application which then releases the fax using the Fax Same Call Release cell.

FSND - Fax Same Call Send

Description

Fax Same Call Send allows you to send a fax during the call to the application. You must reserve a fax modem through the Fax Same Call Reserve subroutine to use this cell.

If you are successful in sending your fax, the fax modem is automatically released. However, if the function fails, then you must release the fax modem using the FRLS cell.

Buffers used

FSND uses the buffers specified by the Fax Modem ID, File name, Resolution, TTI, Station ID, and Delete after send.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call audit enabled	NO	Determines if this cell logs information to the call audit statistics file (audit_stat.d.) Application name Cell name Cell number Date and Time of cell execution Contents of the cell comment field Contents of the call audit information buffer
Call audit information	DIGITS	When you enable call auditing, that process logs the contents of this buffer to the audit_stat.d file.
Fax Modem ID	FAX DATA	Fax Modem ID returned by a previous call to FRSV.
File name	NONE	The name of the fax file to send.
Resolution	“default”	The resolution of the fax which may be “default”, “standard”, or “fine”.
TTI	“default”	The TTI line to display at the head of each fax page.
Station ID	“default”	The Station ID to send to the other modem. The length of this string should be limited to 20 characters.
Delete fax after send	“yes”	Whether or not to delete the fax after it has been sent. Setting this parameter to “yes” deletes the fax file and the associated T4 file. It also deletes the generic file and the temporary file that is created before sending the fax.

Next cell

Next cell	Explanation
Bad parms	The call was not successfully transferred to the fax modem.
Fax down	The call was not successfully transferred to the fax modem because the fax was down.
Error	Miscellaneous error conditions.

Tables

None.

DCAT - Data Concatenation

Description

DCAT allows you to mix variable and fixed data from files and text buffers dynamically as part of a Meridian IVR call flow. DCAT also allows you to send customized faxes to a caller in response to varying conditions and/or caller input. For more information, see “Customizing faxes” on page 4-28.

DCAT can perform the following four related functions, each of which is described in detail below:

- Create a new empty file and append text from buffer(s).

  The DCAT function creates a new file and places into it any text supplied in one to nine input buffers. The buffers are concatenated to the end of the file in sequence. If the file to be created already exists, it is truncated to zero before the buffer contents are added.

- Append text from buffer(s) to an existing file.

  The second DCAT function places into a file any text supplied to it in up to nine input buffers. The buffers are concatenated to the end of the file in sequence. If the file does not already exist, it is created before the buffers are added.

- Create a new empty file, and append it to another file.

  This function creates a new file which it appends to any files (one to nine) whose names are given in the input buffers.

  These files are concatenated to the end of the output file in order. If the output file to be created already exists, it is truncated to zero before the given files are appended. Input/output file name conflicts are detected.

- Append a file to an existing file.

  This DCAT function appends to a given output file any files whose names are given in the input buffers.

  These files are concatenated to the end of the output file in order. If the output file does not already exist, it is created before the given files are appended. Input/output file name conflicts are detected.

Buffers used

DCAT uses the buffers specified by the following parameters: File name, Open mode, Data type, and Data.

Buffers updated

DCAT updates the File name buffer by generating the full path name of the created or appended file.

Parameters

Parameter	Initial value	Explanation
Call audit enabled	NO	Determines if this cell logs information to the call audit statistics file (audit_stat.d.) Application name Cell name Cell number Date and Time of cell execution Contents of the cell comment field Contents of the call audit information buffer
Call audit information	DIGITS	When you enable call auditing, that process logs the contents of this buffer to the audit_stat.d file.
File name	NONE	The name of the output file. If you do not supply a file name, the system creates a unique file name and returns in output buffer #1. You can find this file in the fax base data directory. If the file name has the characters *"%ch"* in it, these three characters are automatically expanded into the three digit, zero filled channel number. For example, if the DCAT request originated from channel #5, the file name "*data%ch.tmp*" is interpreted as "*data005.tmp*". Keep in mind that the numbering scheme starts at zero to match the channel numbering scheme used by Meridian IVR (the first channel on the system is channel 0). The characters "*%ch*" are case sensitive. You must specify these characters in lower case.
Open mode	Overwrite	Whether to overwrite or append to a file if it already exists.

Parameter	Initial value	Explanation
Data type	Value	Whether to treat the “data” input buffers as values or as file names.
Data	NONE	The first line of data (mandatory.)
	NONE	Optional lines of data.
File name used	PATH	The name of the buffer that returns the file name that the system uses as the output file. The File name used can be the file name you specify in the file name buffer or a file name generated by the system if you did not specify a file name.

Next cell

Next cell	Explanation
Failure	When “DCAT” fails to perform the specified data manipulation.
Error	Miscellaneous error conditions.

Tables

None.

Example

A standard fax for a banking application can be stored with certain values left blank such as the client’s account balance:

Your current balance is: $

DCAT can be used to insert the client’s account balance into the blank space in the fax:

Your current balance is: $2 304.18

FDEL - Fax Delete

Description

The FDEL cell deletes one or more files.

Buffers used

FDEL uses the data in the buffer specified by the File names buffer.

Buffers updated

None.

Parameters

Parameter	Initial value	Explanation
Call audit enabled	NO	Determines if this cell logs information to the call audit statistics file (audit_stat.d.) Application name Cell name Cell number Date and Time of cell execution Contents of the cell comment field Contents of the call audit information buffer
Call audit information	DIGITS	When you enable call auditing, that process logs the contents of this buffer to the audit_stat.d file.
File Name	NONE	Name of first file to delete (mandatory).
	NONE	Optional names of other files to delete.You can enter up to nine additional file names in buffers one to nine.

Next cell

Next cell	Explanation
Failure	The file was not successfully deleted.
Error	Miscellaneous error conditions.

Tables

None.

Customizing faxes

Meridian IVR Fax Response provides keywords that enable you to customize your faxes. Faxes can be pre-formatted, or you can format your faxes on-line.

There are two types of fax documents:

- Generic files
- Fax files

Generic files

Generic files are readable text files that you can create and modify in UNIX by using any text editor including “vi”. You can also use tools including the DCAT cell.

> ***Note:*** A generic file defines how your fax should look, but is not in a format that can be transmitted. You must convert a generic file into a fax file before you can transmit it.

Generic files provide instructions to Meridian IVR Fax Response for designing your fax. Some examples of keywords that contain these instructions include: ECHO, FASCII, FASCII2, FAX, FAX 2, FAX 3, FONT, INLINE, MARGIN, PAGE, SPACING and TIFF. You can also select specific font styles and sizes and use the FASCII control codes to underline, italicize, or bold your text. For more information, refer to “Keywords” on page 4-30.

In addition to keywords, there are modifier commands that affect the keywords. Some examples of modifier commands are INDENT, OVERLAY, RANGE, and TRANSPARENT. These commands can be strung together. For more information, refer to the section, "Modifier commands" on page 4-48.

Commands requiring modification using units of measurements may have them stated in inches (i), centimeters (c), or pixels (p). File path names are required by some commands. Pathnames are either absolute (a path that has a leading "/"), or relative (a path that does not have a leading "/").

In addition to the keywords and the modifiers, you can add comments in your file for documentation purposes. Comments must begin with a number sign (#) character. You can place comments anywhere on a line except within a quoted string.

> ***Note:*** The system ignores the number sign (#) and all the characters that follow it on that line.

Fax files

Fax files are generic files that have been processed by an image conversion routine and reference nothing but T4 fax pages. Fax files are suitable for printing to a laser printer or for sending to a fax machine.

Generic files are converted into fax files when using the fax cells from the Application Editor, opening a document with Fax View/Edit, or when invoking the "img_create" shell command.

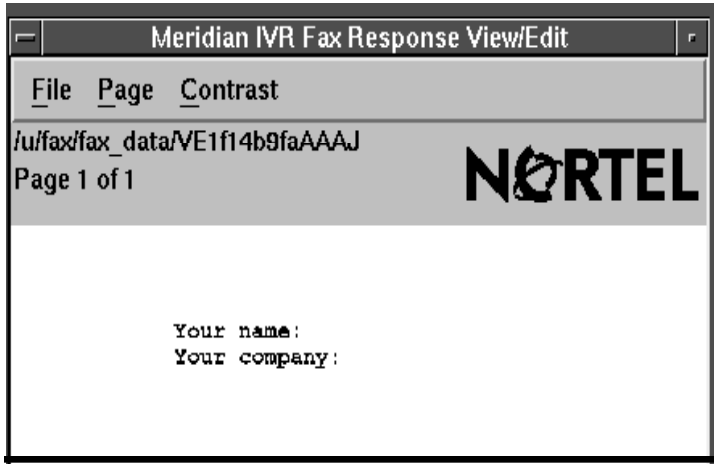
Example of commands used in a generic file

MARGIN TOP 1i
MARGIN LEFT 1i
FONT cour18bn
INDENT 1i inline "Your name:"
INDENT 1i inline "Your company:"

In this generic file, the margins are measured in inches, the font is specified as Courier 18-point bold normal, and text is entered using the keyword INLINE. Both lines of text are indented one inch using the keyword INDENT.

Figure 4-4 is an example of a fax file.

Figure 4-4
Fax sheet produced based on the fax file



Keywords

ECHO

The ECHO parameter places a comment into the Trace window diagnostic output. This occurs when a document is processed into a fax file.

Table 4-1
ECHO parameters

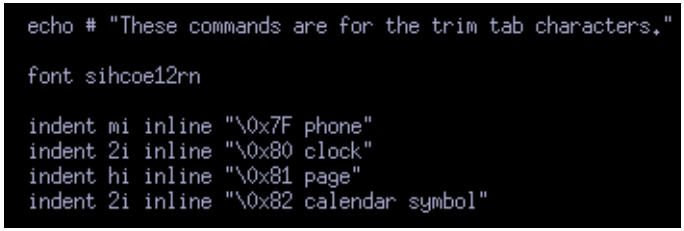
Keyword	Argument to the command	Modifying the command
ECHO	The comment text	ECHO may not be modified.

You can simplify the debugging process by using the ECHO command.This is because this command emits messages, thus allowing you to monitor the progress.

Line numbers appear before the comment text. The debugging output for ECHO is displayed in the Trace window (see “Tracing” on page 4-62 for more information).

Figure 4-5 shows the text in the system editor.

Figure 4-5
Echo text in the system editor



Action

In the Trace window output, the following appears:

```
# This is an example of echo.
```

FASCII

FASCII is a page description language used by Meridian Mail and Meridian IVR Fax Response. It stands for fax-compatible ASCII. FASCII is an enhanced ASCII file with extra information added for describing and modifying information on a page. The FASCII command is used to include and convert a single page of a readable ASCII text file using one of the FONTS you specify. Table 4-2 shows the parameters for this command.

Table 4-2
FASCII parameters

Keyword	Argument to the command	Modifying the command
FASCII	The path name of the ASCII text file	FASCII may be modified by INDENT, OVERLAY, or TRANSPARENT.

FASCII converts only what can fit on the current page. Lines that are too long are cut off at the right margin. If the text has too many lines, the text is cut off at the bottom margin.

Lines that are short are padded out to the right margin with blanks.

Below are examples of FASCII commands used in a generic file:

Example 1

FASCII /user/fred/letters/ethel.txt

Action 1

The text file “ethel.txt” is included in the fax file.

Example 2

INDENT 4.5c FASCII application/column2.txt

Action 2

The text file column2.txt is included in the fax file and indented 4.5 cm on the page.

Meridian Mail uses FASCII control codes between 00H and 1FH for underlining, drawing boxes, and italicizing. It supports them in included text files or in generic files. Other codes which specify horizontal or vertical motion are also supported when they appear in included text files but *not* in generic files.

To make embedding of FASCII codes into a line of text easier, the “C” programming language convention that uses a backslash (“\”) to introduce control characters is supported.

FASCII control codes include the following:

Carriage return (0DH) Creates a new line by placing the next character on the next line. This code marks the end of the line.

Null (00H) This code is ignored in fax files. It must not appear in fax files.

Line feed (0AH) This code allows the line to continue by wrapping the next character on the next line.

Vertical tab (0BH) This code must be preceded by a Carriage Return or a Newline; otherwise, it has no effect

Form feed (0CH) When the FASCII command is processed, the system ignores this control code and any characters that follow it in the text file. When the FASCII2 command is processed, this control code causes the text following it to appear on a new page.

Tab (09H) Tabs to the next stop. Intervals between each stop are eight character spaces.

Start of Underline (0FH) The text following this code is underlined.

End of Underline (0EH) The underline command is disabled.

Start of Overline (12H) The text following this code is overlined.

End of Overline (14H) The overline command is disabled.

Block Left (17H) This prints a blank character with a vertical line down the left-hand side of the character.

Block Right (19H) This prints a blank character with a vertical line down the right-hand side of the character.

Italics On (1EH) The text following is italicized.

Italics Off (1FH) The italics command is disabled.

Horizontal Position Cmd (05H) The next byte following this character specifies an offset, expressed in number of space characters, from the left margin. It is used to position the remaining text on the line.

Space (20H) Draws a blank character.

The system ignores all other control characters.

To use the FASCII control codes, type the following INLINE keyword.

Example

inline "\0x19\0x12\0x0F This should be a box \0x19\0x14\0x0E"

Action

\0x19 prints a blank character with a vertical line down the right side of the character.

\0x12 starts an overline for the text that follows.

\0x0F starts an underline for the text that follows.

After the text, \0x19 puts a blank character with a vertical line to its right.

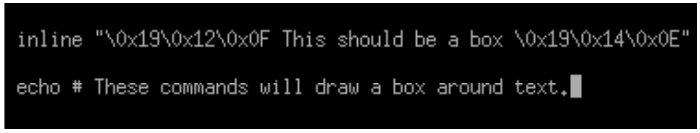
\0x14 terminates the overline.

\0x0E terminates the underline.

The text appears in a box.

Figure 4-6 displays the FASCII control codes in the system editor.

Figure 4-6
FASCII control codes in the system editor



FASCII Trimtab characters

Trimtabs usually contain your company name, time stamp, phone number, and page number information. They are part of the image generated by the transmitting fax machine. These are available only in the font specifically identified as a trimtab font (simcoe12rn). For more information on trimtab fonts, refer to Appendix A.

You can include the following FASCII trimtab characters in your faxes:

Telephone (7FH) A rotary dial telephone icon.

Clock (80H) An analog clock face.

Page symbol (81H) An icon displaying several stacked pages.

Calendar symbol (82H) An icon displaying a desk calendar.

File symbol (83H) An icon consisting of a file cabinet with one drawer open and a file protruding.

Left arrow (84H) An icon displaying an arrow pointing to the left.

Right arrow (85H) An icon displaying an arrow pointing to the right.

The trimtab characters are used with INLINE in the same way as the FASCII characters.

Example
INLINE “\0x7FH 232-4003”

Action
A telephone symbol is placed on the screen next to the phone number.

The following is an example of the trimtab characters you type in the system editor to create trimtab characters.

Example

FONT simcoe12rn

INLINE “\0x7FH phone”
INLINE “\0x80 clock”
INLINE “\0x81 page”
INLINE “\0x82 calendar symbol”

INLINE “\0x83 file”
INLINE “\0x84 left arrow”
INLINE “\0x85 right arrow”

Figure 4-7 displays the trimtab characters as they appear in the Fax View/Edit window. For more information on Fax View/Edit, refer to “Viewing/editing your faxes with Fax View/Edit” on page 4-54.

Figure 4-7
Trimtab characters in Fax View/Edit

FASCII2

FASCII2 is used to include and convert multiple pages of a readable ASCII text file. Table 4-3 shows the parameters for this command.

Table 4-3
FASCII2 parameters

Keyword	Argument to the command	Modifying the command
FASCII2	The path name of the ASCII text file	FASCII2 may be modified by INDENT.

FASCII2 enables large (greater than one page) ASCII files to be included into generated faxes. Short lines are padded out to the right margin, and long lines that exceed the right margin are simply truncated at the margin. A PAGE command is performed every time the bottom margin is exceeded or the form feed character is encountered.

You should add an explicit PAGE after the FASCII2 command to ensure that the information included in the fax file by the next command starts at the top of the next page

Example 1

FASCII2 application/transcript.txt

Action 1

The text file “transcript.txt” is included in the fax file.

Example 2
INDENT 4.5c FASCII2 application/column.txt

Action 2
The multipage text file “column.txt” is included in the fax file and indented 4.5 centimeters on the page.

FAX
The FAX command includes a T4 file to be resent by Meridian IVR as part of a new fax. This file is truncated at the bottom of the page. Type 4 or T4 is a single page of fax data. Fax files contain one or more references to T4 files. Table 4-4 shows the parameters for the FAX command.

Table 4-4
FAX parameters

Keyword	Argument to the command	Modifying the command
FAX	The path name of the fax file	FAX may be modified by INDENT, OVERLAY, or TRANSPARENT.

You should plan margin settings and indentation carefully to avoid losing image data at the right or bottom margins when Meridian IVR resends fax data.

You can use the OVERLAY modifier to ensure that a fax page is overlaid at a specific place on the page.

The following examples indicate how OVERLAY, TRANSPARENT, and INDENT may be used with the FAX command:

Example 1
FAX user/fred/faxes/ethelsfax.t4

Action 1
The T4 file “ethelsfax.t4” is included in the fax file.

Example 2
OVERLAY 2.5i 1.5i TRANSPARENT FAX application/bobsfax.t4

Action 2

This overlays the T4 file “bobsfax.t4” at 2.5 inches across the page and 1.5 inches down the page. The TRANSPARENT keyword makes the character background transparent for “bobsfax”.

Example 3

INDENT 140p FAX application/probrep.t4

Action 3

The T4 file “probrep.t4” is included in the fax file and indented140 pixels on the page.

FAX2

The FAX2 command includes a multipage fax file, by adding an implicit PAGE command after the bottom margin is exceeded. Table 4-5 shows the parameters for this command.

You should add an explicit PAGE after the FAX2 command to ensure that the information included in the document by the next command starts at the top of the next page.

Table 4-5
FAX2 parameters

Keyword	Argument to the command	Modifying the command
FAX2	The path name of the fax file	FAX2 may be modified by INDENT or RANGE.

You should plan margin settings and indentation carefully to avoid losing image data at the right margin when Meridian IVR reformats fax data with the FAX2 command.

You should also be careful of where you position the output scan pointer on the output page to avoid splitting image data across output pages at the bottom margin.

The following example indicates how INDENT or RANGE may be used with the FAX2 command:

Example

INDENT 70p RANGE 2:3 FAX2 /user/fred/faxes/ethelsfax.t4

Action

Pages 2 to 3 of the "ethelsfax" file are indented to 70 pixels and are included in the document.

> ***Note:*** TRANSPARENT and OVERLAY, both single-page functions, are not compatible with FAX2 multipage format.

FAX 3

FAX3 includes a T4 file. This command is equivalent to issuing a FAX command followed by a PAGE SHORT command. This command includes an explicit page break at the end of the file, thereby wrapping to a new page. You use this command primarily in fax files, but you can also use it when creating generic files.

This command allows fax data received by Meridian IVR to be sent back out again as part of a new fax.

You should plan margin settings and indentation carefully to avoid losing image data at the right or bottom margin when the system encounters a FAX3 command.

You should also be careful of where you position the output scan pointer on the output page to avoid losing image data at the bottom margin when the system encounters a FAX3 command. Table 4-6 shows the parameters for this command.

You can use the OVERLAY command to guarantee that a fax page is overlaid at a specific spot on the page. Once the page has been included in the current document, an implicit page is included to ensure that subsequent operations start on a new page. For more information on the OVERLAY command, refer to the section "OVERLAY" on page 4-49.

Table 4-6
FAX3 parameters

Keyword	Argument to the command	Modifying the command
FAX 3	The pathname of the text file	FAX can be modified by INDENT, OVERLAY, or TRANSPARENT

Example
FONT trom10rn
FASCII application/fredsfax.txt
OVERLAY 2.5i 1i TRANSPARENT FAX3 application/bobsfax.t4
INDENT 140p FAX3 application/probrep.t4

Action
The text file “fredsfax.txt” is included in the document using times roman 10 point font. The T4 file “bobsfax.t4” is overlaid onto “fredsfax.txt” 2.5 inches across the page and 1 inch down the page. The TRANSPARENT command makes the character background transparent for “bobsfax.t4”.

FONT

The FONT command specifies the font to be used. The font must be specified separately for some keywords including OVERLAY and TRANSPARENT. Table 4-7 shows the parameters for this command.

Table 4-7
FONT parameters

Keyword	Argument to the command	Modifying the command
FONT	The name of the font file	FONT may not be modified.

FONT specifies the name of the font to be used with the INLINE, FASCII, and FASCII2 keywords. The FONT name remains in effect until the next encountered FONT command. Fonts are stored in the *fonts* subdirectory under the fax base directory.

The convention for naming font files is

NXXWR

The components of the name are defined as follows:

- N: one to nine characters describing the typeface
- XX: the point size (10, 12, 14, 16, 18)
- W: the weight (r,b), where “r” is regular, “b” is bold
- R: the resolution (n,f), where “n” is standard (or normal), “f” is fine

For example, “cour10rn” is a courier font (cour) with 10-point pitch, regular weight, and standard resolution.

Meridian IVR Fax Response provides 61 fonts that are classified into four categories:

- fixed pitch courier font
- proportionally spaced sans serif font
- proportionally spaced serif font similar to a Times Roman typeface
- trimtab font

Excluding the trimtab font, all the fonts have the following attributes:

- available in point sizes of 10, 12, 14, 16, 18
- available in both regular weight and bold weight
- available in both “normal” resolution and “fine” resolution

Table 4-8 shows the list of fonts that you can use for the fax.

Table 4-8
Available 10-point fonts

Courier fonts	Sans serif fonts	Serif fonts
cour10rn cour10rf cour10bn cour10bf	ssrf10rn ssrf10rf ssrf10bn ssrf10bf	trom10rn trom10rf trom10bn trom10bf

For other point sizes, the names are similar but have the appropriate point size included.

The trimtab characters are contained within the font simcoe12rn, a 12-point proportionally spaced font in the simcoe typeface. This upright sans serif face has regular stroke weight and is stored in standard resolution.

See Appendix A for a list of the available fonts and their appearances.

INLINE

This command places a piece of text, specified as a parameter to INLINE, into the fax document. Table 4-9 shows the parameters for this command.

