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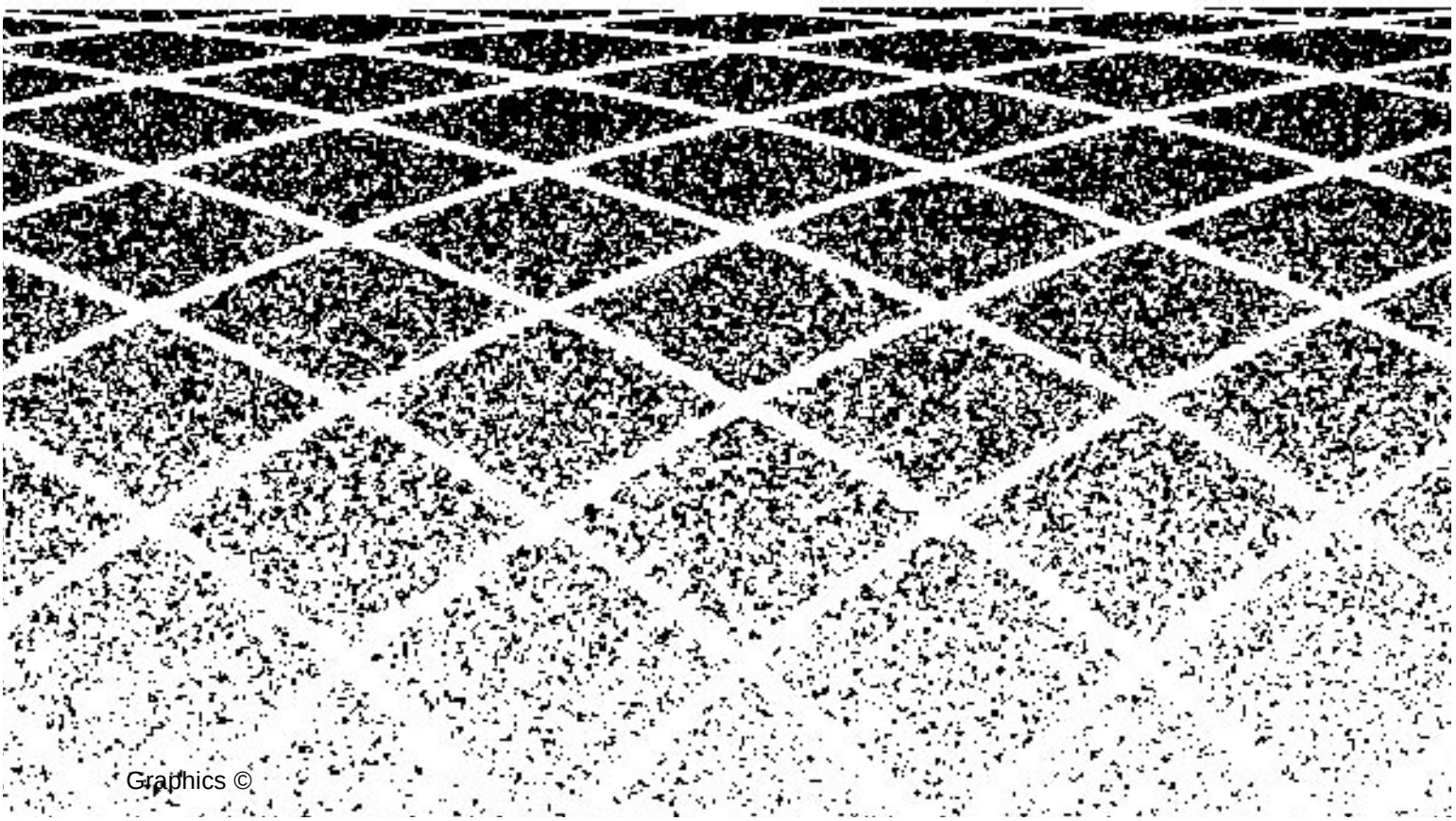
# CONVERSANT Voice Information System Script Builder FAX Actions Release 3.5



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# About This Book

## Purpose

This book describes the procedures for installing, administering, and using the Script Builder FAX Actions Release 3.5 package when it resides on the same platform as the INTUITY CONVERSANT VIS Version 5.0 software.

## Intended Audiences

This book is intended primarily for the customer. Secondary audiences include:

- Field support
- Customer support
- Factory assemble, load, and test (ALT) personnel

## How This Book Is Organized

This book is organized into the following chapters:

- Chapter 1, "Introduction to Script Builder FAX Actions Release 3.5", provides an overview of the Script Builder FAX Actions Release 3.5 package and its capabilities.
- Chapter 2, "Installing Script Builder FAX Actions Release 3.5", describes the procedures for installing and removing the Script Builder FAX Actions Release 3.5 package. There are also procedures for configuring and installing the FAX circuit card and a laser printer.
- Chapter 3, "FAX Equipment Operations", describes how to diagnose FAX hardware, administer FAX channels, and control FAX transmission.
- Chapter 4, "Administering Script Builder FAX Actions Release 3.5", describes how to administer the Script Builder FAX Actions Release 3.5 parameters.
- Chapter 5, "Loading, Viewing, and Printing FAXes", describes how to enter into the system and view and print FAXes to be retrieved by callers.
- Chapter 6, "Using Script Builder FAX Actions Release 3.5", describes how to use Script Builder FAX Actions Release 3.5 within an application and how to define the action screens.
- Chapter 7, "Script Builder FAX Actions Release 3.5 Reports", describes how to access the Script Builder FAX Actions Release 3.5 administrative reports.
- Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", describes the FAX Zapper demonstration application that comes with the system and how to modify it to suit your particular requirements.
- Chapter 9, "Advanced Topics", provides information for those users wanting to go beyond the typical uses of Script Builder FAX Actions Release 3.5.
- Chapter 10, "Troubleshooting Script Builder FAX Actions Release 3.5", contains information on how to troubleshoot the system.
- Chapter 11, "Using AUDIX Voice Power and/or the AT&T FAX Attendant System with Script Builder FAX Actions" contains a description of the AT&T FAX Attendant System (FAS), including its services and features, information about when you should use this system instead of Script Builder FAX Actions Release 3.5, and instructions on how to install Script Builder FAX Actions Release 3.5 and AUDIX Voice Power (AVP) and/or the AT&T FAX Attendant System together.
- This book also contains a list of Abbreviations, a Glossary, and an Index.

## Conventions Used in This Book

The following conventions are used in this book:

- Terminal keys that you press are shown in rounded boxes. For example, an instruction to press the enter key is shown as follows:

  Press ENTER

- The word "enter" means to type a value and press ENTER. For example, an instruction to type **y** and press ENTER is shown as follows:

  Enter **y** to continue.

- Two or three keys that you press at the same time (that is, you hold down the first key while pressing the second and/or third key) are shown as two separate rounded boxes connected together by "and". For example, an instruction to press and hold ALT while typing the letter **d** is shown as follows:

  ALT and D

- Commands and text you type or enter appear in **bold**.

- Values, instructions, and prompts that appear on the screen are shown in traditional typewriter type as `constant-width`.

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The following trademarked products are mentioned in this book:

- AUDIX, FAX Attendant, and CONVERSANT® are registered trademarks of AT&T.
- Voice Power is a trademark of AT&T.
- UNIX® is a registered trademark of Novell, Inc.