Table 4-9
INLINE parameters

Keyword	Argument to the command	Modifying the command
INLINE	The text string	INLINE may be modified by INDENT, OVERLAY, or TRANSPARENT.

The text string to be imbedded is specified directly after the INLINE command and is placed at the current page position. The text must be enclosed in double quotes and can only span one line.

Example

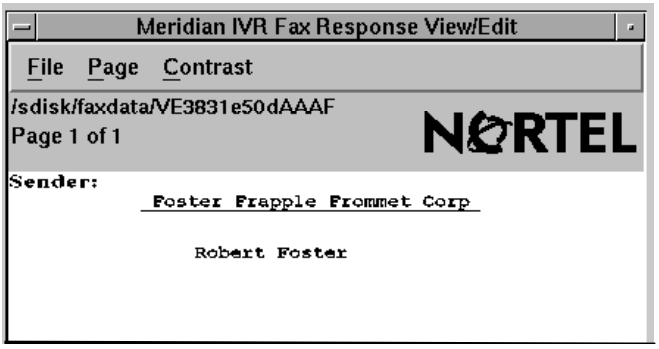
FONT trom18bn
INLINE “Sender:”

FONT trom18bn
OVERLAY 2.5i 1i TRANSPARENT INLINE “Robert Foster”

FONT cour18bn
INDENT 4.5c INLINE “\0x0f Foster Frapple Frommet Corp \0x0e”

The output of the above example in the Fax View/Edit window is seen in Figure 4-8.

Figure 4-8
INLINE keyword in the Fax View/Edit window



To insert a piece of text into a fax document that contains the double quote character, you should specify the double quote using its hexadecimal notation of \0x22.

Example

INLINE "\0x22THIS IS A QUOTED STRING\0x22"

Action

The sentence "THIS IS A QUOTED STRING" will be included in the fax.

MARGIN

The MARGIN command sets a value for the top, bottom, left, or right margins. Table 4-10 shows the parameters for this command.

Table 4-10
MARGIN parameters

Keyword	Argument to the command	Modifying the command
MARGIN	The magnitude of the indentation, and the units in which the margin is specified	MARGIN may not be modified.

The page borders are the default values for the margins. Setting the top and left margins shifts the position of output data, whereas setting the bottom and right margins truncates the output data. MARGIN settings remain in effect until the next MARGIN command.

MARGIN unit specifiers are optional but default to pixels if not defined. The unit specifiers are

- i - inches
- c - centimeters
- p - pixels (204 pixels/inch, maximum of 1728 pixels/line)

Margins are usually defined relative to the top left corner of the page. To specify a quality relative to the right-hand side or the bottom of the page, use a negative number. On an 8.5 x 11-inch sheet of paper, the following settings are equivalent to each other:

MARGIN RIGHT 7.5i
MARGIN RIGHT -1.0i

The margin settings below are also valid examples:

MARGIN LEFT 20P
MARGIN TOP 0.5I
MARGIN RIGHT 19.5C
MARGIN RIGHT -1.2C
MARGIN BOTTOM -0.5I

PAGE

The PAGE command allows you to go to the next page. This command ends an output page and indicates that all processing for the current page of the fax is finished.Table 4-11 shows the parameters for this command.

Table 4-11
PAGE parameters

Keyword	Argument to the command	Modifying the command
PAGE	Indicates whether to produce a short or standard length page	PAGE may not be modified.

An implicit PAGE command is performed at the end of the generic file. You can foreshorten pages without adding extra lines, or pad the file out to the full page length.

- **PAGE FILL** Go to a new page filling the rest of the previous page with blank lines.
- **PAGE SHORT** Move to a new page without adding blank lines on the previous page.
- **PAGE** Defaults to the same action as PAGE FILL.

Example

INLINE “page 1”
PAGE FILL
INLINE “page 2”

Action

The PAGE FILL keyword fills the rest of page 1 with blank lines and moves to a new page where “page 2” appears.

SPACING

The SPACING command sets interline or intercharacter spacing for the output of the fax. Table 4-12 shows the parameters for this command.

Table 4-12
SPACING parameters

Keyword	Argument to the command	Modifying the command
SPACING	The magnitude of spacing, in pixels, to be used during conversion of FASCII text	SPACING may not be modified.

The spacing is measured in pixels. The generated spacing depends on the format of the fax. A normal fax has 98 vertical pixels per inch, while a fine format fax has 196 vertical pixels per inch.

The minimum and default number of blank pixels to insert between each line is one, and between each character is zero.

> ***Note:*** Changes in resolution do not affect interline and intercharacter spacing.

Example 1
SPACING LINE 4

Action 1
A space of four pixels is added between the lines of the fax.

Example 2
SPACING CHARACTER 8

Action 2
A space of eight pixels is added between the characters.

TIFF

The TIFF command converts and includes a Tagged Image File Format (TIFF) file into the fax being created. TIFF is an image storage format that enables you to store multiple images in a single file. Table 4-13 shows the parameters for this command.

Table 4-13
TIFF parameters

Keyword	Argument to the command	Modifying the command
TIFF	The path name of the TIFF file	TIFF may be modified by INDENT, OVERLAY, or TRANSPARENT.

TIFF files may contain multiple images which are listed in the Image File Directory. Meridian IVR Fax Response only processes the first image in the file. Only two color images are supported.

Example 1

TIFF application/page1.tif

Action 2

The TIFF file “page1.tif” is included in the fax file.

Example 2

INDENT 4.5c TIFF application/column2.tif

Action 2

The TIFF file “column2.tif” is included in the fax file and indented 4.5 centimeters on the page.

Example 3

OVERLAY 2.5i 1i TRANSPARENT TIFF application/column1.tif

Action 3

The TIFF file “column1.tif” is included in the fax file and overlaid 2.5 inches from the top of the page, and 1 inch down.

Modifier commands

INDENT

This command indents the next command on the current page to the right from a left margin position. Table 4-14 shows the parameters for this command.

Table 4-14
INDENT parameters

Keyword	Argument to the command	Modifies commands:
INDENT	The magnitude of the indentation and the units in which it is measured, either i, c, or p.	FASCII, FASCII2, FAX, FAX2, FAX3, INLINE, and TIFF

INDENT remains in effect only for the command that it modifies. The indentation is set to zero after that command has been completed.

Example

INDENT 100p FAX application/page1.txt

Action

This indents the fax file by a value of 100 pixels.

OVERLAY

The OVERLAY command sets the output position of the fax page temporarily to a new location on the page. The output position returns to its previous location once the modified command has been completed. Table 4-15 shows the parameters for this command.

Table 4-15
OVERLAY parameters

Keyword	Argument to the command	Modifies commands:
OVERLAY	Specify the X and Y coordinates for the location of the upper left corner of the bounding box applied to the next command.	FASCII, FAX, FAX3, INLINE, and TIFF

The X and Y parameters indicate the location where the output scan pointer should be placed. This position remains in effect until the completion of the modified command:

- X indicates that the displacement across the page is from the absolute left edge (not the margin).
- Y indicates that the displacement across the page is from the absolute top edge (not the margin)

Note: OVERLAY cannot be used with a multipage document.

Figure 4-9 shows an example of plain overlay and the commands you type to create it.

```
FAX diagonal.t4
OVERLAY 0i 0i
FONT cour12rn
FASCII hello.ascii
```

Figure 4-9
Plain overlay

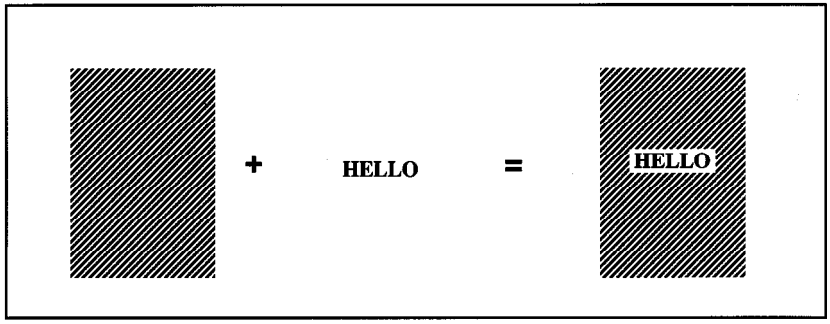
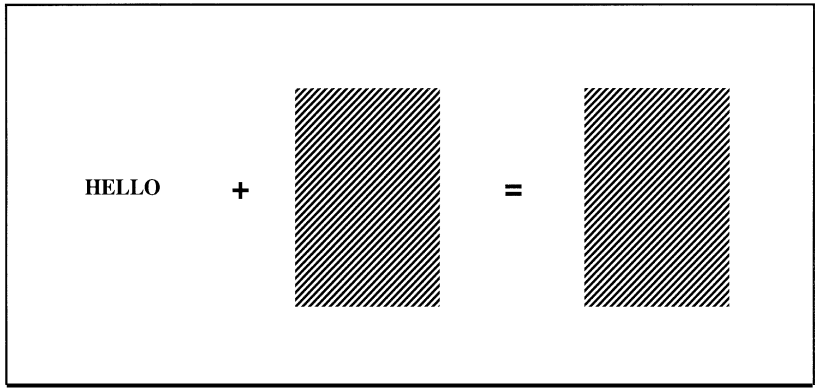


Figure 4-10 shows another example of plain overlay and the commands you type to create it.

```
FONT cour12rn
FASCII hello.ascii
OVERLAY 0i 0i
FAX diagonal.t4
```

Figure 4-10
Plain overlay



RANGE

This command specifies a range of pages to include from a fax file. Table 4-16 shows the parameters for this command.

Table 4-16
RANGE parameters

Keyword	Argument to the command	Modifies commands:
RANGE	Specifies the range numerically.	FAX2

The pages are included in a subset in the fax data file. The possible arguments are “n”, where n is an actual page number; “n:”, where page number “n” and all pages afterward are included; “n:0”, where the range is from page “n” to page 0.

Example

RANGE 2:4 FAX2 /user/fred/faxes/ethelsfax.t4

Action

This specifies a range from page 2 to page 4.

TRANSPARENT

The TRANSPARENT command makes a text background that is being overlaid onto the page transparent. Table 4-17 shows the parameters for this command.

Table 4-17
TRANSPARENT parameters

Keyword	Argument to the command	Modifies commands:
TRANSPARENT	Indicates whether black or white pixels are treated as transparent. Default is white.	FASCII, FAX, FAX3, INLINE, and TIFF

TRANSPARENT affects only the immediately following command. This command allows characters written onto the current output page to overlay whatever is already there without erasing by writing only the non-transparent pixels to the output.

Note: TRANSPARENT cannot be used with a multipage document.

Figure 4-11 shows an example of TRANSPARENT WHITE and the commands you type to create it.

FAX diagonal.t4
OVERLAY0i 0i
TRANSPARENT WHITE
FONT cour12rn
FASCII hello.ascii

Figure 4-11
Overlay with TRANSPARENT WHITE

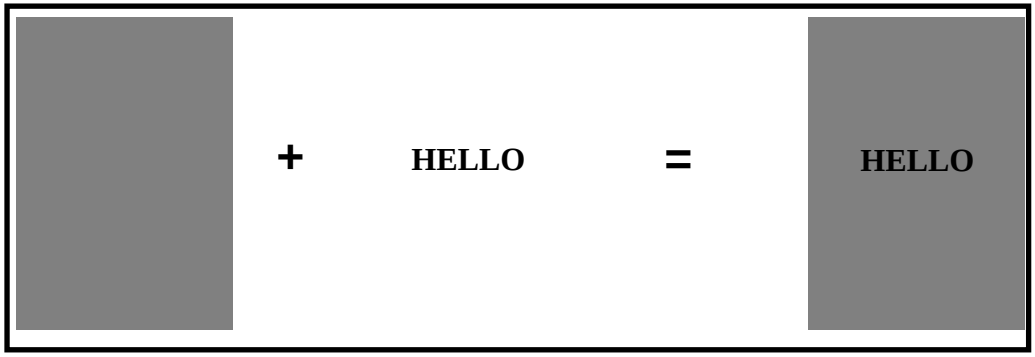
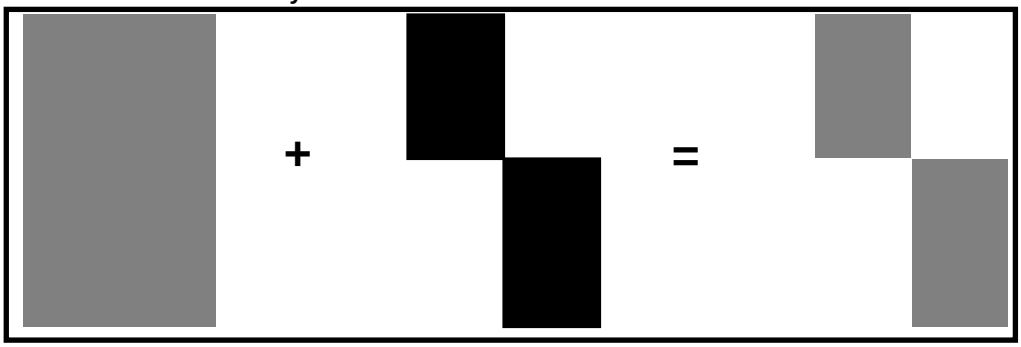


Figure 4-12 shows an example of TRANSPARENT BLACK and the commands you type to create it.

FAX diagonal.t4
OVERLAY 0i 0i
TRANSPARENT BLACK
FAX block.t4

Figure 4-12
Overlay with TRANSPARENT BLACK



TTI line

The TTI line is a line of text that fax machines can add to a fax page prior to transmitting the page. This line of text contains information such as the name of the company sending the fax, the phone number of the sending fax machine, the number of pages in the fax, and/or when the fax was sent. The variables include the following:

- %p: the current page number
- %P: the total number of pages
- %f: the document ID
- %d: the current date/time

The TTI line always uses the trimtab font. You can use the trimtab characters in the TTI information line.

Example
"Page %p of %P %d 416 555-1234"

Action
Page 1 of 23 Mon Oct 15 03:00:00 EDT 1993 416 555-1234

The default TTI line is %C %t %z %P %f10 %D %F9. It produces the following line on the fax: 5:42 EDT 001/006 95/02/28.

> ***Note:*** The TTI line is generated at runtime and is not part of any generic or fax files.

Viewing/editing your faxes with Fax View/Edit

You can view and edit faxes through the Fax View/Edit utility. This utility enables you to do the following:

- print faxes
- view and edit faxes
- delete existing faxes

In addition to inserting and deleting pages from your document, you can invert and rotate your faxes.

To access Fax View/Edit, click on the View/Edit icon in the main Fax window.

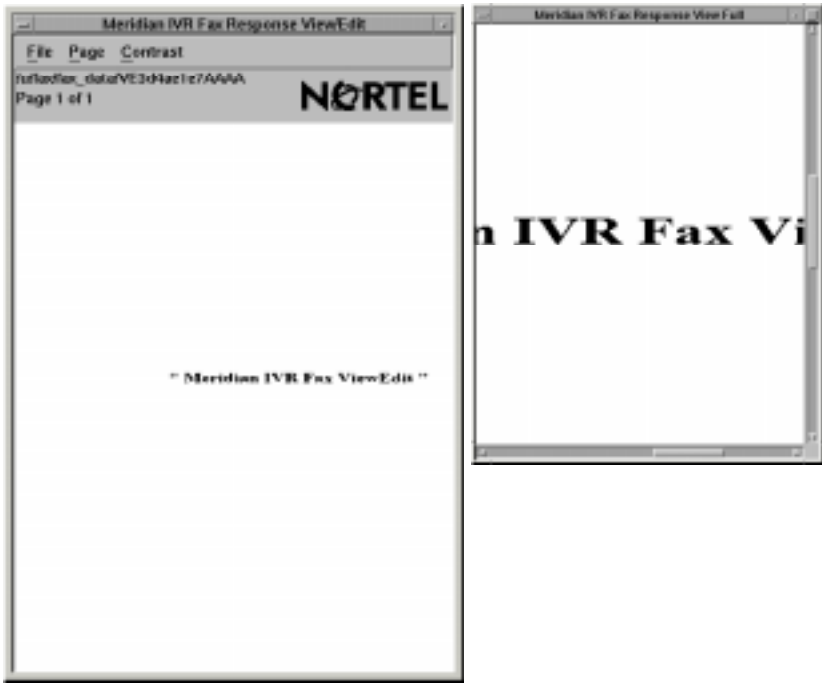
Windows

Meridian IVR Fax Response presents you with two top-level windows:

- *The Meridian IVR Fax View/Edit main window* displays an entire fax page at a 4 to 1 reduction (16 pixels mapped onto 1 pixel). This window contains a menu bar that features File, Page, and Contrast pull-down menus.
- *The Meridian IVR Fax View/Edit FULL window* displays a section of the fax page at a 1 to 1 scale. The window can be resized to the size of the display, or it can be scrolled using scroll bars to view any part of the page. Any section of the main window that you click on with the mouse appears centered in the FULL window.

Figure 4-13 illustrates the View/Edit top-level windows.

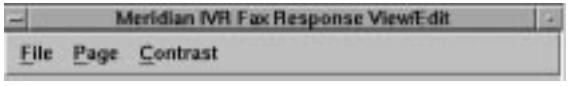
Figure 4-13
Fax View/Edit top level windows



Windows menu bar

The View/Edit menu bar displays options for managing your files and manipulating the fax pages inside. You can access the pull-down menus by clicking on the item with the mouse, or by using the mnemonic (an underscored character), or the accelerator (Ctrl + character sequence). Figure 4-14 illustrates the View/Edit menu bar.

Figure 4-14
Meridian IVR Fax Response View/Edit menu



File

Displays a pull-down menu of options for manipulating files.

Page

Displays a pull-down menu of options for manipulating pages in the fax file.

Contrast

Displays a pull-down menu of options for changing the contrast of a document viewed on-screen.

Using the File menu

The File pull-down menu, as shown in Figure 4-15, provides you with the following options:

Open <Ctrl+O> Displays the file browser to open a generic file or fax file.

Save <Ctrl+S> Saves changes to the current fax document.

Save As <Ctrl+A> Saves the document into a new file. The saved file will be in the fax file format.

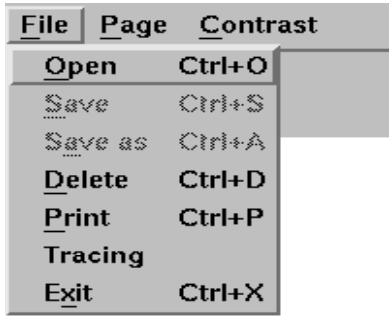
Delete <Ctrl+D> Deletes a fax document.

Print <Ctrl+P> Prints a fax document.

Tracing Turns on the trace option. It is useful when doing image processing on a new or modified generic file.

Exit <Ctrl+X> Exits the View/Edit screen and closes the window. If you have made changes to the file without saving them, Meridian IVR Fax Response prompts you to choose whether or not to exit without saving.

Figure 4-15
File pull-down menu



Opening fax files

You can open fax files through the Fax View/Edit administration window.

Procedure 4-1
Opening a file

1 In the Meridian IVR Fax Response main menu, click on the Fax View/Edit icon with the left mouse button to access the pull-down menu.

2 Click on the option Fax View/Edit with the left mouse button.

(To save time, you can press <Ctrl+O>).

The frames for the Meridian IVR Fax Response View/Edit window and the Meridian IVR Fax Response View Full window appear.

The View/Edit window allows you to view the entire page.

The View Full window magnifies the fax page.

3 Move the mouse to place the window frames in a suitable location on the desktop, then click on the left mouse button to open the windows.

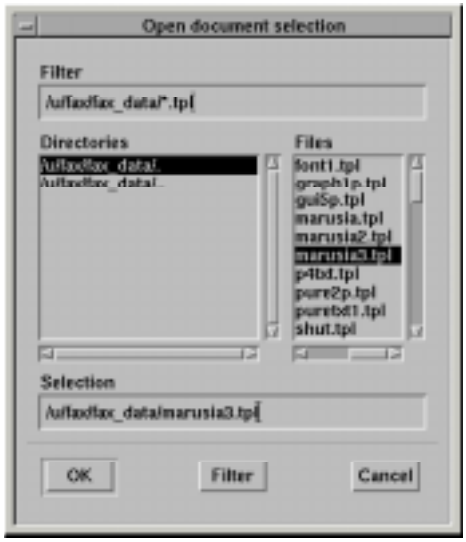
4 In the Meridian IVR Fax Response View/Edit window, click on File with the left mouse button to access the pull-down menu.

5 Click on Open with the left mouse button.

(You can also access this window by pressing <Ctrl+O>).

The Open Document Selection window appears (see Figure 4-16).

Figure 4-16
Open document selection



6 Double-click on the file that you want to open with the left mouse button.

The file name appears in the Selection window.

You can also do the following:

- Type the application name in the Selection text entry box, then click on the OK button with the left mouse button.
- Navigate through the directories, or filter the file names using wild cards. Enter the name of the file that you want to open. This window permits you to browse through a list of files, then select one, or enter a file name directly.

7 Click on OK with the left mouse button.

The file you selected appears in both the Meridian IVR Fax Response View/Edit window and the Meridian IVR Fax Response View/Full window.

Note: If nothing appears in the window, the file that you intended to open likely contains fatal errors. Set a trace to determine what these errors are. For further information on setting traces, refer to "Tracing" on page 4-62.

The following explains each part of the Open Document Selection window:

File filter

The dialog displays only those file names that contain the character-string pattern that you specify in this field. The default filter is */u/fax/fax_data/*.tpl* which displays all file names in the current directory containing the pattern *.tpl*. To use a different filter, enter your own pattern in the Filter selection box, then select the Filter push button to execute the query.

Directories

A list of directories showing the current directory, the parent directory, and any subordinate directories. To select a different directory, click on one of these entries with the left mouse button. A new list is then displayed.

Files

A list of applications in the current directory. You can scroll through these by using the scroll bar, and select a specific file.

Selection

The application file to be selected. Selecting a file name in the Files list displays the name in this box. Otherwise, you can enter a file name directly into this selection box.

Three buttons span the bottom of the window:

OK

A push button that opens the application displayed in the Selection box.

Filter

A push button that executes the File Filter query and displays a list of files that match the filter. Typing <Enter> automatically selects the Filter push button.

Cancel

A push button that returns control to the Application Editor screen without opening a file.