## Related Resources

The following books should be used in conjunction with this book:

- *MAP/100 Voice Processing Hardware Installation*, 585-310-148
- *MAP/100C Voice Processing Hardware Installation*, 585-310-149
- *MAP/40 Voice Processing Hardware Installation*, 585-310-150
- *INTUITY CONVERSANT VIS Version 5.0 Maintenance*, 585-310-153
- *INTUITY CONVERSANT VIS Version 5.0 Software Installation*, 585-310-151
- *INTUITY CONVERSANT VIS Script Builder*, 585-310-727
- *INTUITY CONVERSANT VIS Version 5.0 Application Development*, 585-310-227

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# Introduction to Script Builder FAX Actions Release 3.5

# 1

## What's in This Chapter

This chapter:

- Describes Script Builder
- Provides a description of the Script Builder FAX Actions Release 3.5 package
- Lists the features of Script Builder FAX Actions Release 3.5
- Lists what hardware and software you will need to use Script Builder FAX Actions Release 3.5
- Provides a checklist of steps to begin using Script Builder FAX Actions Release 3.5 quickly
- Describes how Script Builder FAX Actions Release 3.5 works
- Describes the architecture and provides call flows that illustrate how the system works
- Lists uses of Script Builder FAX Actions Release 3.5 in applications

## What Is Script Builder?

Script Builder is the application generator for the CONVERSANT VIS. With it, you can create applications that run on the CONVERSANT VIS. Script Builder is menu driven. You create applications with Script Builder using intuitive windows, forms, and keys. For example, you select the actions the application should perform when the caller reaches it from a menu of "Action Choices," that includes items such as "answer the telephone" and "play an announcement". While you are defining the application, you can also record any speech or enter any database information associated with it.

## What Is the Script Builder FAX Actions Release 3.5 Package?

The CONVERSANT Voice Information System (VIS) Script Builder FAX Actions Release 3.5 package provides the necessary functionality for sending FAXes to and receiving FAXes from callers of CONVERSANT VIS applications.

By using Script Builder FAX Actions Release 3.5, an application can:

- Transmit a stored graphic image to the caller
- Transmit dynamically created text information to the caller
- Attach a customized cover page to the FAX information requested by the caller
- Receive a FAX from the caller

Script Builder FAX Actions Release 3.5 is easy to use and can be incorporated quickly into any Script Builder application. The Script Builder FAX Actions Release 3.5 package allows you to:

- Develop applications that send FAXes to callers or receive FAXes from callers quickly and easily
- Integrate FAX capabilities into existing CONVERSANT VIS applications
- Automatically retry numbers if the called FAX machine is busy
- Optionally transmit FAXes when toll rates are lower, for example, after 5 p.m.
- Support both Tip/Ring (T/R) and T1 callers
- Transmit multiple FAXes to callers

**NOTE:**
The FAX_Current, FAX_Get, and FAX_CNG actions cannot be used on T1 channels. The FAX_Current and FAX_Get actions can work on line-side T1 channels if the transfer operation does not require the presence of a dial tone.

## What Do You Need to Use the Script Builder FAX Actions Package?

To use the Script Builder FAX Actions Release 3.5 package, you will need:

- A functional CONVERSANT VIS V5.0 system that can answer incoming calls
- Script Builder (or Global Script Builder)
- Script Builder FAX Actions Release 3.5 software
- At least one FAX circuit board (Brooktrout TR114-I4L or TR114+I4L)

**NOTE:**
The Script Builder FAX Actions Release 3.5 package consists of the actual actions that work with Script Builder to provide FAX functionality and the "run-time" environment necessary to support applications that use the actions. You *can* install the Script Builder FAX Actions Release 3.5 package on a system without Script Builder. In this case, you will be able to run applications developed on other systems that do contain Script Builder. Without Script Builder, however, you will not be able to use Script Builder FAX Actions Release 3.5 to develop applications.

## Quick-Start Checklist

The following checklist summarizes the steps required to get Script Builder FAX Actions Release 3.5 up and running on your CONVERSANT VIS 5.0 system.

| | |
|---|---|
| ✔ | Make sure you have a functioning CONVERSANT VIS system. |
| ✔ | Make sure you have Script Builder installed (see note on previous page). |
| ✔ | Use **installpkg** to install the Script Builder FAX Actions Release 3.5 diskettes. When the system is down, install the FAX circuit board. Remember to set the circuit board jumpers appropriately. (See Chapter 2, "Installing Script Builder FAX Actions Release 3.5", for more details.) |
| ✔ | Connect a working Tip/Ring (T/R) line to the FAX circuit board and put at least one FAX channel in service using the FAX Channel Administration window. (See Chapter 3, "FAX Equipment Operations", for more details.) |
| ✔ | Diagnose the board using the FAX Equipment Diagnostics form. (See Chapter 3, "FAX Equipment Operations", for more details.) |
| ✔ | Assign the proper extension to the in-service FAX channel using the LINES key in the FAX Channel Administration window. |
| ✔ | Administer the “Dial String For Outside Call” parameter in the "FAX Actions Parameters Defined" form. (See Chapter 4, "Administering Script Builder FAX Actions Release 3.5", for more details.) |
| ✔ | Develop an application that uses Script Builder FAX Actions Release 3.5 or RESTORE through Script Builder the FAX_Zapper application that comes with the Script Builder FAX Actions Release 3.5. |
| ✔ | Assign the application to a working voice channel. |
| ✔ | Call the application. Be prepared to input the telephone number of a working FAX machine if not calling from a FAX machine. |

# How Script Builder FAX Actions Release 3.5 Works

The actions that come with Script Builder FAX Actions Release 3.5 work like any other Script Builder actions that appear in the Script Builder Actions List. Use the actions to incorporate FAX functionality into your CONVERSANT VIS application. You use the Script Builder FAX Actions Release 3.5 administrative windows to load, view, and print the graphical images your application transmits to the caller. Text files can be created in advance or "in real-time" based upon caller input, if desired, and then transmitted to the caller. FAXes can be received from callers and placed into any directory specified by your application.

## Architectural Components

Figure 1-1 illustrates the architectural components that make Script Builder FAX Actions Release 3.5 work. The major components are explained below.

- Telephone — Callers can dial into the system using a telephone.
- FAX machine — Where the requested FAXes are delivered.
- Global communications network — The communications infrastructure that connects the caller to the called CONVERSANT VIS system.
- PBX — Typically provides the front-end to the CONVERSANT VIS. This is not strictly required to use Script Builder FAX Actions Release 3.5.
- CONVERSANT VIS — Contains the hardware and software that supports the Script Builder FAX Actions Release 3.5 application.
- FAX circuit card — A four-channel FAX device that sends FAXes from and receives FAXes into the CONVERSANT VIS.
- Voice circuit card — Provides voice functionality that supports the caller's interaction with the CONVERSANT VIS.
- faxmgr — Maintains the FAX delivery queue and controls the faxioprocesses that control actual FAX activity.
- faxio — There is a faxio process for each in-service FAX channel. The faxio process controls the FAX channel it is associated with.
- Scripts/TSM — The script is the actual voice response application that controls the interaction with the caller. The transaction state machine (TSM) is the architectural component that executes the script.