Saving files

You can save a file either under the current name or under a new name.

Procedure 4-2
Saving a file under the current name

1 Click on File with the left mouse button to access the pull-down menu.

2 Click on Save with the left mouse button.

The system saves the file under its current name.

(To save time, you can press the <Ctrl+S>).

Procedure 4-3
Saving a file under a new name

1 Click on File with the left mouse button to access the pull-down menu.

2 Click on Save As with the left mouse button.

The Save Document Selection window appears (see Figure 4-17).

Figure 4-17
Saving a file under a new name

(To save time, you can press <Ctrl+A>).

3 Enter a new name in the Selection box, then click on OK with the left mouse button.

The system saves the file on the drawing board to the new file name.

Deleting files

Procedure 4-4
Deleting a file

1 Click on File with the left mouse button to access the pull-down menu.

2 Click on Delete with the left mouse button.

(To save time, you can press <Ctrl+E>).

A dialog box appears. You have the choice between deleting the current document or another document.

If you choose to delete the current document, the system immediately removes the image from the screen.

If you choose to delete another document, the Delete Document selection window appears.

3 Select the document that you want to delete by clicking on one of the radio buttons with the left mouse button.

4 Click on OK with the left mouse button.

Printing files

Fax View/Edit requires a PostScript printer for printing documents, and only fax files can be printed.

Procedure 4-5
Printing files

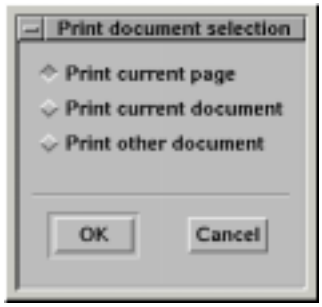
1 Click on File with the left mouse button to access the pull-down menu.

2 Click on Print with the left mouse button.

(To save time, you can press <Ctrl+P>).

The following dialog box appears (see Figure 4-18).

Figure 4-18
Print document selection window



You can print either the current page, the current document, or another document.

3 Click on the radio button next to your choice with the left mouse button, then click on OK.

4 Move the pointer to a window running the system shell.

5 Enter the appropriate print command for printing .ps files (for example **lp /u/ivr/gen/apps/Leave_Msg.ps**) at the command prompt.

Tracing

The trace option enables you to select a level of informational message generation. The informational messages appear in the Meridian IVR Fax Response Trace window and can be saved to a file.

When to use trace

You should use trace to help you process a new or modified generic file. The generic files you create in the vi can be viewed as a fax file using the Fax View/Edit windows. Clicking on trace before trying to open the file gives you access to diagnostic information in case the generic file contains errors and fails to open. Trace explains what errors exist and whether or not they are fatal.

Procedure 4-6
Using trace

1 Exit out of the vi for your newly created or modified generic file.

2 In the Fax View/Edit window, click on File with the left mouse button to access the pull-down menu.

3 Click on the Tracing option.

If you click on the File option with the left mouse button to display the pull-down menu again, you will see that the button next to Tracing is pushed in. This indicates that the Tracing function is working.

4 Click on the File menu option again with the left mouse button to access the pull-down menu.

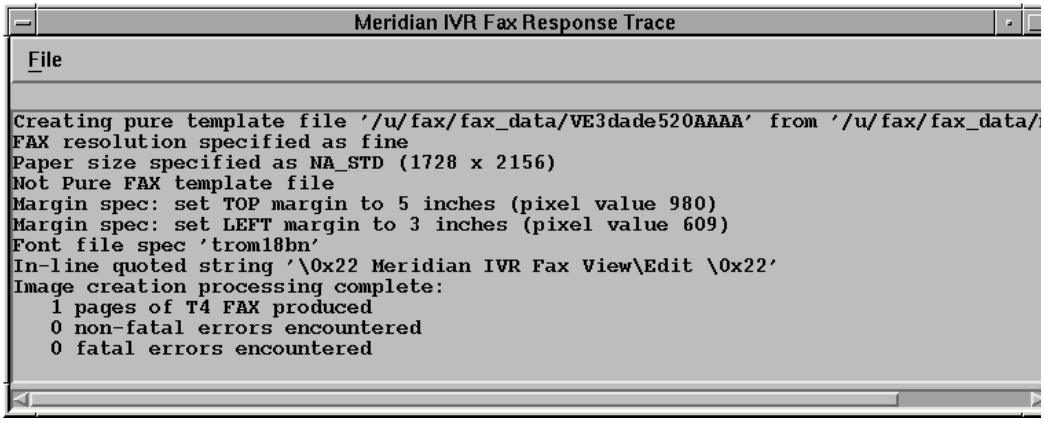
5 Click on Open with the left mouse button again.

6 Open the desired file as explained in Procedure 4-1, “Opening a file”.

If the file contains no fatal errors, the Fax View/Edit windows display your fax file. The Trace window, shown in Figure 4-19, explains how many T4 fax pages were produced, and how many fatal or non-fatal errors were encountered.

If the file contains fatal errors, nothing appears in the Fax View/Edit windows. The Trace window explains that no pages of T4 fax were produced and describes the fatal and non-fatal errors.

Figure 4-19
Diagnostic information in the Trace window



7 Modify your generic file to remove the errors, then follow steps 1–4 again to open your file.

Once your generic file works properly, you no longer need to use trace.

Procedure 4-7
Exiting a file

1 Click on File with the left mouse button to access the pull-down menu.

2 Click on Exit with the left mouse button.

(To save time, you can press <Ctrl+X>).

Using the Page menu

The Page pull-down menu, as shown in Figure 4-20, provides you with a number of options for page manipulation:

Next <Ctrl+N> Moves to the next page.

Previous <Ctrl+B> Moves to the previous page.

Go to Page <Ctrl+G> Moves to a specified page.

Flip <Ctrl+F> Flips the page 180 degrees.

Save <Ctrl+W> Saves the contents of the current page.

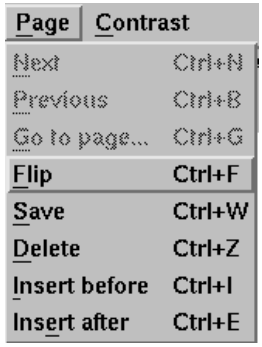
Delete <Ctrl+Z> Deletes a specified page.

Insert Before <Ctrl+I> Inserts a file before a specified page.

Insert After <Ctrl+E> Inserts a file after a specified page.

For example, you can delete a page, such as a cover sheet, from an incoming fax, and then resend it to another location. You can also add content from other faxes into your fax before sending it off.

Figure 4-20
Page pull-down menu



Procedure 4-8
Moving to the next page

1 In the Meridian IVR Fax Response View/Edit window, click on Page with the left mouse button to access the pull-down menu.

2 Click on Next with the left mouse button, or press <Ctrl+N>.

If changes were made to the current page, the system prompts you to indicate whether or not you want to save the changes before moving to the next page.

3 Click on YES or NO with the left mouse button.

The system goes to the next page.

Procedure 4-9
Moving to the previous page

1 In the Meridian IVR Fax Response View/Edit window, click on Page with the left mouse button to access the pull-down menu.

2 Click on Previous with the left mouse button, or press <Ctrl+B>.

If changes were made to the current page, the system prompts you to indicate whether or not you want to save the changes before moving to the previous page.

3 Click on YES or NO with the left mouse button.

The system goes to the previous page.

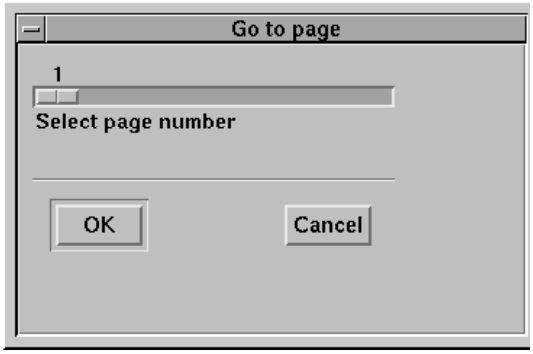
Procedure 4-10
Going to a specified page

1 In the Meridian IVR Fax Response View/Edit window, click on Page with the left mouse button to access the pull-down menu.

2 Click on Go to Page, or press <Ctrl+F>.

The following Go to page slider window appears (see Figure 4-21).

Figure 4-21
Go to page slider window



3 Click on the slider bar with the left mouse button, then move the slider bar to the page you want.

4 Click on the OK button with the left mouse button.

The selected page appears in the Meridian IVR Fax Response View/Edit window.

Rotating the current fax page

Flipping the page allows you to rotate the current fax page by 180 degrees. This enables you to fix the orientation of pages that were fed into the fax machine upside down.

Procedure 4-11
Flipping a page

1 In the Meridian IVR Fax Response View/Edit main menu, click on Page with the left mouse button to access the pull-down menu.

2 Click on Flip with the left mouse button.

(To save time, you can press <Ctrl+F>).

The system rotates the screen 180 degrees in either direction.

Procedure 4-12
Saving a page

1 In the Meridian IVR Fax Response View/Edit main menu, click on Page with the left mouse button to access the pull-down menu.

2 Click on Save with the left mouse button.

(To save time, you can press <Ctrl+W>).

The system saves the page.

Procedure 4-13
Deleting a page

1 In the Meridian IVR Fax Response View/Edit main menu, click on Page with the left mouse button to access the pull-down menu.

2 Click on Delete with the left mouse button.

(To save time, you can press <Ctrl+Z>).

The system deletes the page.

Page insert before

This option enables you to insert one fax file before the current page of the open document.

Procedure 4-14
Inserting a page before the current page

1 In the Meridian IVR Fax Response View/Edit main menu, click on Page with the left mouse button to access the pull-down menu.

2 Click on the “Insert before” option with the left mouse button.

(To save time, you can press <Ctrl+I>).

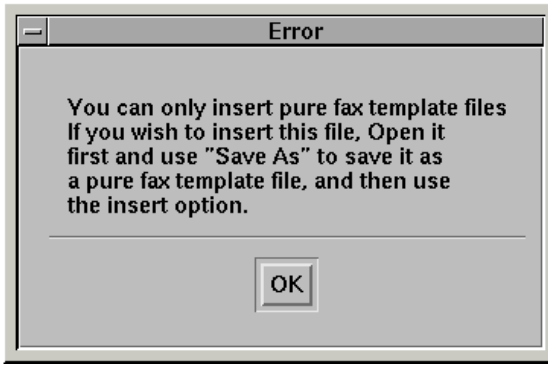
The “insert before” selection window appears.This window allows you to navigate through directories, filter file names, and select the fax file to be inserted.

3 Once you have navigated to the selected file, click on the file name with the left mouse button, then click on <OK>.

The system inserts the document.

Note: You cannot insert a generic file into a fax file. If you try to insert a generic file into a fax file, you will see the following error dialog box (see Figure 4-22).

Figure 4-22
Error box for inserting a generic file into a fax file



Page insert after

This option enables you to insert a fax file after the current page of the open document.

Procedure 4-15
Inserting a page after the current page

1 In the Meridian IVR Fax Response View/Edit main menu, click on Page with the left mouse button to access the pull-down menu.

2 Click on the “Insert after” option with the left mouse button.

A dialog popup window appears.This window allows you to navigate through directories, filter file names, and select the fax file to be inserted.

3 Once you have selected the file to be inserted, click on the file name that you want to insert with the left mouse button, then click on <OK>.

The system inserts a page.

Using the Contrast menu

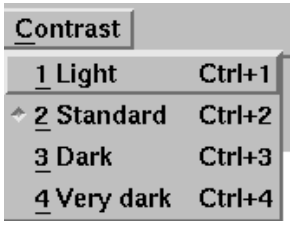
Meridian IVR Fax Response offers you two windows. One window displays an entire fax page at a reduced scale, and the other shows just a section of the fax at full scale.

Contrast allows you to decide how clear the entire, reduced fax display will be, without affecting the clarity of the fax file itself.

The Contrast pull-down menu, as shown in Figure 4-23, provides you with four options for changing the clarity of a fax being viewed on a monitor:

- Light <Ctrl+1>
- Standard <Ctrl+2> - the default setting
- Dark <Ctrl+3>
- Very Dark <Ctrl+4>

Figure 4-23
Contrast pull-down menu



Light

When the original image is very dark, use this option to view detailed areas that are mostly black.

Standard

This contrast should be suitable for most faxes that are handwritten or laser printed in a font size greater than 11 point.

Dark

Dark is typically used when smaller fonts are displayed.

Very dark

This contrast is suitable for documents that have small or very fine font sizes smaller than 10 points.

Procedure 4-16
Setting a level of contrast

1. In the Meridian IVR Fax Response Fax View/Edit main menu, click on Contrast with the left mouse button to access the Contrast pull-down menu.
2. Click on the contrast level that you want with the left mouse button.

   Note: The radio button next to the default Standard is already pushed in.

   The pull-down menu disappears, and the image on the full-view screen changes to reflect the level of contrast selected.

Using the Command line tools

The Meridian IVR Fax Response command line tools are programs that run from a UNIX shell to perform fax processing. Since they do not require a graphics monitor, they are convenient for remote support and development sites.

You can access the following commands through the vad and root accounts:

- img_create
- img_print
- cal_submit

Creating a file with img_create

The img_create command allows you to convert a generic file into a fax file containing T4 fax pages. The command to use in the UNIX shell is as follows:

img_create -o<filename> [-h] [-d<dir>] [-l<file>] [-p<size>] [-s] filename

Note: Parameters in square brackets [] are optional.

The parameters are defined below:

-o<filename> Specifies the name of the output fax file.

-h Prints a help message.

-d<directory> Specifies the base directory name. (This parameter is optional because the utility will fetch this parameter from the Meridian IVR Fax Response system.)

-l<file> Specifies the name of a log file to send all diagnostic output. This parameter is optional. The default is to send all output to stdout/stderr.

-p<size> Specifies a paper size. If this parameter is not used, the default is LETTER. The set of possible values are (LETTER, A4, B4, A3).

-s Generates fax file in standard format resolution. The default is to use fine format.

filename The name of the generic file to be processed.

Example

img_create -oletter2.tpl -d/u/fax/data -s letter

Action

A fax file called *letter2.tpl* is created from the file *letter* which was located in the /u/fax/data/ directory. The file is generated in standard format.

If the file given to this command is already a fax file, the utility makes a copy of the fax file (plus all associated T4 files) under the name in the -o parameter.

Printing a file with img_print

The img_print command allows you to print one or more fax files on the system's PostScript laser printer. The output is sent directly to the printer queue. The command is as follows:

img_print [-h] [-p<printer>] faxdoc [faxdoc#2]...

The parameters are defined below:

-h Prints a help message.

-p Specifies the name of a printer to print to. By default, everything is sent to the system default printer.

faxdoc is the name of the fax file to be printed.

Example
img_print letter2.tpl

Action
The fax file *letter2.tpl* is sent to the lp default printer.

To print a fax file, the PostScript printer must support PostScript level 2, the level 2 “ASCIIHexDecode” and “CCITTFaxDecode” filters. If none of these filters are supported, the fax is not printed and an error message is printed instead.

If a file that is neither a fax file nor a T4 file is given to this command, the file is printed as a simple text file.

Submitting a file with cal_submit

The cal_submit command enables you to submit a fax file to the Callback queue. The command is as follows:

cal_submit -p<phonenum> [-I<retry interval>] [-a<attempts>] [-S<TSI>] [-T<TTI>] [-k] faxdoc

The parameters are defined below:

-p<phonenum> The phone number to which the fax should be sent.

-I<retry interval> The amount of time to wait if a fax fails to be sent before trying to send it again. Defaults to the fax system default.

-a<attempts> The number of attempts that can be made before the system gives up trying to send the document and dequeues the entry. Defaults to the fax system default.

-S<TSI> The Transmit Station ID (TSI) to use. Defaults to the modem default value in modem configuration.

-T<TTI> The TTI line variables to use. If you do not specify the variables, the system uses the default TTI line; %C %t %z %P %f10 %D %F9. For more information on the TTI line, refer to “TTI line” on page 4-53.

-k Deletes the original file after it was sent. The default is to not delete the file after it was sent.

faxdoc The name of the fax file that is to be queued.

Example
cal_submit -p5467000 letter3.tpl

Action
The file "letter3.tpl" is submitted to the callback queue to be sent to the phone number 546-7000.

This command succeeds only when the fax system is up and running; otherwise, the command generates an error message similar to the following:

```
Fax system not running: failed to connect to Call
Back server
```

Creating a fax cover sheet

Once you are aware of each fax function, you can combine them to create your fax file.

Creating a basic cover sheet

Before beginning to use the vi, draw a sketch of your cover sheet on paper. This should help you to decide which commands and FASCII codes to use.

After you have drawn the sketch, you can create a cover sheet using the Fax View/Edit.

Procedure 4-17
Creating a cover sheet using Fax View/Edit

1. In the UNIX shell, access the vi text editor.
2. Name your generic file *cover1.*
3. Enter margin values for your cover sheet in the form

   MARGIN LEFT 2i
4. Specify a font in the form

   FONT trom14rn

5 Using the INLINE keyword, input text and FASCII control codes to design the layout of your cover sheet.

Use the FASCII codes to underline, italicize, or draw boxes around the text.

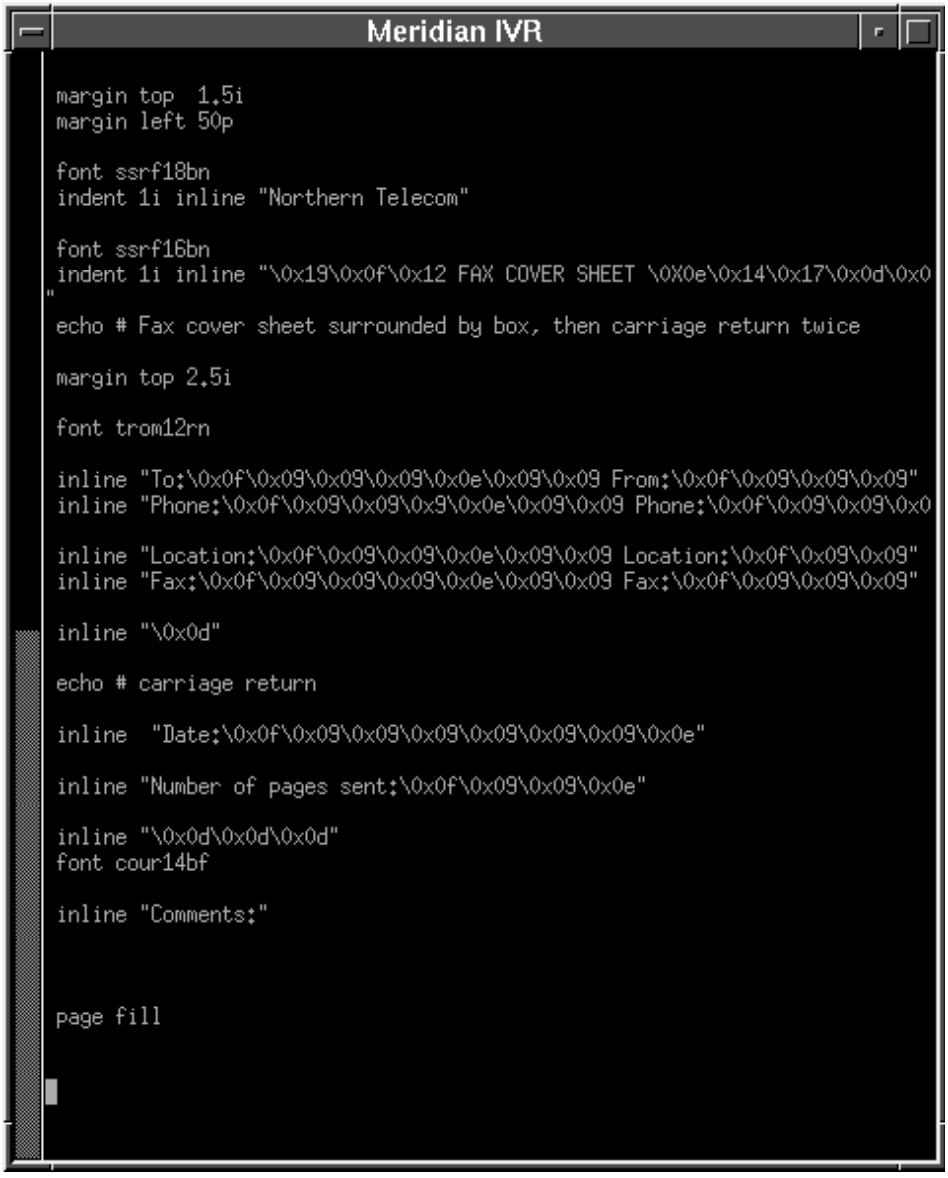
Use the ECHO command to label the FASCII codes.

Example

```
INDENT 1.0i INLINE "\0x22\0x0FH Smith's Carpet Supply
\0x0EH\0x22\0x0DH"
ECHO # line of text in quotation marks, and underlined, then
carriage return
FONT ssrf10bn
INDENT 0.5i INLINE "\0x1EH We've got you covered!
\0x1FH\0x0DH"
ECHO # text italicized, indented 0.5i, then carriage return.
```

Figure 4-24 shows a sample cover sheet in the vi editor.

Figure 4-24
Sample cover sheet in the vi text editor



6 After you have entered the information, exit the text editor.

7 From the Fax Main menu, click on the Fax View/Edit button with the left mouse button to position the windows on the desktop.

8 In the main View/Edit window, click on File with the left mouse button to access the pull-down menu.

9 Click on Trace.

The diagnostic output of your cover sheet appears.

10 From the File menu, click on Open with the left mouse button.

The Open document selection window appears.

11 In this window, find the directory that contains your text editor file.

12 Click on the file name with the left mouse button, or type the name into the Open document selection window, then click on OK.

If the text editor file contains fatal errors, the system does not display an image in the View/Edit windows. Check the Trace window to determine what errors exist.

If the file contains non-fatal errors, the image appears. Check the Trace window for errors.

13 To fix errors, or to change formatting, return to the text editor and open the file. Check the output again using Fax View/Edit until you are satisfied.

You have now produced a cover sheet which is a T4 file.

Meridian IVR Fax Response allows you to create T4 fax pages in more than one way. The following section, Procedure 4-18, offers another example for creating cover sheets.

Procedure 4-18
Creating a cover sheet using img_create

1 Follow steps 1–5 of Procedure 4-17, “Creating a cover sheet using Fax View/Edit”.

2 In the UNIX shell, type the img_create command and parameters. For example:

img_create -cover.tpl -d/u/faxdata/ -s cover1

A message appears indicating that the system created file "cover.tpl from the file cover1.

If you open the new file in the vi, you see a line of text similar to the following:

```
FAX3  v4388c533dAAAD
```

You have now created a cover sheet which is a T4 file.

Using the generic file as input to the next generic file

The next step in creating a cover sheet requires using the generic file as input for the next generic file. If you create a new generic file called *cover2*, the file *cover.tpl* will be the input for the generic file.

Procedure 4-19
Propagating a new generic file

1. In the UNIX shell, access the vi editor.
2. Open a new file and call it *cover2*.
3. Use the INLINE keyword, to enter a document title.

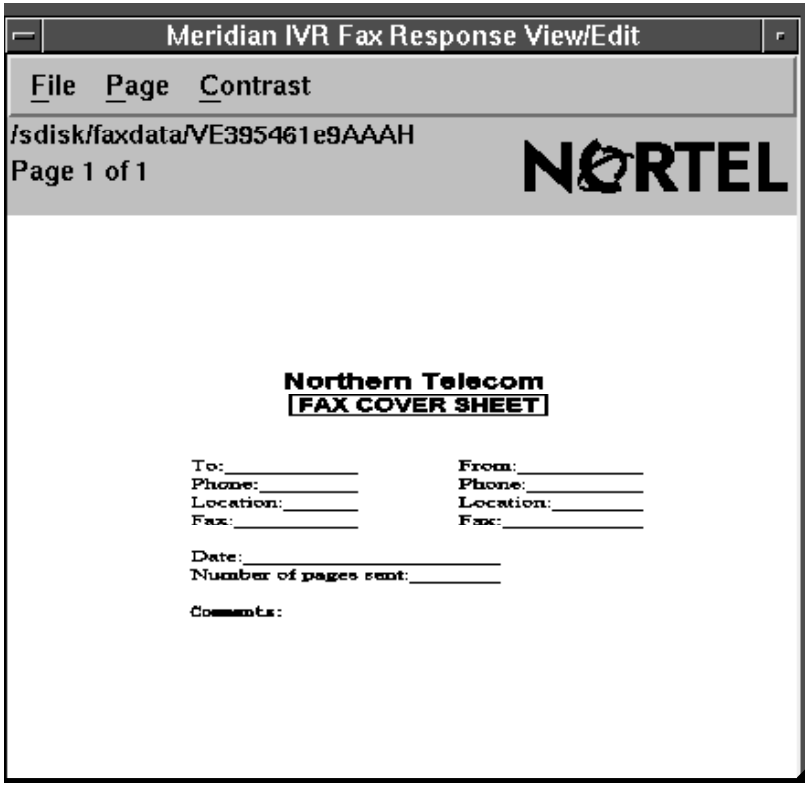
   Note: You can use trimtab characters in the document title.
4. Using the OVERLAY keyword, insert the file "cover.tpl".

   Example:
   OVERLAY 4.5c 0.5c u/fax/fax_data/Cover.tpl
5. Open the file *cover2* in the Fax View/Edit window.

   Notice that the file contains the cover sheet which you created as the file cover, and that the file is located 4.5 centimeters across the page from the left, and 0.5 centimeters down the page.

You have created a basic fax cover sheet to send to a caller with the FSND or CFAX cells (see Figure 4-25).

Figure 4-25
Fax cover sheet in Fax View/Edit



Chapter 5: Administering your system

The Meridian IVR Fax Response system administration interface enables you to manage the system and its modems, and to generate logs and reports with the graphical user interface windows on the system's console.

This chapter is written for system administrators. Generally, you do not need to know UNIX to administer the system; however, you should have a good background in UNIX to troubleshoot the system.

In addition, you should have a good grasp of telecommunications technology and a sound knowledge of programming concepts. It is also helpful if you have taken a course in developing Meridian IVR applications.

Using the Super VGA monitor

For administrators with an SVGA monitor, you can perform system administration with a window-based interface. If you are doing system administration remotely with a VT220 compatible terminal, you are using the curses-based interface. This performs the same functions, but you access items from a menu list.

Using the fax system windows

To administer the fax system on the development or windows-based system, you select various functions with the left mouse button. If you want to change certain values, you can type in the value and save it by clicking on the OK button.

The Meridian IVR Fax Response main menu, shown in Figure 5-1, consists of the following icons:

- System Administration
- Modem Administration
- Callback Administration
- Log and Operational Measurement (OM) reporting
- Fax view and edit
- Help

Figure 5-1
Meridian IVR Fax Response main menu

System Administration window

You need to access the System Administration window to administer the system.

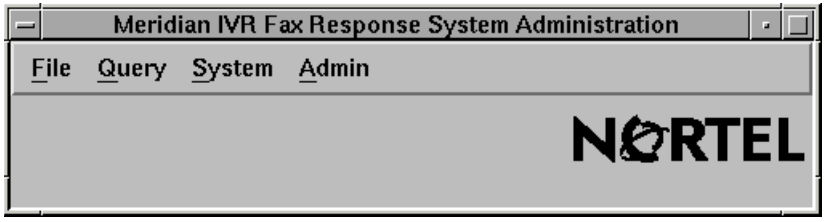
Procedure 5-1
Accessing the System Administration window

1 From the Meridian IVR Fax Response main menu, click on the System Administration icon with the left mouse button to access the pull-down menu.

2 Click on System Administration.

The System Administration window appears (see Figure 5-2).

Figure 5-2
System Administration window



The System Administration window enables you to access administrative functions including system status, maintenance, system queries, and system parameters management.

The main system administration options are as follows:

- File
- Query
- System
- Admin

File

This option allows you to exit the system administration function and return to the main menu.

Query

This option allows you to determine system status, software version, and fax database disk usage.

System status The system status menu item presents you with a window that displays the current state of the fax system. The following are the possible states:

- Fax system running: fully operational
- Fax system not running
- Fax system faulty: stop and restart the system
- System stopped: non operational, please re-start system

Software version This option allows you to check the version number for the Meridian IVR Fax Response system you are using.

Fax database disk usage If your Meridian IVR Fax Response system is running, the disk usage of the fax database directory, including all subdirectories, and the filesystem that contains the directory can be queried. The information displayed includes the filesystem total space, filesystem used space, filesystem available space, filesystem utilization, and disk usage of the fax database. If the utilization exceeds or equals a preset alarm limit, you are notified.

System

This option allows you to start or stop the system. To stop the system, you can perform either a courtesy shutdown or a force shutdown.

System start You can start the system only if the current status is stopped (non-operational). If you try to start the system when it is currently running or faulty, a pop-up window appears and informs you that the system is currently running or faulty, whatever the case may be.

Courtesy shutdown A courtesy shutdown blocks any attempts to reserve modems and prevents any more scheduled (Callback) faxes from being sent. The fax system is allowed to complete sending/receiving the faxes currently in progress. When all ports go idle, the fax system is brought down. Shutting down the fax system does not affect Meridian IVR calls that do not use fax, and those calls that try to use fax receive an error code indicating that the fax system is non-operational.

Force shutdown A force system shutdown stops all fax transmissions/receptions in progress and blocks any further attempts to send or receive faxes. Any Meridian IVR application that has previously reserved a fax modem loses that reservation. When a Meridian IVR application that reserved a modem tries to use that modem, it receives an error message indicating that the operation cannot be performed. A Force system shutdown preserves all logs that are generated during the shutdown and can override an in-progress courtesy shutdown.

Admin

This option allows you to set up the Meridian IVR Fax Response system parameters.

System Parameters The parameters are stored in a defaults file that is set up when you install the system. This option allows you to modify the parameters, or reset them to their default values. For a description of each parameter, refer to the section "System parameters" on page 5-7.

Setting up the system

The following procedures tend to be performed only when installing or updating the system.

Starting the fax system

You need to start the system while initially setting up the system. You may need to start the system at other times if you have stopped it to recover from a faulty condition, or if you stopped it for another reason.

Procedure 5-2
Starting the fax system

1 In the Meridian IVR Fax Response Main menu, click on the System Administration icon with the left mouse button to access the pull-down menu.

2 Click on System administration with the left mouse button.

The window frame for the Meridian IVR Fax Response System Administration window appears.

3 Move the mouse to place the window frame to a suitable place on the desktop, then click on the left mouse button to open the window (see Figure 5-2).

4 Click on System with the left mouse button to access the pull-down menu.

5 Click on System start.

When the system starts, a validation dialog box appears indicating that the system is fully operational.

6 Click on OK with the left mouse button.

The System Administration menu appears.

Your fax system is now fully operational.

Stopping the fax system

You can stop the system for maintenance or when a status query shows the system is only partially operational.

Your two options for stopping the system are courtesy and forced shutdown.

Procedure 5-3
Performing a courtesy shutdown

1 In the Meridian IVR Fax Response Main menu, click on the System Administration icon with the left mouse button to access the pull-down menu.

2 Click on System administration with the left mouse button.

The window frame for the Meridian IVR Fax Response System Administration window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-2).

4 Click on System with the left mouse button to access the pull-down menu.

5 Click on Courtesy shutdown with the left mouse button.

A dialog box appears indicating that the courtesy shutdown is in progress and that you should wait. Once the shutdown is finished, the box is removed, and another one appears to indicate that the system is stopped.

If the system is unable to stop, a dialog box appears to explain why.

6 Click on OK with the left mouse button.

The system takes you back to the Meridian IVR Fax Response System Administration window.

Procedure 5-4
Stopping the system forcefully

1 In the Meridian IVR Fax Response Main menu, click on the System Administration icon with the left mouse button to access the pull-down menu.

2 Click on System administration with the left mouse button.

The window frame for the Meridian IVR Fax Response System Administration window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-2).

4 Click on System with the left mouse button to access the pull-down menu.

5 Click on Force shutdown with the left mouse button.

A dialog box appears indicating that the force shutdown is in progress and that you should wait. Once the shutdown is finished, the box is removed, and another one appears to indicate that the system is stopped.

If the system is unable to stop, a dialog box appears to explain why.

6 Click on OK with the left mouse button.

The system takes you back to the Meridian IVR Fax Response System Administration window.

System parameters

You can specify system parameters by using new values or by setting the parameters to the system default values. Once you have set the parameters, restart the system to set the values. We recommend that you perform a courtesy shutdown to avoid interrupting faxes already in progress.

The parameters for the fields are described with their default values:

Fax Response data directory name The default directory where faxes are stored. The default is “/u/fax/fax_data”.

Default fax resolution Two choices for document resolution: “standard” or “fine”. The default setting is “fine”.

Max number of pages to receive Integer value with default setting of 20.

Default number of callback attempts Integer value with default setting of 5.

Number of fax modems in system (read-only) Read-only integer value. Set to the number of ports purchased by the customer. This is the maximum number of ports for which the system is provisioned, not the physical number of modems.

Default fax document paper size The default paper sizes are

- NA_Std (North American standard size)—8.5 x 11 inches (215 x 280 mm)
- A4 (Europe)—8.28 x 11.69 inches (210 x 297 mm)

Total disk utilization alarm threshold (%) The percentage that the fax storage file system becomes full before a warning is posted in this window. The alarm threshold tells you whenever disk usage exceeds the alarm threshold. This helps you to forecast your disk space requirements.

If the alarm threshold is exceeded, the fax system prevents Meridian IVR applications from using CFAX to send faxes, and from using FRCV to receive faxes.

Notes:

1 This percentage does not apply to the entire disk usage of the system. Rather, it applies only to the file system on which the fax data currently resides.

2 The default value of the disk utilization alarm threshold is 70 percent.

Default reserve same call fax modem wait time (seconds) The number of seconds the application waits for a modem to become available before it returns a failure. The default setting is 10 seconds. There is no maximum value for this parameter.

Maximum number of fax pages to transmit Integer value with default setting of 20.

Default callback retry interval (minutes) Amount of time between attempts to send a fax (default value). The default setting is five seconds. It can be overridden on a per-fax basis.

Procedure 5-5
Specifying parameter settings

1 In the Meridian IVR Fax Response main menu, click on the System Administration icon with the left mouse button to access the pull-down menu.

2 Click on System administration with the left mouse button.

The window frame for the Meridian IVR Fax Response System Administration window appears.

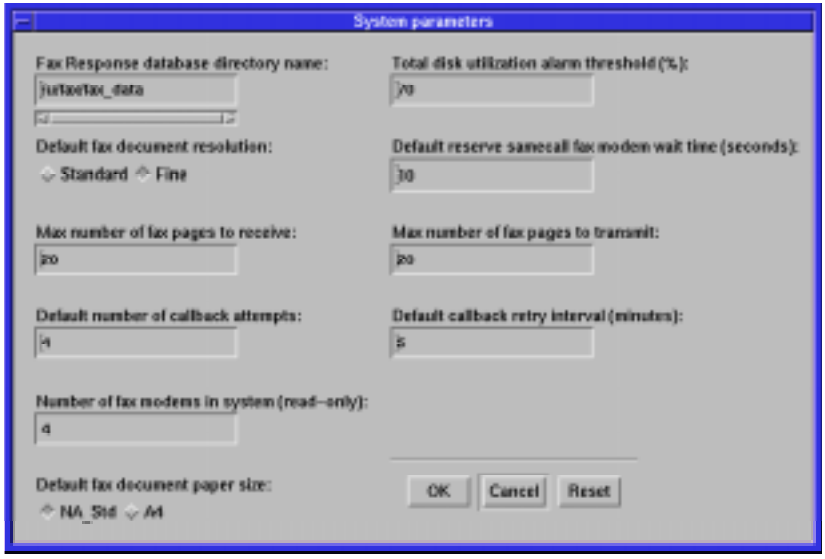
3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-2).

4 Click on Admin with the left mouse button to access the pull-down menu.

5 Click on System parameters.

This displays the window where you can modify system parameters (see Figure 5-3).

Figure 5-3
System parameter fields



6 Point to the parameter box that you want to change, click on the box with the left mouse button, and type in the new parameter.

7 Click on OK with the left mouse button to save new information.

To cancel your changes, click on Cancel.

To reset factory default settings, click on Reset.

The system returns to the Meridian IVR Fax Response System Administration window.

Performing basic administration tasks

Querying the system

You can check the fax system's operating status if you suspect that something is wrong, or when it is necessary to first know the status before performing a certain function.

System status is described as any of the following conditions:

Fully operational This means that all system parts are running.

Non-operational This means that all servers (log, fax, and callback) are not running. You are prompted to start the system.

Faulty This means that one server or more is not running. You are prompted to stop the system.

Procedure 5-6
Checking the system's status

1 In the Meridian IVR Fax Response main menu, click on the System Administration icon with the left mouse button to access the pull-down menu.

2 Click on System administration with the left mouse button.

The window frame for the Meridian IVR Fax Response System Administration window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-2).

4 Click on Query with the left mouse button to access the Query pull-down menu.

5 Click on System Status with the left mouse button.

The system displays a window that indicates whether the system is fully, partially, or non-operational.

6 Click on OK with the left mouse button.

The system returns to the Meridian IVR Fax Response System Administration window.

If the status is “System stopped: non-operational, please restart the system”, click on System with the left mouse button, then select System start to restart the system. When the system tells you that it has started, click on OK with the left mouse button.

If the status is “System faulty: partially operational, please stop the system”, click on System with the left mouse button, then select Courtesy shutdown to stop the system without interrupting current faxes, or Force shutdown to stop the system and interrupt current faxes. When the system tells you that it has stopped, click on OK with the left mouse button.

Refer to Procedure 5-2, Procedure 5-3, and Procedure 5-4 for stopping or starting the system.

Modifying the fax system parameters

You can modify the system parameters by using new values or by setting the parameters to the system default values. To modify the parameters, follow Procedure 5-5 on page 5-9. Once you have modified the system parameters, restart the system to set the new values. We recommend that you perform a courtesy shutdown to avoid interrupting faxes already in progress.

Fax disk usage

It is important that you check the fax disk usage to know ahead of time if the disk space is running out.

Fax data is stored in the user file system. When you check fax disk usage, you are given information pertaining to the user file system only, not usage for the entire disk.

If file system space utilisation exceeds the alarm limit, inform your database administrator or technical support group.

When you check disk usage, the following information is provided:

Total disk space The storage capacity (in kilobytes) of the file system on which the fax data resides.

Used disk space The amount of space on the disk, in kilobytes, that is already used.

Available disk space The available space left on the disk, in kilobytes.

Total disk utilization The percentage of the disk being used. You can draw your conclusion from this information if disk space is running out or not.

Fax Response database The space in kilobytes being occupied by the fax system's database.

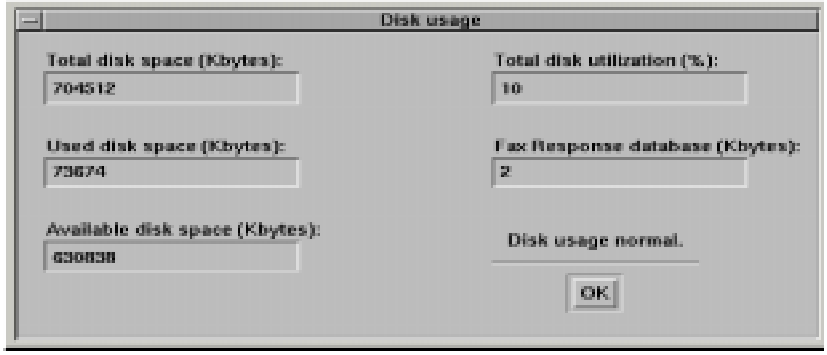
Disk usage message This message tells you if the disk usage exceeds the disk utilization alarm threshold (%). The message can be either "Disk usage normal" or "Disk usage exceeds alarm threshold".

Procedure 5-7
Checking disk usage

1. In the Meridian IVR Fax Response main menu, click on the System Administration icon with the left mouse button to access the pull-down menu.
2. Click on System administration with the left mouse button.

   The window frame for the Meridian IVR Fax Response System Administration window appears.
3. Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-2).
4. Click on Query with the left mouse button to access the Query pull-down menu.
5. Click on Fax database disk usage with the left mouse button to access the Disk usage window (see Figure 5-4).

Figure 5-4
Disk usage information window



6 After you have viewed the information, click on OK with the left mouse button to close the window.

The system returns to the Meridian IVR Fax Response System Administration window.

Note: The fax system automatically prevents attempts to receive or send faxes if the disk usage threshold limit is exceeded. This enables outbound faxes to continue to function.

Checking the fax system's version number

Knowing the system's version number is important, especially if you want to compare the features of one version to another, or plan to upgrade the system.

Procedure 5-8
Checking the system's version number

1 In the Meridian IVR Fax Response main menu, click on the System Administration icon with the left mouse button to access the pull-down menu.

2 Click on System administration with the left mouse button.

The window frame for the Meridian IVR Fax Response System Administration window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-2).

4 Click on Query with the left mouse button to access the Query pull-down menu.

5 Click on Software version with the left mouse button.

The system displays the Software version window as shown in Figure 5-5.

Figure 5-5
Meridian IVR System version number and date

If your fax system is not operational, a dialog box appears explaining that the version number is not available, and will not be available until the fax is running.

6 Click on OK with the left mouse button to close the window.

The system returns to the Meridian IVR Fax Response System Administration window.

Backing up/restoring your system

Backup and Restore functionalities are provided as part of the standard Meridian IVR backup and restore mechanism. Any backup that you perform of the entire Meridian IVR system includes Meridian IVR Fax Response.

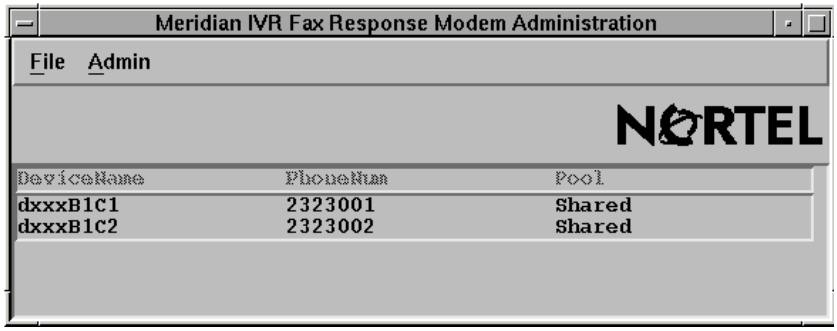
For more information on backing up and restoring your system, please refer to the *Meridian IVR System Administration Guide* (NTP 555-9001-300).

Modem administration functions

When you click on the Modem Administration icon, you access the Meridian IVR Fax Response Modem Administration window (see Figure 5-6). This

window has two menu options. The File option allows you to exit the Modem Administration window and return to the main menu. The Admin option allows you to add new modems, configure modems, and remove modems.

Figure 5-6
Meridian IVR Modem Administration menu



Adding modems

You can add modems to your system only if the maximum number of modems allowed by your system has not yet been reached. This value is based on the options you purchase.

Adding a new modem creates a new item in the system's modem database. The entry is added with new parameters. You are automatically placed in the "Configure modem" function that enables you to change or assign new modem data fields. When you configure a new modem, certain parameters are presented as defaults, and conventions for naming modems should be followed.

Modem naming conventions

All modems that you add to your system require a unique name that identifies both the fax modem port and the fax card used by that modem.

The convention for naming modems is the following:

dxxxBnCn

- dxxx indicates the modem name.
- Bn indicates the card number, where n equals 1 or 2.
- Cn indicates the channel number, where n equals 1–4.

Modem parameters

When you are adding a modem, you enter the information in the Modem Parameters window as shown in Figure 5-7. The parameters for this window are as follows:

Modem pool The pool to which the modem belongs. You can select either Same Call, Callback, or Shared.

Device name A unique identifier for a particular fax modem port on a particular fax card. To map a device name to a port, refer to Figure 3-1 in Chapter 3, “Installing Meridian IVR Fax Response”.

Station ID The station identifier (TSI) that is sent to the remote fax machine during any transmission/reception.

> ***Note:*** Although alphanumeric characters can be entered here, some fax machines do not support alpha characters.

Modem phone number The modem’s telephone number on the switch. Meridian IVR transfers all same call send and receive calls to the fax modem using this number.

> ***Note:*** Enter phone numbers without hyphens to avoid receiving error messages.