- faxingDip — Provides the interface between the script and the faxmgr. Since the faxingDip processes each request in the order received before going on to the next, it can block one channel while serving another. Up to four faxingDips can be used to avoid call delays. When using more than one faxingDip, the faxingDip used for a call depends on the voice channel on which the call arrived.
- Outgoing FAX queue — Each FAX requested by callers resides in the outgoing FAX queue until it is successfully delivered or until the system gives up. FAXes are delivered first-in, first-out.

To illustrate how these architectural components work together to provide FAX services to callers, the following sections provide step-by-step call flows of some common FAX operations.

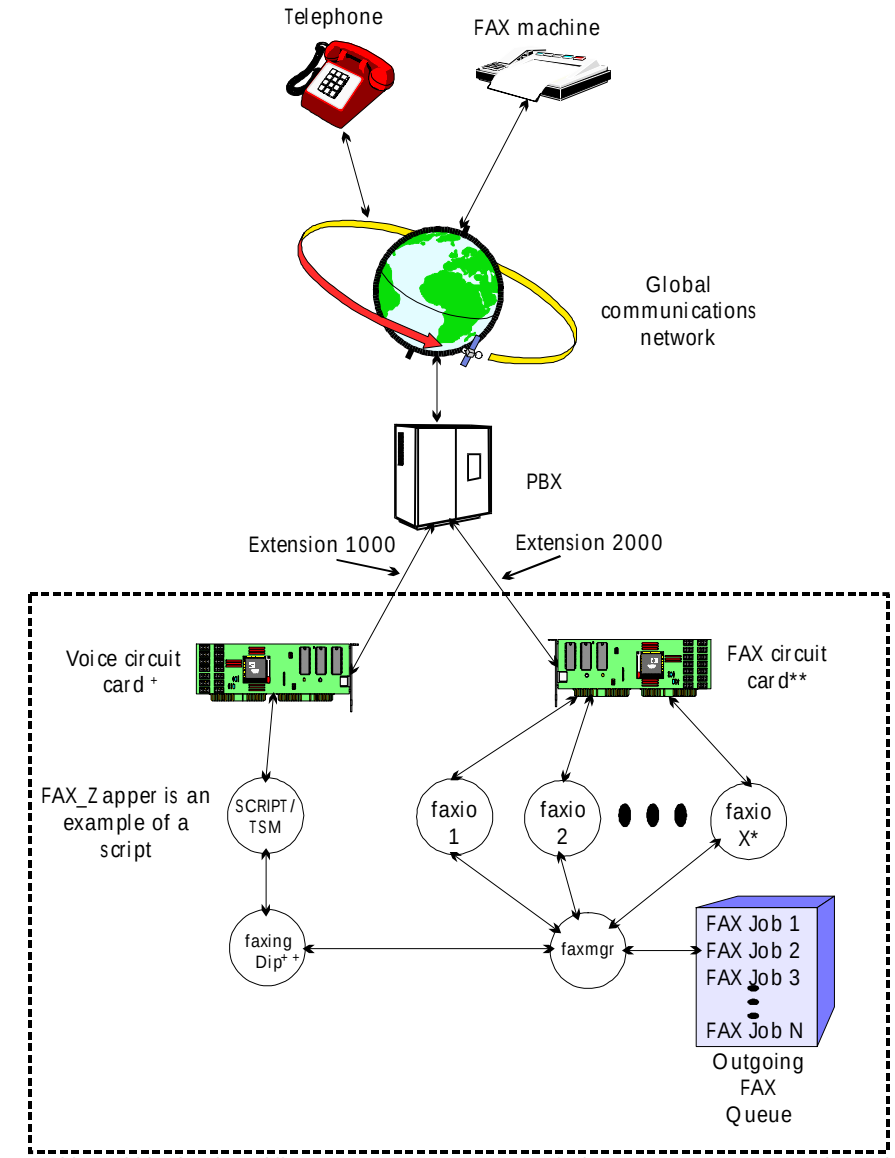



**Figure 1-1. Script Builder FAX Actions Architecture**

## Step-by-Step Call Flow: FAX Delivery Using FAX_Send

In the following scenario, a caller dials into the FAX_Zapper application from a telephone and requests that a FAX be delivered to a FAX machine.

1. The caller dials the FAX_Zapper telephone number from his/her telephone.
2. The call is routed through the global communications network and arrives at a CONVERSANT VIS voice channel (extension 1000 in Figure 1-1).
3. The CONVERSANT VIS voice channel goes off-hook and the FAX_Zapper script is started by TSM.
4. The caller hears “Welcome to the FAX_Zapper.”
5. The caller navigates the FAX_Zapper menus and requests a FAX to be sent to his/her FAX machine.
6. The caller enters his/her telephone number which the FAX_Zapper places on the FAX cover sheet.
7. The caller enters his/her FAX telephone number.
8. The FAX_Zapper executes a FAX_Send action during which the faxingDip directs the faxmgr to place the FAX requested by the caller on the outgoing FAX queue.
9. The caller completes his/her interaction with the FAX_Zapper and hangs up.
10. The FAX_Zapper disconnects the voice channel which is available to handle another call.
11. When a FAX channel becomes available, the faxmgr directs the faxio channel that controls the available FAX channel to transmit the FAX to the number entered by the caller.
12. The available FAX channel dials the delivery number entered by the caller.
13. The caller’s FAX machine answers, negotiates a FAX connection with the calling FAX channel, and receives the FAX.
14. When finished, the FAX channel is reset and can be used again.

## Step-by-Step Call Flow: FAX Retrieval Using FAX_Current

In the following scenario, a caller dials into the FAX_Zapper application from a FAX Machine and requests that a FAX be delivered on the current call to the FAX machine he/she is calling from.

1. The caller dials the FAX_Zapper telephone number from his/her FAX Machine.
2. The call is routed through the global communications network and arrives at a CONVERSANT VIS voice channel (extension 1000 in Figure 1-1).
3. The CONVERSANT VIS voice channel goes off-hook and the FAX_Zapper script is started by TSM.
4. The caller hears "Welcome to the FAX_Zapper" through the handset connected to the FAX machine or through the FAX machine's speakerphone.
5. The caller navigates the FAX_Zapper menus and requests a FAX on the current call.
6. The caller enters his/her telephone number, which the FAX_Zapper places on the FAX cover sheet.
7. The FAX_Zapper executes a FAX_Current action during which the faxingDip directs the faxmgr to immediately reserve a FAX channel for use during this call.
   - — If a FAX channel is not available, the FAX_Zapper offers to deliver the FAX to a FAX machine later when a FAX channel becomes available.
   - — If a FAX channel is available, the faxmgr instructs the reserved FAX channel to expect a call shortly. The faxmgr instructs the FAX channel reserved which FAX to transmit when the expected call arrives.
8. The FAX Zapper instructs the caller to "Press the start button on your FAX machine now" and then transfers the call to the awaiting FAX channel using the extension returned by the FAX_Current action. The faxmgr knows what extension to use (extension 2000 in Figure 1-1) because the extension was previously administered in the FAX Channel Administration window.
9. The FAX channel answers the transferred call.
10. The voice channel hangs up and is available for another call leaving the connection between the calling FAX machine and the FAX channel established.
11. The caller's FAX machine and the FAX channel negotiate a FAX connection and the FAX is transmitted to the calling FAX machine.
12. When finished, the FAX channel is reset and can be used again.