Procedure 5-9
Adding a modem

1. In the Meridian IVR Fax Response main menu, click on the Modem Administration icon with the left mouse button to get the pull-down menu.
2. Click on Modem administration with the left mouse button.

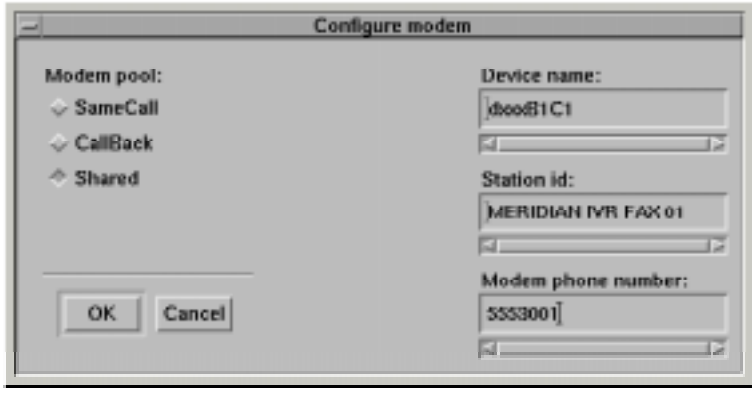
   (To save time, you can type <Ctrl+M>).

   The frame for the Meridian IVR Fax Response Modem Administration window appears.
3. Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-6).
4. Click on Admin with the left mouse button to get the Admin pull-down menu.

5 Click on Add new modem with the left mouse button, or type the accelerator <Ctrl+A>.

The Configure modem window appears (see Figure 5-7).

Figure 5-7
Configure modem window



6 Click on the appropriate pool type with the left mouse button, either Same Call, CallBack, or Shared.

7 Type the device name in the form dxxxB1C1.

8 Type the station ID.

9 Type the modem telephone number.

10 When you finish, click on OK with the left mouse button.

The Meridian IVR Fax Response Modem Administration window appears. The list of modems in this window now includes the new modem.

11 To exit, click on File, then Exit with the left mouse button, or type <Ctrl+E>.

Deleting modems

Once you delete the modem, you can remove it. You cannot delete a modem that is still enabled. If you try to do this, an error message window appears.

You can delete modems from the Meridian IVR Fax Response Fax Port Monitor window.

Note: Before you delete a modem, you must check that it is already disabled to avoid aborting a fax session. To do this, follow Procedure 5-12, "Viewing modem states".

Procedure 5-10
Deleting a modem

1 In the Meridian IVR Fax Response main menu, click on the Modem Administration icon with the left mouse button to access the pull-down menu.

2 Click on Admin with the left mouse button.

The frame for the Meridian IVR Fax Response Modem Administration window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-6).

4 Select the modem you want to delete by clicking on it with the left mouse button.

5 Click on Admin with the left mouse button to access the pull-down menu.

6 Click on Delete Modem.

A pop-up window appears and asks you if you are sure that you want to delete the modem.

7 Click on OK with the left mouse button.

(If you no longer want to delete the modem, click on Cancel with the left mouse button).

This deletes the modem from the list in the Meridian IVR Fax Response Modem Administration window.

8 To close this window, click on File, then Exit with the left mouse button, or type <Ctrl+E>.

Configuring modems

To configure your modem, you need to select the modem and access the modem configuration window. You can modify several fields in this window such as the device name, modem phone number, modem pool, and station ID. However, you cannot configure modems unless you disable them first.

Note: You can only access the modem administration window when the Fax system is operational. If you try to access this window when the Fax system is not operational, error message windows appear. These error message windows tell you that the modem administration window cannot open until the system is operational.

Procedure 5-11
Configuring a modem

1 In the Meridian IVR Fax Response main menu, click on the Modem Administration icon with the left mouse button to access the pull-down menu.

2 Click on Modem Administration with the left mouse button.

The frame for the Meridian IVR Fax Response Modem Administration window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-6).

4 Select the modem you want to change by clicking on it with the left mouse button.

5 Click on Admin with the left mouse button to get the Admin pull-down menu.

6 Click on Configure modem with the left mouse button.

The Configure modem window appears (see Figure 5-7).

7 Select the modem pool that you want by clicking on the appropriate push button with the left mouse button.

8 To change Station IDs, Device name, or Modem phone number, click on the appropriate box with the left mouse button, then type the information.

9 When you finish, save your entry by pointing and clicking on OK with the left mouse button.

The Modem Administration window appears.

10 To close this window, click on File, then Exit with the left mouse button, or type <Ctrl+E>.

Using the fax port monitor

The fax port monitor provides you with information on the states of all fax modem ports on the system. The monitor updates this information using a polling mechanism once every five seconds. With the monitor software, you can perform control functions that include enabling and disabling modems, and determining the state of modems on your system. The fax monitor shows you the state of each modem which could be any of the following. Some of the states may not be seen since the fax server is polled at five-second intervals for modem status information.

DISABLED The modem has not been enabled.

OUT OF SERVICE A transition state that only occurs when a port is being enabled or disabled.

If a port remains in this state for more than 10 seconds, it indicates that this port may have failed. If this occurs, disable the port and reenable it.

IDLE The modem is available for use.

RESERVED The channel has been reserved for use, but the software has not yet begun actively using the modem. This is typically because the software is dynamically generating the fax file from a generic file.

CONNECTING The modem is originating a Same Call Send to a remote fax machine.

ANSWERING The modem is answering a Same Call Receive.

ORIGINATING The modem is dialing a phone number for a callback fax.

SENDING-----> page xxx The modem is sending page xxx.

SENDING COMPLETE The modem has successfully sent all the pages of a document.

RECEIVING---> page xxx The modem is receiving page xxx.

RECEIVING COMPLETE The modem has successfully received all the pages of a document.

Procedure 5-12
Viewing modem states

1 In the Meridian IVR Fax Response main menu, click on the Modem Administration icon with the left mouse button to access the pull-down menu.

2 Click on the Fax port real-time monitor with the left mouse button.

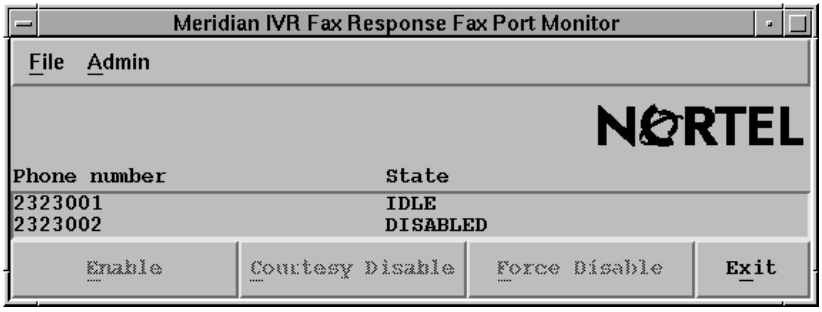
(To save time, you can type <Ctrl+F>.)

The frame for the Meridian IVR Fax Response Fax Port Monitor window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button.

The fax port monitor window appears (see Figure 5-8). It displays the phone number and the current state of the fax port.

Figure 5-8
Fax port real-time monitor window



4 To exit, click on File, then Exit with the left mouse button or type <Ctrl+X>.

The Modem Administration window appears.

Modem control functions

The fax port monitor enables you to perform three specific modem control functions.

Enable fax modem Enables the modem and makes it available for system use.

Courtesy disable modem Disables the modem once it has completed its current fax transmission or reception.

Force disable modem Aborts whatever operation is in progress and disables the modem.

A force disable modem overrides a courtesy disable modem in progress. In all other cases, attempting to initiate a function when one is already running results in an error message window indicating that the operation is already in progress.

Procedure 5-13
Enabling and disabling modems

1 In the Meridian IVR Fax Response main menu, click on the Modem Administration icon with the left mouse button to access the pull-down menu.

2 Click on Fax port real-time monitor with the left mouse button.

(To save time, you can type <Ctrl+F>.)

The frame for the Meridian IVR Fax Response Fax Port Monitor window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-8).

4 Select the modem you want to enable or disable by clicking on it with the left mouse button.

5 Click on Admin with the left mouse button to access the Admin pull-down menu.

The Admin menu allows you to either enable, courtesy disable, or force disable the modem.

6 Click on the choice you want.

A window appears for the function you select.

7 Click on the appropriate push buttons with the left mouse button.

8 When you finish, click on OK with the left mouse button.

The Modem Administration window appears.

9 To close this window, click on File, then Exit with the left mouse button, or type <Ctrl+X>.

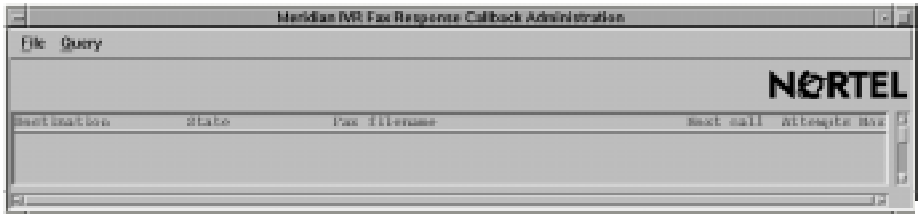
Administering the callback queue

The Callback queue administration window allows you to view the contents of the fax callback queue. You can scroll through all the entries in the queue and select entries to be deleted. The information displayed is a static image of what was in the queue at the time when you opened the window, or at the time when you requested a “refresh” of the information.

You must start the fax system before using this function. If the fax system is not running, an error message appears, and the program exits.

Figure 5-9 displays the Callback Administration window. Each entry in the queue provides information to the administrator such as the name of the fax being sent, its status in the queue, the fax destination, and the number of attempts already made to send the fax.

Figure 5-9
Callback Administration window



Callback queue information

All entries in the callback queue have the following information listed about them:

Destination The phone number to which the fax is being sent. Any phone number that has an asterisk beside it indicates that a fax cannot be sent immediately because another fax is already being sent to the phone number.

State Indicates the state of the fax entry. Possible states are

- Scheduled wait: Fax is still waiting to be sent. Faxes wait until their scheduled delivery time arrives.
- Modem wait: Scheduled delivery time for this fax has arrived, but no fax modems are available. Faxes are sent as soon as conditions permit.
- Re-scheduled: At least one unsuccessful attempt has been made to send the fax. The attempt failed, and the delivery time was rescheduled for a future attempt. Faxes wait for a new delivery time to arrive.

Fax Filename The name of the fax file being sent.

Next Call The scheduled time for the next attempt at sending the fax.

Attempts The number of attempts used so far to send the fax.

Maximum The maximum number of attempts permitted before the fax is reported as not having been sent.

The Callback queue administration window has a pull-down menu with the following options:

File The only valid choices are Delete Fax and Exit. Delete is only valid when a callback item has been selected and exists in the scheduled state. The Exit command returns you to the Meridian IVR Fax Response main menu.

Query This option retrieves the most recent information regarding the state of the queue. It only works when the system is operational.

Deleting faxes from the callback queue

The Delete Fax option allows you to remove faxes currently waiting in the queue for scheduled delivery.

The information shown in the queue may not be completely correct as the queue is only refreshed when either the window is active or a refresh has been requested. Even though a fax is listed as waiting, the fax may actually be processing currently.

If you attempt to delete a fax that is currently being processed, you receive an error message dialog box indicating that the operation failed because the fax was in use.

Procedure 5-14
Deleting faxes from the callback queue

1. In the Meridian IVR Fax Response main menu, click on the Callback Queue administration icon with the left mouse button to access the pull-down menu.
2. Click on callback administration with the left mouse button.

   The frame for the Meridian IVR Fax Response Callback Administration window appears.
3. Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-9).

   This window provides information on all of the faxes being sent.
4. Select the fax you want to delete by clicking on it with the left mouse button.

   The system deletes the fax from the callback queue.
5. To close the Callback Administration window, click on File, then Exit with the left mouse button, or type <Ctrl+E>.

Generating system reports

The Log Operational Measurement (OM) Reporting window allows you to view and print all logs generated by the fax system for the last seven days. In addition, you can view system reports on operational measurement data. The information can be displayed by specifying both the type of data and the range of time for which the information should be displayed.

You can print information to any printer on the system or save the report into any user-defined file.

The system provides you with an easy method to store, view, print, and delete the daily log information since each log is kept in its own separate log file. Seven of these files are maintained on the system at one time.

Each fax log file has a daily limit for how large it can grow. This limit is engineered to be large enough to accommodate a busy system. When a log file reaches the limit, the logging facilities disallow any further messages from being deposited to the log files. Rather than affecting system operation, this prevents a faulty system from logging an unlimited number of messages.

Figure 5-10 illustrates the Meridian IVR Fax Response Log/OM Reporting window. This window has two pull-down menu options.

Figure 5-10
Log/OM Reporting window

File

File allows you to exit the Log/OM reporting window.

In addition, it allows you to print and write to a file for the logs requested. Neither function becomes available until you have generated a log or OM report.

The print function enables you to print logs to a printer specified by you.

The write function allows you to take a displayed log or operational measurement report and write it to a file. You can specify the name of the file to which you send the report.

View

View displays a menu of Log/OM reports which you can generate. These reports include the System Event Log, the Call Detail Log, the Fax Modem Port Logs, and the All logs report.

System Event log

This System Event log, as shown in Figure 5-11, stores information about events like system start-up or shutdown that includes the date and time of the event, the type of event, and the explanatory event text. The following information is logged during a system event log:

Time Stamp The date and time of the event.

Type The type of system event log (see below for types).

Trace Level A value used strictly for debug purposes. It is set at 0 on a production system.

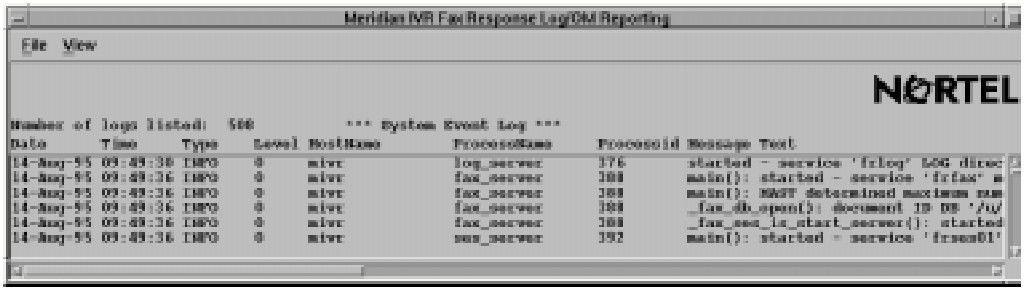
Host Name Name of the Meridian IVR host (UNIX system) on which the process is running.

Process Name Name of the process that generated the event (one of fax_server, ses_server, cal_server, frusr, or dcat).

Process ID UNIX ID of the process (Meridian IVR Fax Response) that generated the event.

Text Explanatory event text.

Figure 5-11
System Event log



The system event log type could be one of the following:

Information Indicates a noteworthy occurrence in Meridian IVR Fax Response. The operation is not affected, and no operator intervention is required (that is, a server has started or shut down).

Warning Indicates a potentially dangerous occurrence in Meridian IVR Fax Response. The operation of the system may be affected and operator intervention may be required (that is, a server is unable to open a fax file).

Error Indicates a fatal error in Meridian IVR Fax Response. The operation is affected, and operator intervention may be required (for example, a fax failed to be sent, or a port has become faulty).

Debug Used only in the development versions of Meridian IVR Fax Response. Debug enables the fax process to output debugging information to the log file.

Fax Call Detail log

The Fax Call Detail log records information regarding each fax that is sent or received (see Figure 5-12). Information logged includes the following:

Time stamp Date and time of the event.

Call type (ClTyp) Indicates if the fax was a same call fax or a callback fax.

Phone Number The phone number of the remote fax.

Number of attempts (Rtry) Indicates how many times the callback server tries to send a fax.

Status (Result) Indicates is the fax was successfully sent or received, and if not, the reason for the failure.

Number of pages okay (PgT) Indicates the last sent or received page number before the failure. In the success case, this number should equal the total number of pages.

Number of pages in document (Tot) Total number of pages in the document.

Connect time (ConTm) Indicates the time from when the remote fax machine answered the call to the time the last page of the document was sent. For a received fax, it indicates the time from when the modem went off hook to the time the last page was received.

Bytes (Bytes Tr) The number of bytes sent or received.

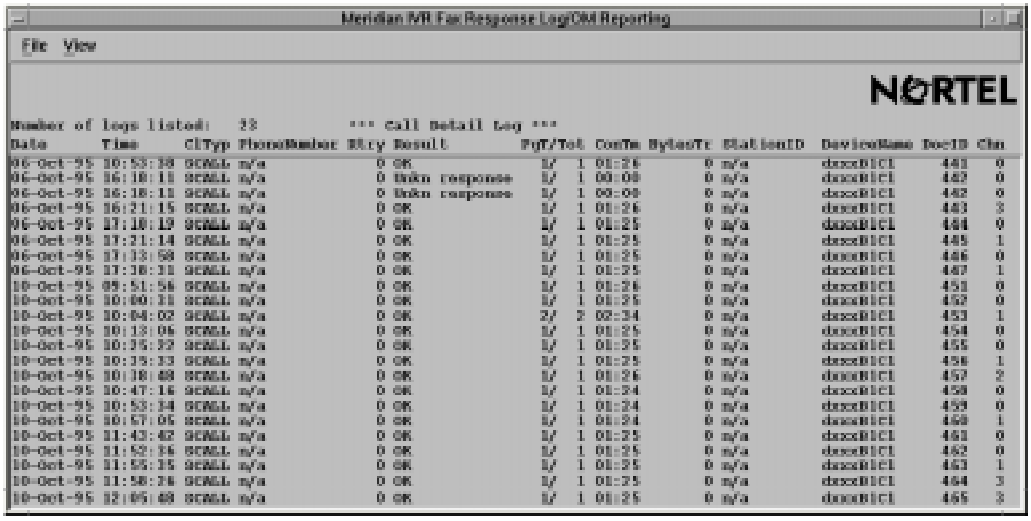
Remote Station ID Station ID of the remote fax.

Fax modem device name Path name of the device connected to the fax modem.

Document ID Fax document ID sent or received.

Meridian IVR channel (Chn) The channel number of the Meridian IVR application that generated the log entry.

Figure 5-12
Fax Call Detail log



Fax Modem Port log

The Fax Modem Port log records changes in the state of the fax modem (see Figure 5-13). Information logged includes the following:

Time stamp Date and time and of the event.

Phone number Phone number of the remote fax.

Type (Session status) Indicates events and state changes. For more information, refer to "Events and state changes" on page 5-30.

Status (RxTx) Indicates if the fax was successfully sent or received.

Fax document resolution (Resn) Resolution type of the fax document, either standard (204 x 98) or fine (204 x 196).

Current page in document (Page) The current page being sent or received.

Number of pages in document (Totl) The total number of pages in the document.

On Hook Indicates whether the modem is on hook or off hook (that is, answering a call).

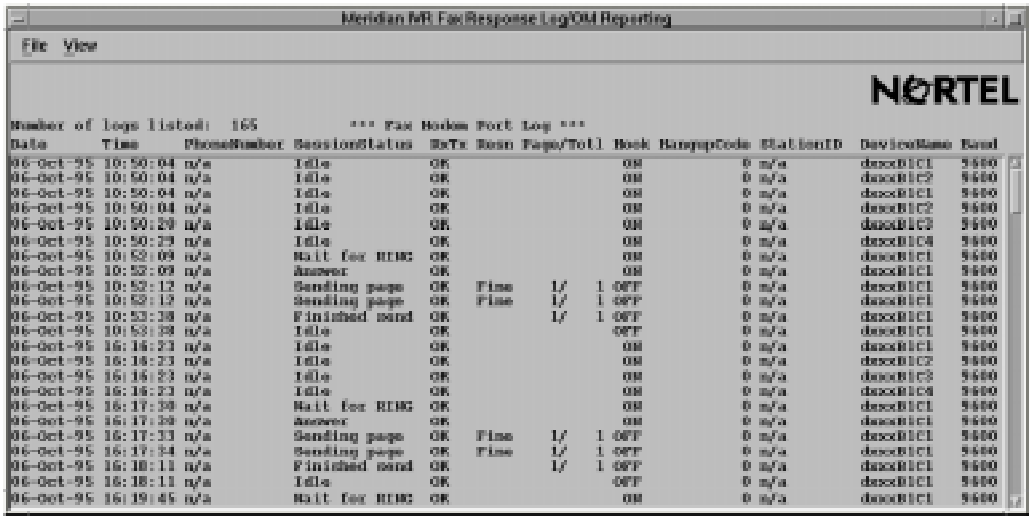
Hang-up status This code indicates if a fax was successfully sent or received.

Remote station ID Station ID of the remote fax.

Fax modem device name Path name of the device connected to the fax modem.

Modem baud rate Baud rate of the modem.

Figure 5-13
Fax Modem Port log



Events and state changes

The logged fax modem state changes include the following:

Faulty An operation has failed on a modem causing the modem to be taken out of service.

Disabled The modem was disabled from an administrative interface.

Idle The modem is available for use after completing the current operation.

Originating The modem is setting up to send a same call fax.

Wait for RING The modem is waiting for a ring indication.

Answer The modem was in the Wait Ring state, received a RING indication, and took the phone off the hook.

Receiving page The modem has received a page from the remote fax machine. The page number, number of bytes of fax page data, resolution of the fax page data, receive time, Meridian IVR application ID, Meridian IVR channel, and fax document ID are all logged.

Finished recv The modem has received all pages from the remote fax machine and has disconnected. The total number of pages received, the total number of bytes, the total receive time in seconds, Meridian IVR application ID, the Meridian IVR channel, and the fax document are all logged. The modem enters the Idle state.

Dial The modem takes the phone off the hook and dials the phone number of a remote fax machine. The phone number is logged.