## Step-by-Step Call Flow: Using FAX_Get to Leave a FAX in the System Mailbox

In the following scenario, a caller dials into the FAX_Zapper application from a FAX Machine and sends a FAX into the system mailbox.

1. The caller dials the FAX_Zapper telephone number from his/her FAX Machine.
2. The call is routed through the global communications network and arrives at a CONVERSANT VIS voice channel (extension 1000 in Figure 1-1).
3. The CONVERSANT VIS voice channel goes off-hook and the FAX_Zapper script is started by TSM.
4. The caller hears “Welcome to the FAX_Zapper” through the handset connected to the FAX machine or through the FAX machine’s speakerphone.
5. The caller navigates the FAX_Zapper menus and requests to send a FAX into the system mailbox.
6. The caller records a voice annotation to the FAX describing the contents of the FAX he/she is about to send.
7. The FAX_Zapper executes a FAX_Get action during which the faxingDip directs the faxmgr to immediately reserve a FAX channel for use during this call.
   - — If a FAX channel is not available, the FAX_Zapper asks the caller to call back later.
   - — If a FAX channel is available, the faxmgr instructs the reserved FAX channel to expect a call shortly. The faxmgr instructs the FAX channel reserved where to place the received FAX when the expected call arrives.
8. The FAX Zapper instructs the caller to “Press the start button on your FAX machine now” and then transfers the call to the awaiting FAX channel using the extension returned by the FAX_Get action (extension 2000 in Figure 1-1).
9. The FAX channel answers the transferred call and transmits a modem tone.
10. The voice channel hangs up and is available for another call leaving the connection between the calling FAX machine and the FAX channel established.
11. The caller’s FAX machine and the FAX channel negotiate a FAX connection and the FAX is transmitted from the calling FAX machine to the FAX channel from where it is stored on the hard disk.
12. When finished, the FAX channel is reset and can be used again.

## Some Uses for Script Builder FAX Actions in Your Applications

The following list suggests how to use Script Builder FAX Actions Release 3.5 in various applications.

- Company brochures

  Callers interact with an application to request product brochures by FAX transmission. The product brochures may be sent immediately or at a later time when the telephone rates are lower. They may also be sent on the current call if the caller is calling from a FAX machine.

- Bank account records

  Callers enter an account number and then receive a FAX of that account status including a list of the last 20 checks that were cleared through the account. Callers can FAX their loan application into the system.

- Real estate information

  Prospective home buyers notice a sign in the front yard of a house they are interested in purchasing. They call the number on the sign, enter the house identification code, then receive a FAX of the house data sheet including a floor plan, asking price, and the name of the real estate agent.

- Company savings plan records

  Employees call the automated administrator of their company savings plan and request the most current account statement. They can then get their latest account statements immediately via FAX, instead of waiting until the next quarterly statement.

- Medical records

  Physicians call a single telephone number and listen via text-to-speech (TTS) to up-to-date patient records supplied by the hospital, pharmacy, or laboratory. They can then have the medical records FAXed to them in their automobile or office.

- Customer service information

  Customers call an application that allows them to receive FAXes about product/system maintenance issues and the resolutions to those issues. They can listen to the issue resolutions via audiotext or TTS or can request a FAX of the issue resolution. If they want immediate attention, they can transfer to a customer service agent.

- Hotel/conference services

  A hotel simultaneously hosting two industry conferences can provide an automated service to organizers of both conferences. These services allow conference attendees to automatically register and pay for the conference, receive a FAX of their confirmed reservation, and receive a FAX of a map that provides instructions on how to get to the hotel. The service also allows attendees to hear conference agendas and descriptions of technical sessions, receive FAXes about both conferences, register for technical tutorials, receive a FAXed registration confirmation, and listen to a replay of the conference keynote speech which is automatically added to their room charge.

- Tax form distribution

  Corporate and individual tax payers call into an application that allows them to retrieve tax forms and directions for their use. Callers may also leave their completed tax form on the system.

- Callers queued in ACD

  Callers who reach a service bureau are placed in an automatic call distributor (ACD) queue awaiting the availability of an organization representative. While in the ACD, callers listen to information about new products and services and can elect to receive information about these products and services via FAX.

- Travel/airline reservations

  An airline or travel agency offers customers the option of receiving a FAX of all flights that are consistent with their travel needs. Once a reservation is made, the customer can receive a FAXed confirmation of the travel arrangement.

- News/wire service

  Subscribers to a newspapers, other publications, and wire service can receive late-breaking news reports via FAX by dialing a voice-response application.

- Brokerage services

  A brokerage house offers its callers a voice-response service that allows the caller to buy and sell stocks and bonds. The caller receives a FAX confirming the transaction.

- Shipping

  Shipping company customers dial a voice-response application and request a FAX with the latest status information about their shipping job and/or a duplicate of their bill of lading.

- Order entry/verification

  A manufacturer's representative contacts a supplier via the supplier's voice-response application and requests several spare parts. The representative receives a FAX with the order confirmation.

# Installing Script Builder FAX Actions Release 3.5

# 2

## What's in This Chapter

This chapter provides:

- An overview of Script Builder FAX Actions Release 3.5 software installation
- Installation procedures for the Script Builder FAX Actions Release 3.5 software package
- Information on administering the system to work globally
- Instructions on how to install the FAX circuit card
- Instructions on how to find and set the jumper locations of the FAX circuit card
- Instructions on how to connect telephone lines to the FAX circuit card
- Instructions on how to connect and administer a laser printer for printing FAXes
- Instructions for removing the Script Builder FAX Actions Release 3.5 software

## Before You Begin

Before you can install the Script Builder FAX Actions Release 3.5 package, you must have the following already installed on your system:

- CONVERSANT VIS Version 5.0 Application Package
- CONVERSANT VIS Version 5.0 Script Builder or Global Script Builder

  For more information about how to install Script Builder, refer to Chapter 3, "Installing Software for Optional Features," of *CONVERSANT VIS Version 5.0 Software Installation,* 585-350-111.

  **NOTE:**
  The Script Builder FAX Actions Release 3.5 package consists of the actual actions that work with Script Builder to provide FAX functionality and the "run-time" environment necessary to support applications that use the actions. You *can* install the Script Builder FAX Actions Release 3.5 package on a system without Script Builder. In this case, you will be able to run applications developed on other systems that do contain Script Builder. Without Script Builder, however, you will not be able to use Script Builder FAX Actions Release 3.5 to develop applications.

Before you install the Script Builder FAX Actions Release 3.5, make sure your FAX circuit card interrupt jumpers and I/O address switches are correctly configured. See "General Steps for Circuit Card Installation" in Chapter 6, "Installing Circuit Cards—Introduction and Types," in your hardware installation guide and "Selecting an IRQ Setting" in this chapter for information about how to select interrupt values.