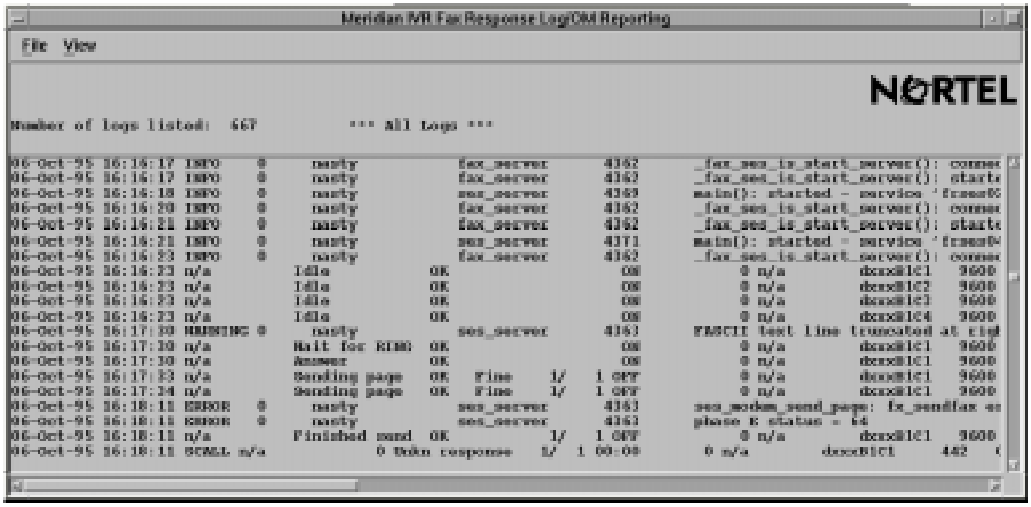
Sending page The modem has sent a page to the remote fax machine. The page number, the number of bytes of fax page data, the resolution of the fax page data, and the send time in seconds are all logged.

Finished send The modem has sent all pages to the remote fax machine and has disconnected. The total number of pages sent, the total number of bytes sent, the total send time in seconds, the Meridian IVR application ID, the Meridian IVR channel, and the fax document ID are all logged. The modem enters an Idle state.

All logs

The All Logs option generates a log that includes all system events, port events and fax calls for the period of time you specify (see Figure 5-14).

Figure 5-14
All Logs report



Viewing and printing logs

You can view the contents of a log, then print it, simply by selecting the log type and a range of time on the log. This range of time (or start and stop time) enables you to view or print only the parts of the log you want to see.

To print logs, you need to view them first. You can view one log at a time, or view all logs at the same time.

Procedure 5-15
Viewing a log

1 In the Meridian IVR Fax Response main menu, click on the Log/OM Reporting icon with the left mouse button to access the pull-down menu.

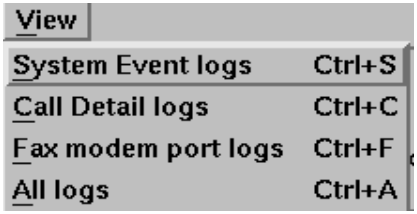
2 Click on Log/OM reporting with the left mouse button.

The frame for the Meridian IVR Fax Response Log/OM Reporting window appears.

3 Move the mouse to place the window frame in a suitable location on the desktop, then click on the left mouse button to open the window (see Figure 5-10).

4 On the Log/OM Reporting window, click on View with the left mouse button to access the pull-down menu (see Figure 5-15).

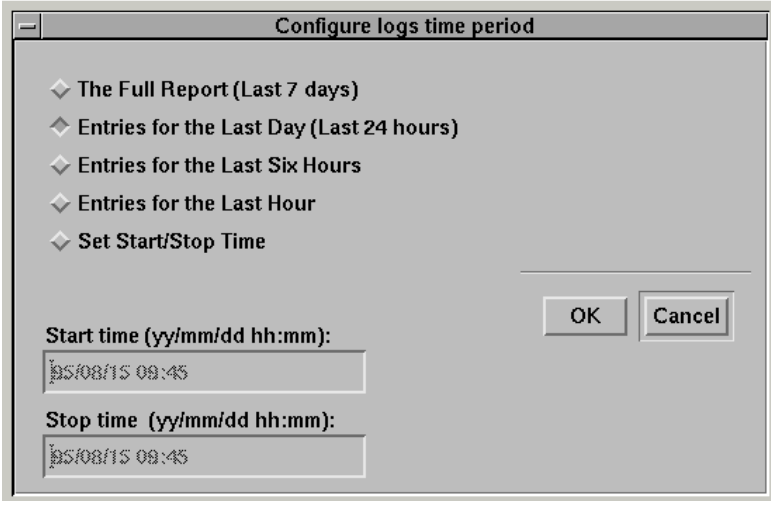
Figure 5-15
Log/OM Reporting View menu



5 Click on the menu item of your choice.

The Configure Logs Time Period window appears regardless of which log report you select (see Figure 5-16).

Figure 5-16
Configure logs time period window



6 Click on the date and time range for the report you select with the left mouse button. The default is the full seven-day log report.

7 After specifying the report type and the date and time range, click on OK with the left mouse button.

The Log/OM reporting window appears with all the log entries for the specified date and time.

8 To close the Log/OM reporting window, click on File, then Exit with the left mouse button, or type <Ctrl+E>.

Procedure 5-16
Printing logs

1 Follow steps 1 to 3 in Procedure 5-15 to retrieve the Meridian IVR Fax Response Log/OM Reporting window.

2 After you retrieve the Log/OM Reporting window, click on File, then Print with the left mouse button.

After you have printed the log, you can view and select another log, or exit the Log/OM Reporting window.

3 To exit this window, click on File, then Exit with the left mouse button, or type <Ctrl+E>.

Chapter 6: Troubleshooting your system

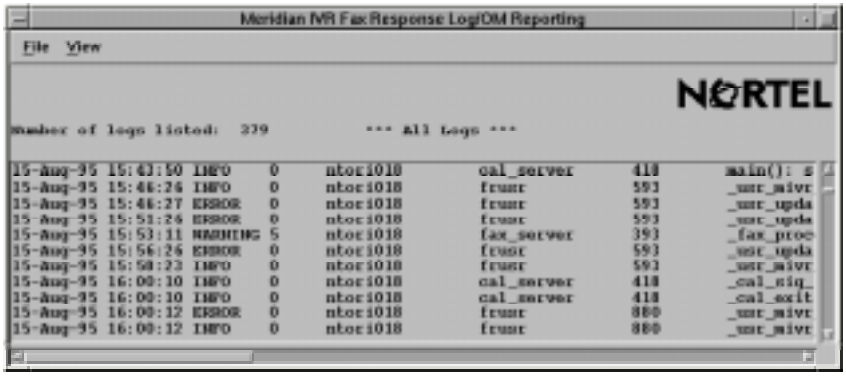
This chapter lists all the warning and error messages for your Meridian IVR Fax Response system. The messages are divided first by type, then by server, and finally by name string.

The messages for Meridian IVR Fax Response are split into two main groups: error messages and warning messages. Within these groups, the messages are further subdivided according to the different servers—namely fax, cal, and ses.

Both types of messages for Meridian IVR Fax Response have strings in the "printf" style format. These error and warning strings contain additional information to indicate whether a %d or %s is found. When an "error number" is supplied for a %d, the error is a UNIX error number. When an "error string" is supplied for %s, it is the UNIX error string.

Figure 6-1 illustrates the system events log. The fields include the date, time, type of information, host name, process name, process ID number, message text, and the trace level. The trace level can have any value from 0 to 99. It basically determines how much information is logged (the higher the value, the more the information).

Figure 6-1
Error text



The types of information include ERROR, WARNING, and INFO messages. An ERROR message indicates that an error has occurred during an operation. A WARNING message indicates that the system detected a potential error condition. The system continues to function but has encountered a difficulty; for example, a modem that was reserved for more than three minutes was automatically released.

This guide documents only the ERROR and WARNING messages for the fax, cal and ses servers. While INFO messages are important, they do not indicate a failure condition. For example, if you disable a port, the system will generate a message indicating that the port is disabled.

Beneath each server heading are listed the name strings for the types of error and warning messages, and the page numbers on which they are found. This will enable you to find the information you require quickly and easily.

Each message entry lists the following:

Message or string	Characters enclosed in quotation marks. This signifies the error that occurred.
Meaning	Explanation of the error or warning.
Impact	Impact of the error or warning.
Action to take	What you must do to correct the problem.

Fax server error messages

The following messages appear on the fax server. The list provides the meaning for each message and suggests action to take. The message types are as follows:

fax_server messages

“fax_server: main(): open() of stdin on ‘/dev/null’ failed, errno %d ‘%s’\n”, error number, error string

Meaning: During start-up, the server failed to redirect standard input from /dev/null.

Impact: The fax system does not start up.

Action to take: Call the appropriate support organization.

“fax_ server: main(): open() of stdout on ‘/dev/null’ failed, errno %d ‘%s'\n”, error number, error string

Meaning: During start-up, the server failed to redirect standard output to /dev/null.

Impact: The fax system does not start up.

Action to take: Call the appropriate support organization.

“fax_server: main(): open() of stderr on ‘/dev/null’ failed, errno %d ‘%s’\n”, error number, error string

Meaning: During start-up, the server failed to redirect standard error to /dev/null.

Impact: The fax system does not start up.

Action to take: Call the appropriate support organization.

main messages

“main(): tcp_create_listen_socket(service='%s') failed, errno %d '%s'\n”, service port, error number, error string

Meaning: During start-up, the server could not create a socket on which to listen for client requests.

Impact: The fax system does not start up.

Action to take: Another application on the system may have used the specified socket. Ensure that no software added by a VAD on the system uses the “fax” TCP/IP sockets. You can verify this by looking at the /etc/services file. If a clash exists, change the port number of the fax server.

> **ATTENTION!**
>
> Only experienced UNIX administrators should perform this task.

“main(): select(num_fd=%d, timeout=%d, %d)) failed, errno %d '%s'\n”, number of file descriptions, timeout, error number, error string

Meaning: The server was waiting to do something when it encountered an error in the select statement.

Impact: The fax system undergoes a force shutdown, immediately terminating all in-progress fax operations.

Action to take: Call the appropriate support organization.

“main(): invalid fax_socket type (%d) on socket %d\n”, socket type, socket number

Meaning: The server encountered a request on a TCP/IP socket but does not understand from where the request is coming.

Impact The fax system undergoes a force shutdown, immediately terminating all in-progress fax operations.

Action to take: Call the appropriate support organization.

fax_db_open messages

“ _fax_db_open(): can't open FAX modem DB '%s', errno %d '%s'\n”, modem db, error number, error string

Meaning: The fax server could not open the modem database during initialization.

Impact: The fax system does not start up.

Action to take: Probable causes are missing or corrupted modem configuration files. Check if the directory /u/fax/db and the file modem.db exist and are readable. If the files are missing or corrupted, go to a backup tape and restore them.

“ _fax_db_open(): malloc() failed for fax_modem entry #%d\n”, Modem number

Meaning: The fax server could not allocate memory for its internal data structure to hold the modem configuration data.

Impact: The fax system does not start up.

Action to take: Determine if all system memory has been used up. This can occur if user functions or other processes added to the system by a VAD use up all available system memory and swap memory. Reengineer the system so that it does not use all of the available memory, and try again.

" _fax_db_open(): can't open document ID DB '%s', errno %d '%s'\n", Document ID DB, error number, error string

Meaning: The fax server could not open the document ID number database.

Impact: The fax system does not start up.

Action to take: Probable causes are missing or corrupted modem configuration files. Check if the directory /u/fax/db and the file doc_id.db exist and are readable. If the files are missing or corrupt, go to a backup tape and restore them.

"_fax_db_open(): malloc() failed for fax_modem entry #%d\n", Modem number

Meaning: The fax server could not allocate memory for its internal data structure to hold the modem configuration data.

Impact: The fax system does not start up.

Action to take: Determine if all system memory has been used up. This can occur if user functions or other processes added to the system by a VAD use up all available system memory and swap memory. Reengineer the system so that it does not use all of the available memory, and try again.

"_fax_db_open(): can't open default DB '%s', errno %d '%s'\n", Defaults DB, error number, error string

Meaning: The fax server could not open the system default configuration file.

Impact: The fax system does not start up.

Action to take: Probable causes are missing or corrupted modem configuration files. Check that the directory /u/fax/db and the file default.db exist and are readable. If the files are missing or corrupted, go to a backup tape and restore them.

"_fax_db_open(): malloc() failed for _fax_default entry\n"

Meaning: The fax server could not allocate memory for system default configuration information.

Impact: The fax system does not start up.

Action to take: Determine if all system memory has been used up. This can occur if user functions or other processes added to the system by a VAD use up all available system memory and swap memory. Reengineer the system so that it does not use all of the available memory, and try again.

fax_add_client time-out messages

"_fax_add_client_time-out():malloc() failed for _fax_time-out_list entry\n"

Meaning: The fax server could not allocate memory to add a time-out entry on behalf of a client to its time-out list.

Impact: The fax system immediately shuts down.

Action to take: Determine if all system memory has been used up. This can occur if user functions or other processes added to the system by a VAD use up all available system memory and swap memory. Reengineer the system so that it does not use all of the available memory, and try again.

fax_modem_db_fd_sync messages

"_fax_modem_db_fd_sync(): fopen() of temporary file %s failed, errno %d '%s'\n", filename, error number, error string

Meaning: An attempt was made to update the modem database, and the new information could not be written to disk.

Impact: All modem configuration changes are lost, and the fax system is shut down.

Action to take: Ensure that enough disk space is available. Probable cause is that the system is running out of disk space.

"_fax_modem_db_fd_sync(): unlink() of file '%s' failed, errno %d '%s' \n", filename, error number, error string

Meaning: An attempt was made to update the modem database, and the update could not be completed.

Impact: All requested modem configuration changes are lost, and the fax system shuts down.

Action to take: None.

"_fax_modem_db_fd_sync(): link of file '%s' to '%s' failed, errno %d '%s'\n", filename 1, filename 2, error number, error string

Meaning: An attempt was made to update the modem database, and the update could not be completed.

Impact: Although the requested changes were written to disk, they were not activated in the modem database. The fax system is shut down and cannot be started up until the modem database is cleaned up.

Action to take: Resolve the reason for the failure to create the link. Probable causes are running out of disk space or inodes on the file system. Once the problem is resolved, issue the UNIX command cd /u/fax/db followed by a carriage return. Then type the second command, "**mv X Y**", where X is the temporary modem database file described in the error message, and Y is "modem.db".

fax_process_request messages

"_fax_process_request_modem_info_put(): linked list error\n"

Meaning: There was an internal error in the way that the fax server manages modem database information that has been found.

Impact: The requested changes are lost.

Action to take: Restart the fax system and try again. If the problem persists, call support indicating that a possible modem data corruption problem exists.

"_fax_process_request_modem_info_append(): malloc() failed for fax_modem entry\n"

Meaning: The fax server could not allocate memory to add a new modem to its configuration.

Impact: The fax system immediately shuts down.

Action to take: Determine if all system memory has been used up. This can occur if user functions or other processes added to the system by a VAD use up all available system memory and swap memory. Reengineer the system so that it does not use all of the available memory, and try again.

fax_client_reply_hold_done messages

"_fax_client_reply_hold_done(): tcp_write() returned %d, errno %d '%s' \n", return value, error number, error string

Meaning: The fax server tried to reply to a request initiated by a client, and the reply could not be sent.

Impact: The client will never receive the request. All processing continues as if the request had been successfully sent. The client, on the other hand, will wait indefinitely for the request.

Action to take: Probable cause is that the client was killed before the reply could be sent. Unexpected client deaths should only occur if a process is killed manually (using kill signal), or if a bug exists in the program. Check for "core" files on the system, and if one exists that matches the time of the error message, save the core file and inform support.

Cal server specific error messages

The following messages appear on the cal server. The list provides the meaning for each message and suggests action to take. The message types listed are as follows:

cal_server messages

"cal_server: main(): open() of stdin on '/dev/null' failed, errno %d '%s'\n", error number, error string

Meaning: During start-up, the server failed to redirect standard input from /dev/nul.

Impact: The fax system does not start up.

Action to take: Call the appropriate support organization.

"cal_server: main(): open() of stdout on '/dev/null' failed, errno %d '%s'\n", error number, error string

Meaning: During start-up, the server failed to redirect standard output to /dev/null.

Impact: The fax system does not start up.

Action to take: Call the appropriate support organization.

"cal_server: main(): open() of stderr on '/dev/null' failed, errno %d '%s'\n", error number, error string

Meaning: During start-up, the server failed to redirect standard error to /dev/null.

Impact: The fax system does not start up.

Action to take: Call the appropriate support organization.

cal_server main messages

“main(): fax_connect(host='%s', service='%s') failed, errno %d '%s'\n”, hostname, service port, error number, error string

Meaning: The Callback server could not connect to the fax server during its start-up operation.

Impact: The Callback server terminates, and the fax system is not started.

Action to take: Possible cause is an inability to open any more files because the system maximum file limit has been reached. This can occur when additional software added to the Meridian IVR Fax Response system opens and keeps open numerous files. Try disabling all third-party software added to the system, and try starting FAX again.

“main(): couldn’t get fax data directory\n”

Meaning: The Callback server could not retrieve the fax data directory name from the fax server on start up.

Impact: The fax system does not start up.

Action to take: There is probably a problem with the fax server. Check for fax error messages.

“main(): invalid cal_socket_type (%d) on socket %d\n”, socket type, socket number

Meaning: The server encountered a request on a TCP/IP socket but does not understand from whom the request is coming.

Impact: The Callback server immediately shuts down. All in-progress Callback send operations are allowed to complete, but the server loses track of whether or not they were successfully sent. As a result, they are resent when the Callback server restarts. Same Call operations continue as normal, but no more Callback operations are supported.

Action to take: This is likely an internal error with the fax software. Recovery is accomplished by stopping the system and restarting it. Report this error to support.

“main(): tcp_create_listen_socket(service='%s') failed, errno %d '%s'\n”, service port, error number, error string

Meaning: During start-up, the server could not create a socket on which to listen for client requests.

Impact: The fax system does not start up.

Action to take: Another application on the system may have used the specified socket. Ensure that no software added by a VAD on the system uses the “fax” TCP/IP sockets which can be determined by looking at the /etc/services file. If a clash exists, change the port number of the fax server.

> **ATTENTION!**
>
> Only experienced UNIX administrators should perform this task.

cal_db_open messages

“_cal_db_open(): can’t open queue DB directory ‘%s’, errno %d '%s'\n”, directory name, error number, error string

Meaning: The Callback queue directory could not be opened during start-up.

Impact: The Callback server immediately shuts down, and the system comes up.

Action to take: The probable cause is a missing queue directory. Check that the directory /u/fax/queue exists and is readable. If it does not exist, go to a backup and restore this directory.

Note: Restoring this directory from a backup restores all of the references to queued documents that are normally stored in this directory when you make the backup. When the system starts up, it attempts to send these documents. Those documents that actually still reside on the system (that is, those that have not been deleted) are resent. All other documents fail transmission and are removed from the Callback queue.

"_cal_db_open(): malloc(%d) for document id %d failed\n", document size, document id

Meaning: An attempt was made to queue a document, but insufficient memory was available to honor the request.

Impact: The Callback server immediately shuts down. All in-progress Callback send operations are allowed to complete, but the server loses track of whether or not they were successfully sent. As a result, they are resent when the Callback server restarts. Same Call operations continue as normal, but no more Callback operations are supported.

Action to take: Determine if all system memory has been used up. This can occur if user functions or other processes added to the system by a VAD use up all available system memory and swap memory. Reengineer the system so that it does not use all of the available memory, and try again.

cal_queue_item_write messages

"_cal_queue_item_write(): error opening file '%s', errno %d '%s'\n", filename, error number, error string

Meaning: An attempt to queue a document failed because an entry in the queue directory could not be created.

Impact: The item is not queued, and the Callback server immediately shuts down. All in-progress Callback send operations are allowed to complete, but the server loses track of whether or not they were successfully sent. As a result, they are resent when the Callback server restarts. Same call operations continue as normal, but no more Callback operations are supported.

Action to take: Ensure that the queue directory exists and has permissions that allow the Callback server to write files into it. Shut down the fax, and restart it to try again. Try running the command cal_submit to manually test the submission feature.

Session server-specific error messages

The following messages appear on the session server. The list provides the meaning for each message and suggests action to take. The following message are types listed:

ses_server messages

“ses_server: main(): open() of stdin on ‘/dev/null’ failed, errno %d '%s'\n”, error number, error string

Meaning: During start-up, the server failed to redirect standard input from /dev/null.

Impact: The fax system does not start up.

Action to take: None.

ses_server: main(): open() of stdout on ‘/dev/null’ failed, errno %d '%s'\n”, error number, error string

Meaning: During start-up, the server failed to redirect standard output to /dev/null.

Impact: The fax system does not start up.

Action to take: None.

“ses_server: main(): open() of stderr on '/dev/null' failed, errno %d '%s'\n”, error number, error string

Meaning: During start-up, the server failed to redirect standard error to /dev/null.

Impact: The fax system does not start up.

Action to take: None.

“ses_server: main(): supplied FAX data base directory (%s) is bad, errno %d ‘%s’\n”, db directory, error number, error string

Meaning: The fax base directory name given to a session server is found to be either missing or not a valid directory.

Impact: The session server immediately shuts down, and modem service is not supplied on that port.

Action to take: Ensure that a valid fax data directory is configured in the fax administration screens. Enable the modems that failed to start up after the configuration changes are made.

main(): messages

“main(): select (num_fd=%d) failed, errno %d '%s'\n”, number of file descriptors, error number, error string

Meaning: The server was waiting to do something when an error was encountered in the select statement.

Impact: The session server immediately terminates.

Action to take: None.

“main(): tcp_create_listen_socket(service='%s') failed, errno %d '%s'\n”, service report, error number, error string

Meaning: During start-up, the server could not create a socket on which to listen for client requests.

Impact: The fax system does not start up.

Action to take: Another application on the system may have used the specified socket. Ensure that no software added by a VAD on the system uses the “fax” TCP/IP sockets which can be determined by looking at the /etc/services file. If a clash exists, change the port number of the fax server.

> **ATTENTION!**
>
> Only experienced UNIX administrators should perform this task.

“main(): tcp_accept_connection(_ses_listen_socket=%d) failed, errno %d '%s' \n”, socket number, error number, error string

Meaning: The session server established a socket on which it could talk to the fax server. When the fax server tried to establish a connection on the socket, the session server could not complete the connection.

Impact: The session server terminates.

Action to take: If the problem persists, disable the modem and call support.

“main(): dx_open(device='%s') failed, errno %d '%s'\n”, device name, error number, error string

Meaning: During start-up, the session server failed to establish a communications to the dialog fax card.

Impact: The session server is marked as faulty and cannot be used.