## Quick-Start Checklist

The following checklist summarizes the steps required to install Script Builder FAX Actions Release 3.5.

| | |
|---|---|
| ✔ | Make sure you have a functioning CONVERSANT VIS 5.0 system. |
| ✔ | Make sure you have Script Builder installed (see previous note). |
| ✔ | Set the FAX circuit board interrupt and I/O address jumpers. |
| ✔ | Use **installpkg** to install the Script Builder FAX Actions Release 3.5 diskettes. When prompted for the interrupt, enter the number used in the last step. Enter the country code and the number of active faxingDips desired (if in doubt, use two). When the system is down, install the FAX circuit board. |
| ✔ | Reboot the system. |

## Installing the Script Builder FAX Actions Release 3.5 Software

If you are installing the Script Builder FAX Actions Release 3.5 package on a running system, you must first stop the VIS. See “Stopping the Voice System” in Chapter 4, “Common Maintenance Procedures,” in *CONVERSANT VIS Version 5.0 Maintenance,* 585-310-153, before you load the software.

**NOTE:**
The Script Builder FAX Actions Release 3.5 package requires approximately 7 Mbyte of hard disk memory. Make sure there is enough space in the root (/) directory on your system before beginning the installation.

**NOTE:**
If you are installing Script Builder FAX Actions Release 3.5 with AUDIX Voice Power and/or the AT&T FAX Attendant System, refer to Chapter 11, "Using AUDIX Voice Power and/or the AT&T FAX Attendant System with Script Builder FAX Actions" before you begin the following procedure.

Follow the steps below to install the Script Builder FAX Actions Release 3.5 software.

1. If you are not already logged in, do so now.

   a. At the `Welcome to the AT&T 486 UNIX System` prompt, enter **root**

      System response:

      `Password:`

   b. Enter your password.

      System response:

      The system returns the UNIX system prompt `#`.

2. Enter **installpkg**

   System response:

   ```
   Please indicate the installation medium you intend to
   use. Strike ‘C’ to install from CARTRIDGE TAPE or ‘F’ to
   install from FLOPPY DISKETTE.
   Strike ESC to stop.
   ```

3. Press F.

   System response:

   ```
   Insert the floppy disk.

   Strike ENTER when ready
   or DEL to cancel.
   ```

4. Insert the first Script Builder FAX Actions Release 3.5 floppy disk and press ENTER.

   System response:

   ```
   Installation in progress -- do not remove the floppy
   diskette.
   ```

5. When prompted, insert the remaining diskettes in order.

   System response:

   Installation progress messages will appear.

6. When you have loaded all diskettes into the system and the system has finished installing the Script Builder FAX Actions Release 3.5, you receive the system response:

   ```
   Select the interrupt level for the FAX circuit card(s)
   from the following levels.

       3
       4
       5
       6
       7
       9
       10
       11
       12
       14
       15
   enter choice:
   ```

7. Enter your interrupt choice.

   **NOTE:**
   See "Selecting an IRQ Setting" in this chapter for information about how to select an IRQ.

   System response:

   ```
   Confirm. Interrupt level X. (y/n)
   ```

   where *X* is the interrupt you selected

8. Confirm your interrupt choice if correct. Otherwise, try again. If the interrupt you selected is being used, the system asks you to choose a different interrupt.

   System response:

   Installation progress messages appear. Then, the system asks you to enter a country code:

```
Enter the code of the country in which this system will
operate. For a list of codes, consult your user
documentation. If you decide at a later date to change
this setting, simply use the SetPlace.sh utility (see
your user documentation).

Enter choice:
```

**NOTE:**
See Table 2-1 later in this chapter for the correct code for the country in which the system will be operating.

9. Enter your country code choice, then confirm your selection or try again if your input is not accepted.

   System response:

   Once you confirm the country code, the system asks you to enter the number of faxingDips to use:

```
Enter the number of faxingDips you want running on your
system. Your application will work fine regardless of
how many you choose. If you decide at a later date to
change this setting, simply use the SetFaxDip.sh
utility (see your user documentation).

For light expected FAX traffic,           enter 1.
For average expected FAX traffic,         enter 2.
For moderately heavy expected FAX traffic, enter 3.
For heavy expected FAX traffic,           enter 4.
Enter choice:
```

10. Enter your selection and confirm your entry when asked.

**NOTE:**
The more traffic you expect and the more file conversion your application requires the more faxingDips you might need. If in doubt, use two faxingDips. You can always change this later if necessary.

System response:

```
The CONVERSANT VIS Script Builder FAX Actions Release
3.5 has been successfully installed. You must remove
the last floppy disk. The system will reboot shortly.
```

11. The final step in software installation is to shut down and reboot the system. Remove the last floppy disk, then press ENTER when prompted to begin the system shutdown.

    System response:

    The system begins the shutdown and prompts you to reboot the system.

12. Before rebooting the system, turn off the system power and install the FAX circuit card(s).

13. Once the system comes back up after installing the FAX circuit boards and rebooting the system, you may need to start the voice system. See "Starting the Voice System" in Chapter 4, "Common Maintenance Procedures," in *CONVERSANT VIS Version 5.0 Maintenance,* 585-310-153.

## Administering Your System to Work Globally

Release 3.5 of Script Builder FAX Actions was developed to work globally. All administration necessary to allow the system to work globally is done during system installation.

### Which Countries Are Currently Supported

Contact your AT&T representative for the list of countries currently supported.

### Country Codes

Table 2-1 lists the country codes to use during software installation. Script Builder FAX Actions Release 3.5 does not support all the countries listed in Table 2-1. Contact your AT&T representative for the list of countries currently supported.

**Table 2-1. Country Codes**

| Country: Code | Country: Code | Country: Code | Country: Code |
|---|---|---|---|
| USA: 10 | Canada: 11 | Algeria: 2130 | American Samoa: 6840 |
| Andorra: 330 | Argentina: 540 | Australia: 610 | Austria: 430 |
| Barring: 9730 | Belgium: 320 | Belize: 5010 | Bolivia: 5910 |
| Brazil: 550 | Cameroon: 2370 | Chile: 560 | Columbia: 570 |
| Costa Rica: 5060 | Cyprus: 3570 | Czech Republic/Slovakia: 420 | Denmark: 450 |
| Ecuador: 5930 | Egypt: 200 | El Salvador: 5030 | Ethiopia: 2510 |
| Fiji: 6790 | Finland: 3580 | France: 330 | French Antilles: 5960 |
| French Antillis Guadeloupe: 5900 | French Polynesia: 6890 | Gabon: 2410 | German Dem Rep: 370 |
| German Fed Rep: 490 | Greece: 300 | Guam: 6710 | Guantanamo Bay: 530 |
| Guatemala: 5020 | Guyana: 5920 | Haiti: 5090 | Honduras: 5040 |
| Hong Kong: 8520 | Hungary: 360 | Iceland: 3540 | India: 910 |
| Indonesia: 620 | Iran: 980 | Iraq: 9640 | Ireland: 3530 |
| Israel: 9720 | Italy (Co): 390 | Italy (PBX): 391 | Ivory Coast: 2250 |
| Japan 10: 810 (10 pulse per second) | Japan 20: 811 (20 pulse per second) | Japan 10 DID: 812 (10 pulse per second) | Japan 2 DID: 813 (10 pulse per second) |
| Jordan: 9620 | Kenya: 2540 | Korea: 820 | Kuwait: 9650 |
| Liberia: 2310 | Libya: 2180 | Liechtenstein: 410 | Luxembourg: 3520 |
| Malawi: 2650 | Malaysia: 600 | Mexico: 520 | Monaco: 330 |
| Morocco: 2120 | Namibia: 2640 | Netherlands: 310 | Netherlands Antilles: 5990 |
| Netherlands Antilles Aruba: 2970 | New Caledonia: 6870 | New Zealand: 640 | Nicaragua: 5050 |
| Nigeria: 2340 | Norway: 470 | Norway X: 471 | Oman: 9680 |
| Pakistan: 920 | Panama: 5070 | Papua New Guinea: 6750 | Paraguay: 5950 |
| Peru: 510 | Philippines: 630 | Poland: 480 | Portugal: 3510 |
| Qatar: 9740 | Romania: 400 | Saipan: 6700 | San Marino: 390 |
| Saudi Arabia: 9660 | Senegal: 2210 | Singapore: 650 | South Africa: 270 |
| Spain: 340 | Sri Lanka: 940 | Suriname: 5970 | Sweden: 460 |
| Switzerland: 410 | Taiwan:8860 | Thailand: 660 | Tunisia: 2160 |

***Continued on next page***

**Table 2-1. Country Codes — *Continued***

| Country: Code | Country: Code | Country: Code | Country: Code |
|---|---|---|---|
| Turkey: 900 | United Arab Emirates: 9710 | U.K. (CO): 440 | U.K. (PBX): 441 |
| Uruguay: 5980 | Vatican City: 390 | Venezuela: 580 | Yemen Arab Republic: 9670 |
| Yugoslavia: 380 | | | |

## The BT_CPARM.CFG File

The electrical characteristics of the telephone network vary substantially from country to country. T he Script Builder FAX Actions Release 3.5 BT_CPARM.CFG file contains configuration parameters that characterize the technical aspects of the public network in each of the countries supported by the product.

Periodically, AT&T updates the BT_CPARM.CFG file to include support for additional countries. You may need to install the latest version of the BT_CPARM.CFG file. The update diskette will be delivered with your system if it is required.

To install the BT_CPARM.CFG update, use the following procedure.

1. If you are not already logged in, do so now.

   a. At the `Welcome to the AT&T 486 UNIX System` prompt, enter **root**

      System response:

      `Password:`

   b. Enter your password.

      System response:

      The system returns the UNIX system prompt `#`.

2. Enter **installpkg**

   System response:

   ```
   Please indicate the installation medium you intend to
   use. Strike 'C' to install from CARTRIDGE TAPE or 'F' to
   install from FLOPPY DISKETTE.
   Strike ESC to stop.
   ```

3. Press F.

   System response:

   ```
   Insert the floppy disk.

   Strike ENTER when ready
   or DEL to cancel.
   ```

4. Insert the Script Builder FAX Actions Release 3.5 BT_CPARM.CFG Update diskette and press ENTER.

   System response:

   ```
   Installation in progress -- do not remove the floppy
   diskette.
   ```

5. Stop and then start the voice system to activate the change.

## Installing the FAX Circuit Card

The CONVERSANT VIS hardware platform supports up to three FAX circuit cards.

### Identifying the Version of Your FAX Circuit Card(s)

To correctly configure your FAX circuit cards, you must know which version you have. There are two primary versions of FAX circuit cards:

- TR114 — the original version of the board
- TR114+ — a newer design that works in several countries

Each circuit card works in different countries. Some countries can support both versions, while other countries support one or the other. Your order will include the correct circuit card. However, you can also use the following procedure to verify the version you have:

1. Hold the circuit card as shown in Figure 2-2.
2. In the middle of the circuit card towards the left side, locate four DSP integrated circuit chips in a row (one might be under a daughter board).
   - — If the identification on those chips contains “FX164V”, you have a TR114+ circuit card.
   - — If the identification on those chips contains “FX16V”, you have a TR114 circuit card.

**NOTE:**
A new version of the TR114 card, called HIFGA2, is also available. To determine whether or not a TR114 card is a HIFGA2, use the following procedure, "Determining if a TR114 Card Is a HIFGA2".

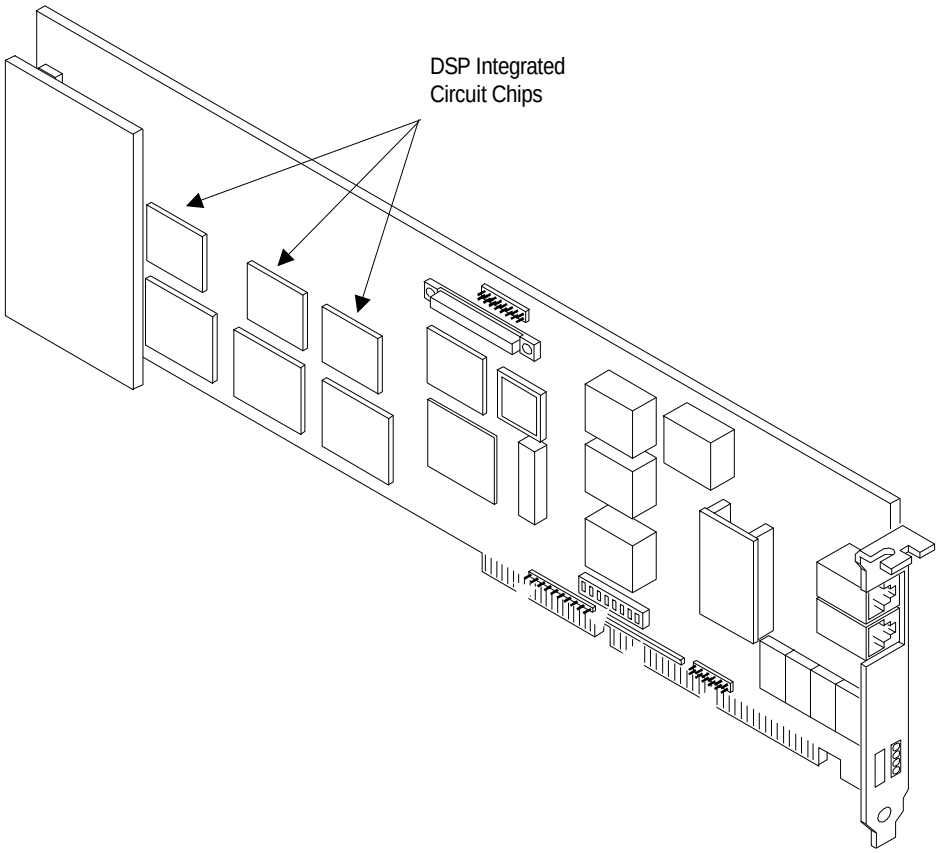



**Figure 2-2. FAX Circuit Card—Identifying Which Version You Have**

## Determining if a TR114 Card Is a HIFGA2

Perform the following procedure using the base board of the card to locate the required items.

1. Locate the version number on the yellow sticker. If it is V11 or higher, and the card is an analog card, the board is a HIFGA2.
2. Locate the IC component containing the letters “HIGA” on it. If it has the part number “150-162” next to it, the board is a HIFGA2.