Action to take: The most likely problem is an invalid device name. Make sure that the device name is of the format dxxxB.C. where the first “.” is the board number, and the second “.” is the channel number. Both start at 1 and move up. Therefore, for an eight-channel system, the valid devices are dxxxB1C1, dxxxD1C2, dxxxB1C3, and dxxxB1C4 for board 1, and dxxxB2C1, dxxxB2C2, dxxxB2C3, and dxxxB2C4 for board 2.

“main(): Error: can't enable_modem_handler\n”

“main(): Error: sr_hold() failed\n”

“main(): Error: sr_release() failed\n”);

Meaning: A fatal error has occurred dealing with the dialog software controlling events and event handlers.

Impact: The program terminates.

Action to take: Disable the port and call support.

Failed to... messages

“Failed to delete user defined tones, error#%d (%s)\n”, error number, error string

Meaning: A problem has been encountered initializing a dialogic port.

Impact: The program terminates.

Action to take: Disable the port and call support.

“Failed to initialize PerfectCall Call Analysis, error#%d (%s)\n”, error number, error string

Meaning: A problem has been encountered initializing a dialogic port.

Impact: The program terminates.

Action to take: Disable the port and call support.

ses_process messages

“ses_process_abort_request(): ses_c2_modem_isinit() failed, errno %d '%s'\n”, error number, error string

Meaning: An attempt was made to reinitialize a modem but failed.

Impact: The modem is left in an unknown state and is probably unusable.

Action to take: Disable and reenable the modem.

“_ses process_modem_response(): invalid modem operation '%s' (%d)\n”, modem state, modem state number

Meaning: An invalid response to a modem operation was received.

Impact: The session server terminates.

Action to take: Disable the port and call support.

SES_REQUEST messages

"SES_REQUEST_SHUTDOWN_SERVER: Can't close Dialogic device. Error#%d - %s\n", error number, error string

Meaning: A shut-down was attempted, but the program could not properly close off the connection to the fax modem.

Impact: None.

Action to take: None.

"SES_REQUEST_SEND: Can't init fax to TX state, err#%d - %s\n", error number, error string

Meaning: A fax is about to be sent, but the Meridian IVR fax session could not be initialized into the transmitter state.

Impact: The fax is not successfully sent.

Action to take: Disable and reenable the port if this problem is occurring. If the problem recurs, call support.

"SES_REQUEST_RECEIVE: Can't set fax state to RX, error#%d - %s\n", error number, error string

Meaning: A fax is about to be received, but the Meridian IVR fax session could not be initialized into the receiver state.

Impact: The fax will probably not be successfully received.

Action to take: Disable and reenable the port if this problem is occurring. If the problem recurs, call support.

process_modem messages

"process_modem_response: SES_C2_ OP_WAIT_ATD_OK: unknown status returned by ATDX_CPTERM()\n"

Meaning: An attempt was made to initialize the modem for an incoming or outgoing call but failed.

Impact: The session fails, and subsequent use of this port will probably fail.

Action to take: Disable the port and call support.

"process_modem_response: SES_C2_OP_WAIT_ATD_OK: unknown status returned by ATDX_TERMMSK()\n"

Meaning: An unknown status code was returned from the modem.

Impact: Unknown.

Action to take: Disable the port and call support.

SES_C2_OP_WAIT messages

"SES_C2_OP_WAIT_RING: dx dial invocation error#%d: %s", error number, error string

Meaning: The port attempted to initiate an outdial but failed.

Impact: The fax is not sent.

Action to take: This problem should not occur in the field.

"SES_C2_OP_WAIT_RING: can't init fax to TX state, error#%d: %s", error number, error string

Meaning: A fax is about to be sent, but the Meridian IVR fax session could not be initialized into the transmitter state.

Impact: The fax is not successfully sent.

Action to take: Disable and reenable the port if this problem is occurring. If the problem recurs, call support.

ses_client_unsol_state messages

"_ses_client_unsol_state(): invalid modem operation '%s' (%d)\n", modem operation state, state number

Meaning: An invalid response to a modem operation was received.

Impact: The session server terminates.

Action to take: Disable the port and call support.

ses_modem messages

“ses_modem_send_page: fx_sendfax error#%d: %s”, error number, error string

Meaning: An attempt was made to initiate transmission of a fax page but failed.

Impact: Transmission of the remainder of the document is aborted.

Action to take: Determine why the transmission failed by examining the dialogic error number and string. Given the asynchronous nature of event checking, this problem should never occur in the field.

“_ses_modem_receive_page(): page %d page file '%s' in document file '%s': fx_rcvfax2 failed, error#%d - %s\n”, page number, page file name, document name, error number, error string

Meaning: An attempt was made to initiate reception of a fax page but failed.

Impact: Reception of the remainder of the document is aborted.

Action to take: Determine why the reception failed by examining the dialogic error number and string. Given the asynchronous nature of event checking, this problem should never occur in the field.

No current event... message

“No current event exists (we are in event handler, something wrong)!\n”

Meaning: The modem event handler was invoked, but no event is pending.

Impact: None. The error is ignored.

Action to take: None.

Fax server warning messages

The following warning messages appear on the fax server. The list provides the meaning for each message and suggests action to take. The following message types are listed:

fax_sig_term messages

"_fax_sig_term(): already shutting down \n"

Meaning: The fax server received a request to shut down, and it was already in the process of doing so.

Impact: None.

Action to take: None.

server termination messages

“Session server terminated PID =%d phone = %s state = %d\n”, process id, phone number, state

Meaning: A session server shut down due to a client request to either disable the port or to shut down the whole system.

Impact: None.

Action to take: None.

“Unexpected Session server termination PID = %d phone = %s state = %d\n”, process id, phone number, state

Meaning: A session shut down without being told to do so.

Impact: The session server is restarted automatically by fax server. Until it is successfully up and running, it does not handle any requests. If the server was processing a request at the time when it shut down, the processing may not get completed.

Action to take: Examine the log file for errors originating from the session server.

fax_process_client messages

“_fax_process_client_connection(): tcp_accept_connection (listen_socket=%d) failed, errno %d '%s'\n”, socket number, error number, error string

Meaning: A request to establish a connection with a client was made, but the attempt failed.The probable cause is that the client was killed before the connection could be established.

Impact: None to the fax server. The client that originated the request does not succeed to establish the connection.

Action to take: Examine the log file for errors originated from the client.

"_fax_process_client_connection():tcp_accept_connection(listen_socket=%d) returned fd %d which is >= FAX_MAX_SOCKET (%d)\n", socket number, file descriptor, maximum number of sockets

Meaning: A request to establish a connection with a client was made but cannot be honored because the maximum number of allowable connections to the server would be exceeded.

Impact: Close off some of the connections.

Action to take: This error should not occur under normal circumstances. It can occur if many fax port monitors are running and retaining connections to the fax server. Check that only those tasks that are needed are running. If the problem persists, issue the command ps -edalf >/tmp/problem.txt from a unix command line, and reset fax. Then call support and let them look at the results of the unix command that was run.

"_fax_process_client_request(): invalid client request type (%d) from client %d\n", request type, client number

Meaning: A request was received from a client, but it was not understood. This problem indicates an internal error in the fax software. This situation can happen if an application that has established a connection to the fax server initiates communications on the file descriptor returned from connect but without going through the fax APIS. This problem should not occur in the product because VADs are not given the ability to establish connections to the servers. The only software on the system today that establishes connections to the fax server are the graphical user interfaces, curses-based programs, and fax user function.

Impact: The application that generated the bogus request does not receive a reply.

Action to take: Call support if this problem occurs.

fax_process_time-out messages

"_fax_process_time-out(): invalid client request type '%s' (%d) for client %d\n", request type, request type number, client number

Meaning: The fax server encountered a time-out that should have been processed, but when it checked to see what kind of time-out it was and what should be done with it, the fax server could not recognize the type.

Impact: The time-out request is ignored.

Action to take: This problem should not occur in the product. Report this problem to the appropriate support organization.

fax_process_session messages

"_fax_process_session_message(): invalid SES server event type (%d)\n", event type number

Meaning: An event was received from one of the fax ports but could not be recognized.

Impact: The event is ignored. There is no other impact.

Action to take: This problem should not occur in the product. Report this problem to the appropriate support organization.

"_fax_process_session_reply(): SES server %d has no client for reply %d\n", session server number, reply number

Meaning: A request for some sort of action on a session server was initiated, but by the time the session server responded, there was no application left to handle the response. This can happen if the Meridian IVR fax user function is terminated for some reason while requests are pending.

Impact: The reply is discarded.

Action to take: This problem should not occur unless Meridian IVR applications are unloaded while faxes are processing. If it occurs at any other time, contact the appropriate support organization.

"_fax_process_session_reply(): SES server %d client %d not processing request: got reply %d\n", session server number, client number, reply number

Meaning: A message was received that should have been in response to a request for some sort of activity, but the system cannot determine who initiated the request.

Impact: The response is discarded.

Action to take: This problem should not occur. If it does, reset the fax system. If the problem occurs again, contact the appropriate support organization.

"_fax_process_session_reply(): SES server %d reply type %d but client expecting reply %d\n"

Meaning: A reply was received for a request initiated by a client, but it was the wrong kind of reply.

Impact: The reply is discarded. It is possible that the client, as a result, never receives an appropriate reply to the request initiated. This problem indicates an internal error in the fax server and/or in the session servers.

Action to take: Reset the system. Contact the appropriate support organization.

"_fax_process_session_reply(): SES server %d unexpected shut-down_server reply type %d, client %d expecting reply %d\n", reply type number, client number, reply number

"_fax_process_session_reply(): SES server %d unexpected want_event reply type %d expecting reply %d\n", reply type number, client number, reply number

"_fax_process_session_reply(): SES server %d unexpected call reply type %d expecting reply %d\n", reply type number, client number, reply number

"_fax_process_session_reply(): SES server %d unexpected reply type %d, client %d expecting reply %d\n", reply type number, client number, reply number

Meaning: A reply message to a request was received, but the fax server is not expecting this because it does not believe that it initiated the request.

Impact: The message is discarded.

Action to take: Report this problem to the appropriate support organization.

fax_ses_start messages

"_fax_ses_start_servers(): too many fax modems configured; all fax modems disabled until some are deleted\n"

Meaning: The fax system was started, but when it checked the modem database, it detected more than the maximum allowable number of modems in it. (The maximum allowable number is controlled by the keycode which represents the number purchased by the customer).

Impact: All fax ports are disabled.

Action to take: Delete some fax modems until the number configured is less than or equal to the number purchased. Once you have done this, you can enable the ports.

fax_db_open messages

"_fax_db_open(): document ID DB '%s' format error, document ID set to 0\n", document id db file

Meaning: A problem was detected with the document ID database which has a filename of /u/fax/db/doc id.db.

Impact: The document number is reset to zero.

Action to take: None required. The system continues to function normally.

"_fax_db_open(): missing the default_name field in record '%s'\n", default db file

"_fax_db_open(): missing the default_value field in record '%s'\n", default db file

Meaning: A record from the defaults database was read in but was not in the proper format. Either the name or the value was missing.

Impact: The line is discarded.

Action to take: Go to the system administration default parameters screen, and reconfigure the system default parameters. Then reset the fax system. If the problem recurs, contact the appropriate support organization.

fax_exit messages

"_fax_exit(): exitcode:%d socket:%d pid:%d. Abort failed\n", exit code, socket number, process id

"_fax_exit(): shut-down SES server on socket %d failed\n", socket number

"_fax_exit(): exitcode:%d socket:%d pid:%d. Kill failed\n", exit code, socket number, process id

Meaning: The fax server is exiting and is trying to shut down the fax ports. One of the ports failed to honor an abort request.

Impact: The fax server continues the shut-down procedure.

Action to take: When the shutdown is complete, you should kill any ses_server processes that may still be running, or get Nortel support to run the procedure.

Procedure 6-1
Killing ses-server processes

1 Go to a unix shell with root permissions.

2 Type the command "ps -ef | grep ses_server I grep -v grep".

3 You should make note of the first numeric value on each line displayed, and then enter the command "kill -9 value" once for every line that was displayed.

4 Type the command "ps -ef I grep ses_server I grep -v grep". Nothing should be displayed. If anything is displayed, then go to the fax administration screen and ensure that the fax system is shut down. Rerun this procedure. lf the validation on step 4 still fails, contact your support organization.

fax_modem_db messages

“_fax_modem_db_fd_is_get_next(): missing the is_configured field in record '%s'\n”, fax modem db file

“_fax_modem_db_fd_is_get_next(): format error for the is_configured field '%s’ in record '%s'\n”, is_configured value, fax modem db file

“_fax_modem_db_fd_is_get_next(): missing the is_enabled field in record '%s’\n”, fax modem db file

“_fax_modem_db_fd_is_get_next(): format error for the is_enabled field \%s’ in record '%s'\n”, is_enabled value, fax modem db file

“_fax_modem_db_fd_is_get_next(): missing the device_name field in record '%s'\n”, fax modem db file

“_fax_modem_db_fd_is_get_next(): missing the host_name field in record '%s'\n”, fax modem db file

“_fax_modem_db_fd_is_get_next(): missing the service_name field in record '%s'\n”, fax modem db file

“_fax_modem_db_fd_is_get_next(): missing the station_id field in record '%s'\n”, fax modem db file

“_fax_modem_db_fd_is_get_next(): missing the phone_number field in record '%s'\n”, fax modem db file

“_fax_modem_db_fd_is_get_next(): missing the modem_pool field in record '%s'\n”, fax modem db file

“_fax_modem_db_fd_is_get_next(): format error for the modem_pool field '%s’ in record '%s'\n”, modem_pool value, fax modem db file

Meaning: An invalid record was found in the modem database.

Impact: The record is ignored, and the modem remains disabled.

Action to take: Using the modem configuration program, try to delete the offending modem, and then reset the fax system. If the problem persists, contact the appropriate support organization.

fax_client_request_modem messages

"fax_client_request_modem_reserve(): already processing request %d for client %d\n", request number, client number

Meaning: A request was made to reserve a modem, but the client making the reserve request has another request in progress.

Impact: The request is denied, and a reply is sent back indicating that the reserve request could not be performed.

Action to take: This problem indicates an internal error in the fax subsystem. Contact the appropriate support organization.

fax_process_request_modem messages

"_fax_process_request_modem_release(): modem ID:%d socket:%d pid:%d. shut-down failed\n", modem id, socket number, process id

"_fax_process_request_modem_release(): modem ID:%d socket:%d pid:%d. Kill failed\n", modem id, socket number, process id

Meaning: Someone initiated a courtesy disable of the modem which means that when the release command is issued, the modem gets shutdown immediately before it can be reserved for another application. The shut-down failed.

Impact: The courtesy disable of the modem fails.

Action to take: A Force shutdown must be done to disable the modem. This problem should not occur in the field. Report it to the appropriate support organization.

"_fax_process_request_modem_info_append(): tried to exceed maximum number of FAX modems of %d", maximum number of FAX modems

Meaning: An attempt was made to configure a new modem, but the system has already reached the maximum number of allowable modems.

Impact: The modem is not added.

Action to take: Purchase a new keycode if more modems need to be added to the system.

"_fax_process_request_default_get(): no value for default name '%s'", default value

"_fax_process_request_default_put(): can't update for default name '%s' to value '%s'", default value, new value

Meaning: A request was made to retrieve or update a system configuration default value, but the value could not be located within the fax server.

Impact: The retrieval or update is not performed.

Action to take: These problems are most likely due to a corrupted defaults database. Restore the database by recovering the file */u/fax/db/defaults.db* from a backup tape.

fax_process_modem messages

"_fax_process_modem_operation(): too many fax modems configured; all fax modems disabled until some are deleted\n"

Meaning: More fax modems are configured than is allowed on this system. The fax server disabled all modems until the number of configured modems is within legal limits. An administrator tried to enable a modem before the modem count was within legal limits, and the fax server blocked the action.

Impact: The modem is not started.

Action to take: Delete some modems until the count is within the legal system limit as defined by the keycode.

fax_client_reply messages

“_fax_client_reply_shut-down_server(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_get_version(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_want_event(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_reserve(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_reserve_get phone(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_release(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_conference(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_call(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_send(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_receive(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_hang(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_abort(): tcp_write() returned %d. errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_info_rewind(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_info_get_next(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_info_get(): tcp_write() returned %d, errno %d '%s'”, return value, error number, error string

“_fax_client_reply_modem_operation(): tcp_write() returned %d, errno %d '%s'” , return value, error number, error string

“_fax_client_reply_modem_info_put(): tcp_write() returned %d, errno %d '%s'”,

return value, error number, error string

"_fax_client_reply_modem_info_append(): tcp_write() returned %d, errno %d '%s'", return value, error number, error string

"_fax_client_reply_modem_info_delete(): tcp_write() returned %d, errno %d '%s'", return value, error number, error string

"_fax_client_reply_document_id_get_next(): tcp_write() returned %d, errno %d '%s'", return value, error number, error string

"_fax_client_reply_document_id_reset(): tcp_write() returned %d, errno %d '%s'", return value, error number, error string

"_fax_client_reply_default_get(): tcp_write() returned %d, errno %d '%s'", return value, error number, error string

"_fax_client_reply_default_put(): tcp_write() returned %d, errno %d '%s'", return value, error number, error string

"_fax_client_reply_get_max_modem(): tcp_write() returned %d, errno %d '%s'", return value, error number, error string

Meaning: All of the above error messages can be encountered in situations where a client of the fax system initiates a request but terminates before the fax server can respond with the results of the request.

Impact: None. The operation proceeds as normal.

Action to take: None. These problems should not occur in the field.

fax_ses_is_start_server messages

"_fax_ses_is_start_server(): retry %d: failed to connect to SES server: host 'localhost' service 'frsesXX' LOG host 'localhost' LOG server", retry number

Meaning: An attempt was made to start a session server, but after it was successfully started, a communication path with the fax server could not be initiated.This problem can occur under heavy load when the fax system is cycled. If this message is followed by an INFO message indicating that a connection to the session server was established, then this problem can be ignored.

Impact: The system retries a certain number of times with five seconds of delay between each attempt.

Action to take: None.

"_fax_ses_is_start_server():ses_want_event() failed for SES server: host 'localhost' service 'frsesXX' LOG host 'localhost' LOG server"

"_fax_ses_is_start_server(): after %d retries: failed to connect to SES server: host 'localhost' service 'frsesXX' LOG host 'localhost' LOG server"

Meaning: The fax server failed to establish a connection to the session server after a number of retries.

Impact: The session server is disabled by the fax system and marked as being FAULTY.

Action to take: Call support.

Cal server warning messages

The following warning messages appear on the cal server. The list provides the meaning of each message and suggests action to take. The following message types are listed:

- cal_sig messages, page 6-33
- cal_process_client messages, page 6-34
- cal_process_server messages, page 6-35
- cal_process_request messages, page 6-35
- cal_client_reply messages, page 6-35
- cal_queue messages, page 6-36
- cal_read messages, page 6-39
- cal_modem messages, page 6-39
- cal_delete messages, page 6-40

cal_sig messages

"_cal_sig_term(): already shutting down\n"

Meaning: The cal server received a request to shut down, and it was already in the process of doing so.

Impact: None.

Action to take: None.

cal_process_client messages

"_cal_process_client_connection():tcp_accept_connection(listen_socket=%d) failed, errno %d '%s'\n", socket number, error number, error string

Meaning: A request to establish a connection with a client was made, but the attempt failed.

Impact: None to the cal server. The client that originated the request does not succeed in establishing the connection.The probable cause is that the client was killed before the connection could be established.

Action to take: None.

"_cal_process_client_connection():tcp_accept_connection(listen_socket=%d) returned fd %d which is >=CAL_MAX_SOCKET (%d)\n", socket number, file descriptor, maximum number of sockets

Meaning: A request to establish a connection with a client was made but cannot be honoured because the maximum number of allowable connections to the server would be exceeded.

Impact: The connection is not made.

Action to take: Close off some of the connections.This error should not occur under normal circumstances.

"_cal_process_client_request(): invalid client request type (%d) from client %d\n", request type number

Meaning: The cal server encountered data on a socket established with a "cal_connect", but the information that it is reading on the socket is not valid.

Impact: The data is ignored.

Action to take: This problem should not occur in the product. It indicates that a file descriptor returned by "cal_connect" is being used with some API other than a "cal" API. Examine the user application.

cal_process_server messages

"_cal_process_server_message(): invalid FAX server event type (%d)\n", event type number

Meaning: An event was received from the fax server while trying to send a Callback fax, but the event is not recognized.

Impact: The event is ignored.

Action to take: None. This problem should not occur in the field.

cal_process_request messages

"_cal_process_request_queue(): malloc(%d) for document id %d failed\n", document size, document id

Meaning: An attempt to queue a document failed because the server could not allocate the necessary memory.

Impact: The document is not queued.

Action to take: Determine why no memory exists on the system. Run the following procedure, or get Nortel support to run this procedure:

Procedure 6-2
Finding the cause of insufficient memory

1. Go to a unix shell with root permissions.
2. Type the command "ps -edalf >/tmp/pslog".
3. Check to see why no memory is available. If this cannot be determined, call support (if you have not already called them), and tell them that the above command was run from a shell. Support uses the output of this command to determine where the problem lies.

cal_client_reply messages

"_cal_client_reply_generic(): invalid request to send reply %d\n", reply number

Meaning: A request to send a response to a client request failed because the routine could not determine what kind of response to send back.

Impact: The reply is not sent.

Action to take: None. This problem should not occur in the field.

"_cal_client_reply_generic(): tcp_write() returned %d, errno %d '%s'\n", return value, error number, error string

"_cal_client_reply_get_version(): tcp_write() returned %d, errno %d '%s'\n", return value, error number, error string

"_cal_client_reply_queue(): tcp_write() returned %d, errno %d '%s'\n", return value, error number, error string

Meaning: A request by a client was initiated, but by the time the server got around to responding to the request, the client was not there to receive the request.

Impact: The response is discarded.

Action to take: None. This problem should not occur in the field.

cal_queue messages

"_cal_queue_delete(): failed to locate document id %d\n", document id

Meaning: A document delete was requested, the document was found, and the file referencing the document on the disk was deleted. However, when the server tried to clear the entry from its internal table held in memory, it could not find the appropriate entry.

Impact: Possible corruption of internal table.

Action to take: Reset the fax system.