**NOTE:**
If you are using a TR114 HIFGA2 card, make sure that you are using TR114 Firmware V1.6.0 (Script Builder FAX Actions Release 3.5 uses this firmware). If you cannot use this firmware, reduce your data transfer size to 256 bytes by changing the **btcall.cfg** file as follows:

from **dma 512** to **dma 256**

or, if the application is not configured for DMA mode:

from **dma 0** to **dma -256**

## Placing the FAX Circuit Card in the Platform

For information about how to open your hardware platform and general instructions for installing circuit cards, see “General Steps for Circuit Card Installation” in Chapter 6, “Installing Circuit Cards—Introduction and Types,” of your hardware installation guide.

**CAUTION:**
*Observe proper electrostatic discharge precautions when you handle computer components. Wear a ground wrist strap that touches your bare skin and connect the strap cable to an earth ground.*

## Selecting an IRQ Setting

**NOTE:**
See “General Steps for Circuit Card Installation” in Chapter 6, “Installing Circuit Cards—Introduction and Types,” in your hardware installation guide for more information about how to select interrupt values.

Each hardware component in your system uses an IRQ (interrupt). When choosing an IRQ for your FAX board(s), you must select an IRQ that is not being used for other circuit cards and hardware components. Chapter 4, “Running the Configuration Program,” of your hardware installation guide describes how to use an automated system for determining IRQ settings.

You will need the output from the configuration program to install your hardware. Your system might have arrived with the output from this program in the shipping carton. Refer to this configuration data sheet to check the IRQs used by existing cards.

The table below summarizes commonly used IRQs. If your system does not contain a component listed in this table, the associated IRQ is a candidate for use with the FAX circuit card.

**CAUTION:**
*Configurations vary widely, so use Table 2-2 only as a guide. Your system might not have all the components listed.*

**Table 2-2. Commonly Used IRQ Vectors**

| Typical IRQ | Hardware |
|---|---|
| 1 | Keyboard |
| 2/9 | Tip/Ring card |
| 3 | Asynch port/PC-PBX card |
| 4 | Asynch port |
| 5 | Network interface card |
| 6 | Fixed disk |
| 7 | Printer |
| 8 | Real-time clock |
| 2/9 | Tip Ring card |
| 10 | Host interface card |
| 11 | Signal processor (SP) card |
| 12 | T1 card |
| 13 | fp |
| 14 | SCSI controller |
| 15 | Tip/Ring card (if not using IRQ 2/9) |

The **/etc/conf/cf.d/sdevice** file lists the actual hardware components on your system and their associated IRQs. See this file to determine which IRQs your system is using if you are not sure. The sixth column of this file lists the IRQ used by the component. The second column tells whether or not the component is active in your system.

An unused or inactive IRQ is a candidate for use with the FAX circuit card. The FAX circuit cards require a single IRQ no matter how many FAX circuit cards are installed in your system.

**CAUTION:**
*Do not alter the* **sdevice** *file.*

## Setting the IRQ Jumpers

Figure 2-4 shows the FAX circuit card. The jumpers are in two locations: top center and bottom right. The top center block of jumpers are not used. Figure 2-5 shows diagrams of J1 and J2. IRQ numbers are located beneath the jumper blocks. Place a jumper on the IRQ you select.

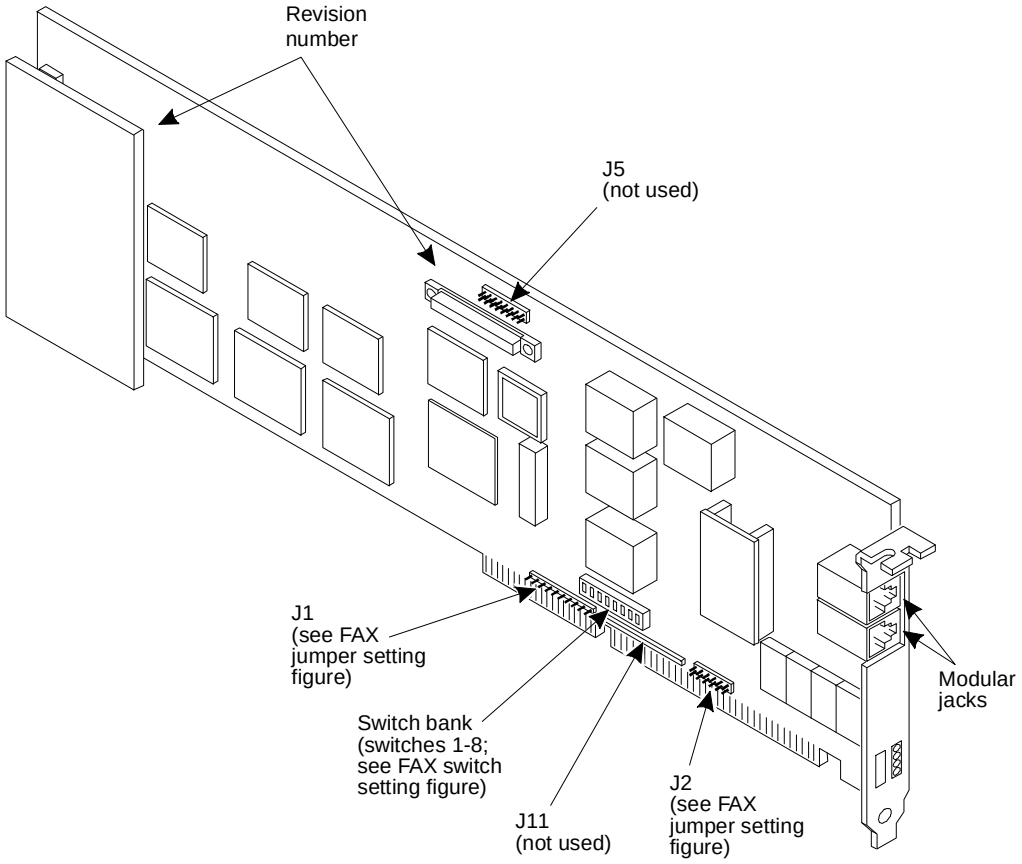



**Figure 2-4. FAX Circuit Card—Switch and Jumper Locations**

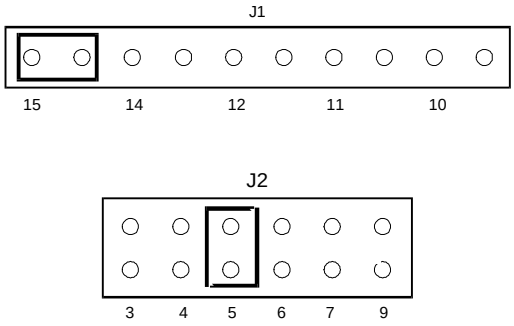



**Figure 2-5. FAX Circuit Card IRQ Jumper Settings: Examples Shown are for IRQ 15 and IRQ 5**

## Setting the I/O Address Switches for the FAX Circuit Card

The I/O address switch bank is located to the left of the bottom bank of jumpers. Figure 2-7 shows how to set the switches on the card. The first set of switches indicates settings for the first card installed (0x240), the second set of switches for the second card installed (0x260), and the third set of switches for the third card installed (0x2C0). If you are installing a single FAX circuit card, use the settings shown in the first set of switches (0X240).