"_cal_queue_item_remove(): unlink('%s') error, errno %d '%s'\n", filename, error number, error string

Meaning: A document delete was requested, but the appropriate entry in the Callback queue database could not be deleted.

Impact: Spurious entry that reappears each time the fax system starts up.

Action to take: Check the permissions on the directory /u/u/fax/queue, and make sure that root, vad, and admin can read and write to the directory.

"_cal_queue_item_is_get_next(): stat('%s') failed, errno %d '%s'\n", filename, error number, error string

Meaning: During start-up, the system was unable to determine the status of a file in the queue directory.

Impact: The entry is ignored.

Action to take: Check the file in the /u/fax/queue directory referenced in the error message (in the stat() part of the message), and check its permissions. If nothing seems amiss, reset the fax system. If the problem still recurs, delete the file and try again.

"_cal_queue_item_is_get_next(): %s is not a regular file (st_mode 0%o)\n", filename, status mode

Meaning: During start-up, the server detected an entry in the queue directory /u/fax/queue that was not a regular file and should not be there.

Impact: The entry is ignored.

Action to take: Remove the entry from the directory.

"_cal_queue_item_is_get_next(): error opening file '%s', errno %d '%s'\n", filename, error number, error string

Meaning: During start-up, the server failed to open an entry in the queue directory.

Impact: The entry is ignored.

Action to take: Check permissions on the file, and make sure that root, vad, and admin can all read this file. If permissions do not seem to be a problem, call support.

"_cal_queue_item_is_get_next(): unexpected EOF reading header field from file '%s'\n", filename

"_cal_queue_item_is_get_next(): invalid header field in file '%s'\n", filename

Meaning: During start-up, a queue entry is detected that is corrupt.

Impact: The entry is ignored.

Action to take: Call support.

"_cal_queue_item_start(): fax_modem_send() socket %d modem %d document id %d file '%s' phone '%s' error\n", socket number, modem number, document id, filename, phone number

Meaning: The server attempted to place a call on a modem port, and the attempt failed.

Impact: The document fails this transmission attempt.

Action to take: None. This should not happen in the field. The call is not placed until a fax modem send operation is done; therefore, this problem actually indicates a problem communicating with the fax server.

"_cal_queue_item_start(): fax_modem_send() socket %d modem %d document id %d file '%s' error\n", socket number, modem number, document id, filename

Meaning: The server attempted to send a document and failed.

Impact: The document fails this transmission attempt.

Action to take: Check for session server errors to determine why the attempt failed.

cal_read messages

“_cal_read_int(): unexpected EOF reading field '%s' from file '%s'\n”, field name, filename

“_cal_read_int(): invalid field '%s' value '%s' in file '%s'\n”, field name, value, filename

“_cal_read_boolean(): unexpected EOF reading field '%s' from file ’%s’\n”, field name, filename

“_cal_read_boolean(): invalid field '%s' value '%s' in file '%s'\n”, field name, value, filename

“_cal_read_string(): unexpected EOF reading field '%s' from file '%s'\n”, field name, filename

“_cal_read_fax_resolution(): unexpected EOF reading field '%s' from file '%s'\n”, field name, filename

“_cal_read_fax_resolution(): invalid field '%s' value '%s' in file '%s'\n”, field name, value, filename

“_cal_read_time(): unexpected EOF reading field '%s' from file '%s'\n”, field name, filename

“_cal_read_time(): invalid field '%s' value '%s' in file '%s'\n”, field name, value, filename

Meaning: During start-up, a queue entry is detected that is corrupt.

Impact: The entry is ignored.

Action to take: Call the appropriate support organization.

cal_modem messages

“_cal_modem_disconnect(): fax_disconnect(%d) error, errno %d '%s'\n”, error number, error string

Meaning: The server attempted to disconnect a communications channel with the fax server and failed.

Impact: None. The server continues as if the channel has been disconnected.

Action to take: None. This problem should not occur in the field.

"_cal_modem_release(): fax_modem_release(%d) error\n", error number

Meaning: The server attempted to release a modem but failed.

Impact: None. The server continues as if the modem had been released.

Action to take: None. This problem should not occur in the field.

cal_delete messages

"_cal_ delete_original_callback_fax(): couldn't delete file '%s'\n", filename

Meaning: A document sent from a Meridian IVR application was marked to be deleted once the document was dequeued or sent. However, the fax file could not be removed.

Impact: The document is not removed.

Action to take: Check permissions on the original fax file. Ensure that root, vad, and admin all have write permissions on the file *and* on the directory in which the file resides.

Ses server warning messages

The following warning messages appear on the session server. The list provides the meaning for each message and suggests action to take. The following message types are listed:

- main (): messages, page 6-40
- ses_sig messages, page 6-41
- ses_process messages, page 6-41
- ses_client messages shutdown, page 6-45
- ses_modem messages, page 6-45

main (): messages

"main(): tcp_close() of listen socket %d failed, errno %d '%s'\n", socket number, error number, error string

Meaning: After having established a connection with the fax server, the session server tried to prevent any other clients from talking to it by shutting down the available "listen" socket, and, in doing so, encountered an error .

Impact: Although the error message is ignored and the session server proceeds as if the operation succeeded, this error code indicates a problem with the original socket through which the system establishes communications with the session server. Subsequent operations may not function properly.

Action to take: Recommend disabling and reenabling the modem in question to see if the problem recurs. If so, inform support.

"main(): tcp_close() of client socket %d failed, errno %d '%s'\n", socket number, error number, error string

Meaning: The session server detected that the fax server disconnected the communication path established between them, and the attempt to close the path down completely failed.

Impact: None.

Action to take: None. This problem should not occur in the field.

ses_sig messages

"_ses_sig_term(): already shutting down\n"

Meaning: The ses server received a request to shut down, and it was already in the process of doing so.

Impact: None.

Action to take: None.

ses_process messages

"_ses_process_client_request(): SES_REQUEST_SHUTDOWN failed: processing client request %d\n", request number

Meaning: A client requested a session server to shut down while it was busy doing something.

Impact: The modem is not shut down.

Action to take: None. The program initiating the shutdown request must first ensure that the modems have aborted all current operations. This problem should not occur in the field.

"_ses_process_client_request(): SES_REQUEST_WANT_EVENT: already processing request %d\n", request number

"_ses_process_client_request(): SES_REQUEST_CONFERENCE: already processing request %d\n", request number

"_ses_process_client_request(): SES_REQUEST_CALL: already processing request %d\n", request number

"_ses_process_client_request(): SES_REQUEST_SEND: already processing request %d\n", request number

"_ses_process_client_request(): SES_REQUEST_RECEIVE: already processing request %d\n", request number

"_ses_process_client_request(): SES_REQUEST_HANG: already processing request %d\n", request number

Meaning: The server was already busy processing a request, and the client (fax server) requested another action (other than abort).

Impact: The command is disallowed, and a failure reply is sent back.

Action to take: None. This problem should not occur in the field.

"_ses_process_client_request(): SES_REQUEST_SEND: file '%s': img_add_tti_line(base_dir='%s', tti='%s', font='%s', font_dir='%s') \n", filename, base directory, tti value, font name, font directory

Meaning: A request to send a fax encountered a problem when trying to imbed the TTI line onto the fax page(s).

Impact: The TTI insertion fails, and the fax is sent as it was.

Action to take: Check that the trimtab font exists (/u/fax/fonts/simcoe12rn) and is valid. Do this by creating a generic file that references and uses this font. Make sure that the fonts directory is readable and that the font itself is readable by root, vad, and admin users.

"_ses_process_client_request(): SES_REQUEST_SEND: can't open FAX document file '%s'\n", filename

Meaning: An attempt to open the fax document file failed.

Impact: The fax is not sent.

Action to take: Make sure that the file name references are readable by the accounts root, vad, and admin.

"_ses_process_client_request(): SES_REQUEST_RECEIVE: modem on hook\n"

Meaning: A client initiated a request to receive a fax but when the session server checked the telephone line, it found that the fax modem was on-hook when it was expected to be off-hook.

Impact: The system does not send the fax.

Action to take: Call support.

"_ses_process_client_request(): SES_REQUEST_RECEIVE: can't open FAX document file '%s'\n", filename

Meaning: The session server attempted to open a document file for purposes of storing an incoming fax, but the operation failed.

Impact: Fax reception fails.

Action to take: Ensure that the file name referenced can be written to by root, vad, and admin, and that the directory in which this file is to exist can also be modified by root, vad, and admin.

"_ses_process_client_request(): invalid request %d\n", request number

Meaning: An invalid request was detected on the communication path to the client (fax_server).

Impact: The command is discarded.

Action to take: None. This error indicates an internal error that should not occur in the field. The problem is that a socket descriptor returned by the "ses_connect" within the fax server is now being used with some other APIs other than the session server API's (ses_*).

"_ses_process_modem_response(): SES_C2_0P_WAIT_RING: dx_wtring failed, error#%d - %s\n", error number, error string

Meaning: The session server was told that a call is to come in on its port. It initiated a command that causes it to wait for ring detection on the line. The command failed. The error parameters are information returned by the dialogic macros ATDV_LASTERR(modem fd) and ATDV_ERRMSGP(modem fd).

Impact: The fax is not received.

Action to take: Examine the dialog error code and string to determine the cause of the failure. Call your support organization.

"errno %d - %s\n", error number, error string

Meaning: This error message is logged always in tandem with another error message. It is a supplement error message that indicates the UNIX system "errno" and "errstring" parameters.

Impact: Not applicable.

Action to take: See previous message in log file initiated by this process.

ses_client messages shutdown

“_ses_client_reply_shut-down_server(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

“_ses_client_reply_want_event(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

“_ses_client_reply_conference(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

“_ses_client_reply_abort(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

“_ses_client_reply_call(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

“_ses_client_reply_send(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

“_ses_client_reply_receive(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

“_ses_client_reply_hang(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

“_ses_client_unsol_state(): tcp_write() returned %d, errno %d '%s'\n”, return value, error number, error string

Meaning: A request by a client was initiated, but by the time the server got around to responding to the request, the client was not there to receive the request.

Impact: The response is discarded.

Action to take: This problem should not occur in the field.

ses_modem messages

“_ses_modem_send_page(): page %d of %d in document file '%s': unexpected EOF\n”, page number, number of pages, document name

Meaning: The server was requested to send N pages in a specified document, but the fax file does not have a reference to that many pages.

Impact: Only the number of pages in the document are actually sent.

Action to take: None. This problem should not occur in the field.

"_ses_modem_send_page(): page %d of %d page file '%s' in document file '%s': can't open page file\n", page number, number of pages, page filename, document name

Meaning: The fax file given to the session server contains a reference to a t4 page of data, but it cannot open it.

Impact: The remainder of the document is not sent, and the request to send is aborted.

Action to take: Ensure that a valid fax file has been specified.

"_ses_modem_send_page(): page %d of %d page file '%s' in document file '%s': modem is on hook\n", page number, number of pages, page filename, document name

Meaning: During an attempt to send a page, it was detected that the modem was now on-hook.

Impact: This and all subsequent pages are not sent.

Action to take: None. This happens whenever the remote end terminates the call before the document is completely sent.

"_ses_modem_receive_page(): page %d of file '%s' in document file '%s': can't open, errno%d '%s'\n", page number, page filename, document name, error number, error string

Meaning: When the system was receiving a fax page, it failed to open the T4 file that corresponds to that page.

Impact: The system does not receive the fax.

Action to take: Ensure that the fax base directory is readable and writable by root, vad, and admin.

Appendix A: Meridian IVR fax fonts

Meridian IVR Fax Response provides 61 fonts that are classified into four categories:

- fixed pitch courier font
- proportionally spaced sans serif font
- proportionally spaced serif font similar to a Times Roman typeface
- trimtab font

Excluding the trimtab font, all the fonts have the following attributes:

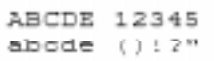
- available in point sizes 10, 12, 14, 16, and 18
- available in both regular (r) weight and bold (b) weight
- available in both normal (n) resolution and fine (f) resolution

The following is a list of fonts available with Meridian IVR Fax Response:

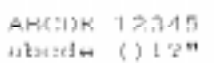
Courier fonts

Courier 10 point fonts

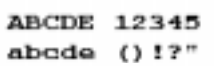
cour10rn



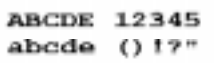
cour10rf



cour10bn

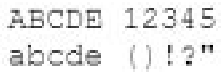


cour10bf

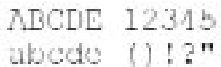


Courier 12 point fonts

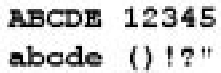
cour12rn



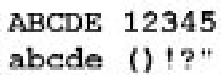
cour12rf



cour12bn

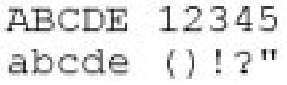


cour12bf

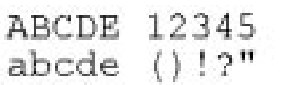


Courier 14 point fonts

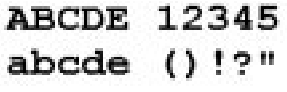
cour14rn



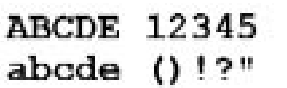
cour14rf



cour14bn

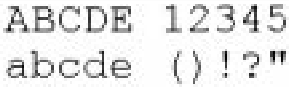


cour14bf

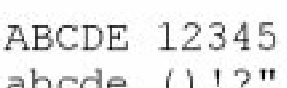


Courier 16 point fonts

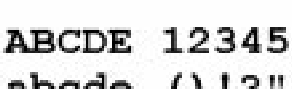
cour16rn



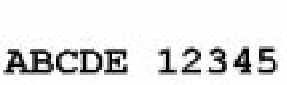
cour16rf



cour16bn

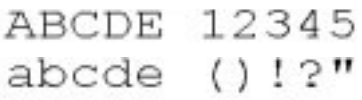


cour16bf

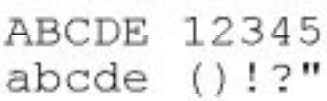


Courier 18 point fonts

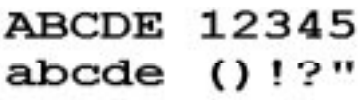
cour18rn



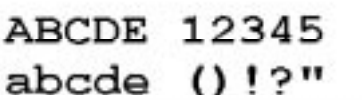
cour18rf



cour18bn



cour18bf

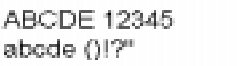


Sans Serif fonts

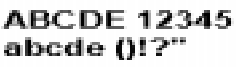
Sans Serif 10 point fonts

ssrf10rn

ssrf10rf



ssrf10bn



ssrf10bf

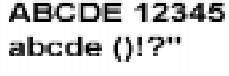
Sans Serif 12 point fonts

ssrf12rn

ssrf12rf

ssrf12bn

ssrf12bf

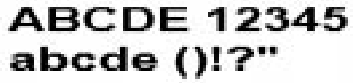


Sans Serif 14 point fonts

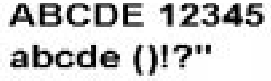
ssrf14rn

ssrf14rf

ssrf14bn



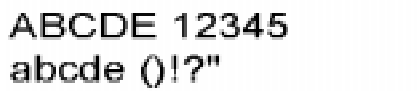
ssrf14bf



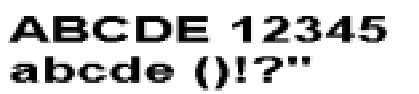
Sans Serif 16 point fonts

ssrf16rn

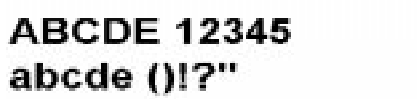
ssrf16rf



ssrf16bn



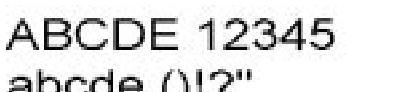
ssrf16bf



Sans Serif 18 point fonts

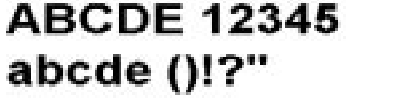
ssrf18rn

ssrf18rf



ssrf18bn

ssrf18bf



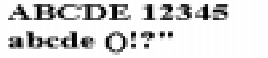
Serif fonts

Times Roman 10 point fonts

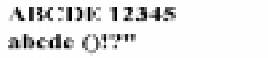
trom10rn

trom10rf

trom10bn



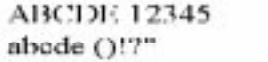
trom10bf



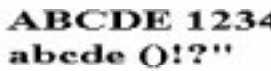
Times Roman 12 point fonts

trom12rn

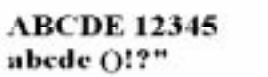
trom12rf



trom12bn

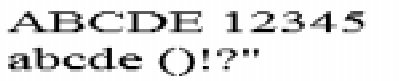


trom12bf



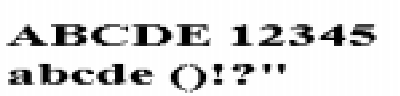
Times Roman 14 point fonts

trom14rn

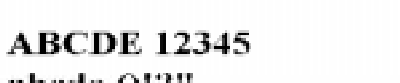


trom14rf

trom14bn



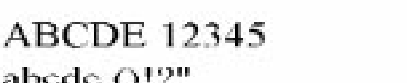
trom14bf



Times Roman 16 point fonts

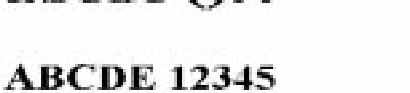
trom16rn

trom16rf



trom16bn

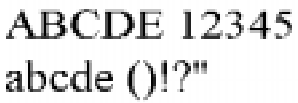
trom16bf



Times Roman 18 point fonts

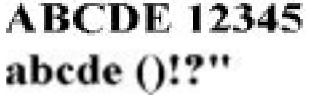
trom18rn

trom18rf



trom18bn

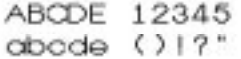
trom18bf



Trimtab fonts

simcoe 12 point trimtab font

simcoe12rn



trimtab characters

Appendix B: TTI line keywords

The TTI line is a string of ASCII characters that are left justified at the top of each page. The characters are copied to the page without conversion, with the exception of the following special formatting keywords:

%d day of the month (ranging from 01–31)

%m month of the year (ranging from 01–12)

%Y four-digit year (for example, 1994)

%y two-digit year (only last two digits)

%T time, in 12-hour AM/PM notation (for example, 11:04 p.m.)

%t time, in 24-hour notation

%z timezone (for example, EDT)

%p current page in the fax file (three digits zero-filled)

%n total number of pages in the fax file (three digits zero-filled)

%C clock symbol

%D calendar symbol

%E telephone symbol

%P page symbol

%% percent symbol

The following formats are combinations of these keywords to accommodate the 31-character string limit of the XAE:

%f1: %d.%m.%Y combination date format

%f2: %d-%m-%Y combination date format

%f3: %d/%m/%Y combination date format

%f4: %m.%d.%Y combination date format

%f5: %m-%d-%Y combination date format

%f6: %m/%d/%Y combination date format

%f7: %Y.%m.%d combination date format

%f8: %Y-%m-%d combination date format

%f9: %Y/%m/%d combination date format

%f10: %p/%n combination page count

The default TTI line, shown in the following example, occupies a total of 29 characters.

Example
%C %t %z %P %f10 %D %f9

Using the combination formats in a typical TTI line would leave space for an additional six characters of information.

Action
* 15:42 EDT * 001/006 * 96/05/14

The asterisks "*" are replaced by the trimtab clock, page, and calendar symbols in this example.

Appendix C: List of standard file extensions

The following is a list of extensions for files used in Meridian IVR Fax Response.

.ascii Text file

.ps Postscript file

.t4 Fax data file

.txt Text file

.tif TIFF file

.tpl Fax file

Glossary

.ascii
Extension for ASCII files that are text files.

branch
A pathway between cells in a Meridian IVR application.

call flow
A diagram of an application.

call ID
Unique call identifier. This is the unique identifier assigned to a call by the Meridian 1 switch and maintained throughout the entire duration of the call.

caller
A person whose phone call is received or originated by a Meridian IVR application.

channel
A telephone trunk within a cluster of APs.

DN
Directory number.

DNIS
Directory number identification system. It is a service provided on a trunk. DNIS identifies to the called system the last three or four digits of the number actually dialled by the caller. The DNIS digits are sent as in-bank DTMF tones on non-ISDN trunks, or using dial pulses on dial pulse (DIP) trunks. On ISDN PRA trunks, DNIS is carried in the called party IE field of the Q.931 setup message.

dual tone multiple frequency (DTMF)
Known as touch tones. Applications can collect information from callers by having them press telephone keys to create DTMF tones.

fax file
A file that is ready to be transmitted to the fax machine, as is. Received faxes are also saved in this format.

generic file
A file that defines how a fax file should look. The generic file is not in a format that can be transmitted; it must be converted into a fax file first.

GOS
Grade of service

GUI
Graphical User Interface

IVR
Interactive Voice Response

mailbox
A directory that users can access through a voice channel to store and retrieve voice messages and voice prompts. Each mailbox has its own password.

Meridian IVR software
A set of integrated programs that allow you to develop and execute Meridian IVR applications.

message
A voice recording made by a caller.

PostScript
A printer language commonly used in laser printers. Meridian IVR Fax Response supports PostScript level 2.

prompt
A voice recording that helps lead a caller through an application.

.ps
Extension for PostScript files.

Remote Station ID
The ID string of the fax machine receiving the fax.

system administrator
A person who is responsible for managing, controlling, and monitoring the fax system and its modems and for generating logs and reports.

.t4
Extension for T4 (Type 4) fax data files. A T4 fax data file is a single page of fax data. Fax files consist of one or more references to T4 fax data files.

.tif
Extension for TIFF files.

TIFF
Tagged Image File Format. This is an image storage format, capable of storing multiple images in a single file.

.tpl
Extension for fax files. A fax file is a fax document that is ready to be transmitted to a fax machine as is. Received faxes are also saved in this format. A fax file consists of FAX 3 commands and references to T4 data files.

TSI
Transmit Station ID. The ID string of the fax machine sending the fax.

TTI
A piece of information, usually one line long, imbedded into a fax page, usually at the top of the page.

.txt
Extension for text files.

VAD
A Value Added Developer who develops Meridian IVR applications.

Value Added Developer
See VAD.

xae
Graphical application editor. It is a nonessential Meridian IVR process.

Meridian IVR

Fax Application Guide

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