**NOTE:**
There are multiple versions of the FAX circuit card, Revision 5, Revision 6, and higher. The revision number is indicated on the card at one of the two locations shown in Figure 2-4. Set the switches for both versions as shown in Figure 2-7 and observe the following:

- For Revision 5 cards, switch #1 does not affect the I/O address and must be OFF for all FAX circuit cards. Switch #2 does not affect the base I/O address and must be ON for *one and only one* FAX circuit card in the system.
- For Revision 6 cards, switch #1 does not affect the base I/O address. It is used to pull up the TR114 interrupt line and must be ON on *one and only one* FAX circuit card in the system.
- For cards beyond Revision 6, use the Revision 6 settings unless otherwise instructed.

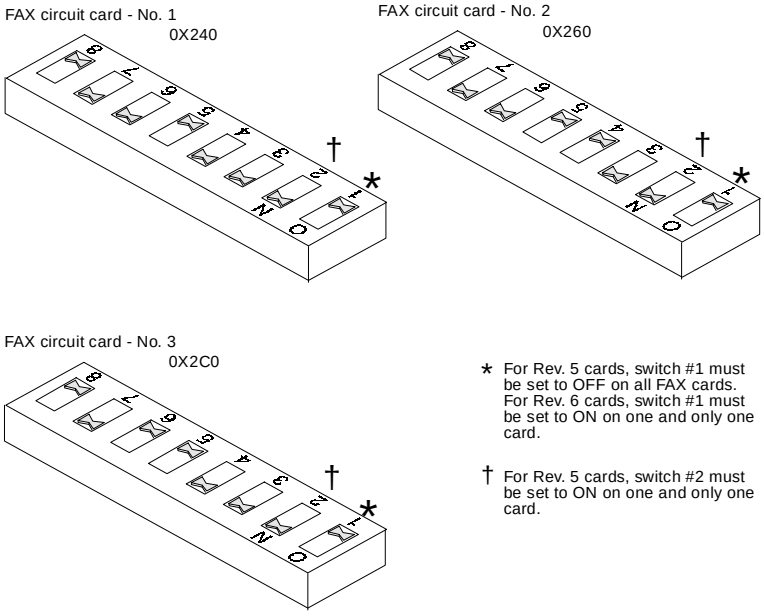



**Figure 2-7. FAX Circuit Card I/O Address Switch Settings**

### Connecting Analog Telephone Lines to the FAX Circuit Card

Each FAX circuit board comes with two telephony connection cables. Each cable supports two telephone lines, and the circuit card provides modular jacks for two cables. Each cable has an RJ14C connector on one end that plugs into the FAX circuit card. Two RJ11 single-line connectors on the other end of the cable plugs into the telephone line. Make sure that the T/R lines connected to the FAX channels:

- Have dial tone
- Are able to place calls

If you cannot place calls on your T/R lines, you will not be able to deliver FAXes. Make note of the telephone numbers associated with the T/R lines connected to your FAX circuit cards. You will need them later when administering FAX line extensions (see Chapter 3, "FAX Equipment Operations").

## Connecting the Laser FAX and Report Printer

Script Builder FAX Actions Release 3.5 supports HP LaserJet Series II fully-compatible printers for FAX and report printing. Before connecting a laser printer to the system:

1. Unpack the printer and install the toner cartridge according to the instructions in the printer documentation.
2. Load paper into the printer.
3. Plug the printer cord into a grounded electrical outlet.
4. Turn on the printer and follow the test procedures supplied in the printer documentation.
5. Set the printer options as indicated.
6. Turn off the power.

To connect the printer:

1. Plug the 36-position Centronics connector into the matching connector on the rear of the printer and secure.
2. Plug the other end of the cable into the parallel port on the processor and secure.

## Administering the Laser Printer

To administer the laser printer, follow the procedure “Configuring a Printer“ in Appendix A, “System Administration Features” in *CONVERSANT VIS V5.0 Operations*, 585-310-550.

## Removing the Script Builder FAX Actions Release 3.5 Software

Before you remove the Script Builder FAX Actions Release 3.5 software, make sure that the Script Builder FAX Actions Release 3.5 functionality is not used by any scripts running on the system. Scripts using the Script Builder FAX Actions Release 3.5 functionality will not function correctly once you remove the Script Builder FAX Actions Release 3.5 package. Either take the affected scripts out of service or remove the FAX functionality from them before proceeding.

Follow the steps below to remove the Script Builder FAX Actions Release 3.5 software.

1. Stop the system. See “Stopping the Voice System,” in Chapter 4, “Common Maintenance Procedures,” in *CONVERSANT VIS Version 5.0 Maintenance,* 585-310-153.
2. Enter **removepkg** from the system prompt.

   System response:

   The system displays a numbered list of installed packages.
3. Enter the number associated with the Script Builder FAX Actions Release 3.5 package and confirm your entry.

   System response:

   ```
   If you are upgrading to the AT&T FAX Attendant System,
   you probably want to save your FAXes and administrative
   files.

   Would you like to save your FAXes and the
   administrative files? y/n
   ```
4. Enter **y** if you want to save these files. Enter **n** if you do not want to save them.

   **NOTE:**
   You might want to save these files if you are upgrading to the AT&T FAX Attendant System. See Chapter 11, "Using AUDIX Voice Power and/or the AT&T FAX Attendant System with Script Builder FAX Actions", for more information.

**CAUTION:**
*If you choose not to save the FAXes and administrative files, they will be deleted from the system.*

A rebuild of the UNIX system begins. This takes approximately 2 minutes to complete.

When the system has finished rebuilding the UNIX system, you receive the system response:

```
The removal of the Script Builder FAX Actions Release
3.5 Package is now complete.
```

5. Press ENTER to shut down and reboot the system.

# FAX Equipment Operations

# 3

## What's in This Chapter

This chapter describes how to:

- Assign T/R extensions to FAX channels
- Place the FAX channels in the in-service state
- Diagnose FAX equipment
- Manage the FAX transmission queue

## When to Perform FAX Equipment Operations

Before you can send FAXes to your callers, you must administer the FAX equipment. FAX Equipment Operations are normally performed at the time the system is first installed. Thereafter, use FAX Equipment Operations only if there has been a problem with one of the FAX channels or it is necessary to change a telephone number or an extension on one of the FAX cards.

**NOTE:**
Save the FAX Actions Parameters in the FAX Actions Parameter Administration form after adding new FAX circuit cards and after bringing additional FAX channels into service. This ensures that the new FAX channels will be used for outgoing FAX delivery.

## Quick-Start Checklist

The following checklist summarizes the steps required to administer the FAX equipment.

| | |
|---|---|
| ✔ | Attach at least one working T/R line to the FAX circuit board. Make sure the line has dial tone and can place calls. |
| ✔ | Diagnose the FAX circuit card that has the T/R line attached to it. |
| ✔ | Use the LINES key in the FAX Channel Administration window to assign the proper extension number to each FAX channel. |
| ✔ | If necessary, use the CHGSTATE key to put the FAX channels in service. |

## Accessing the Script Builder FAX Actions Menu

To perform FAX Equipment Operations, you must first get to the Script Builder FAX Actions menu. To access the Script Builder FAX Actions menu:

1. If you are not already logged in, do so now.

   a. At the `Welcome to the AT&T 486 UNIX System` prompt, enter **root**.

   System response:

   `Password:`

   b. Enter your password.

   System response:

   You will eventually see the UNIX system prompt `#`.

2. Enter **cvis_menu**

   System response:

   The Voice System Administration menu appears (Figure 3-1).

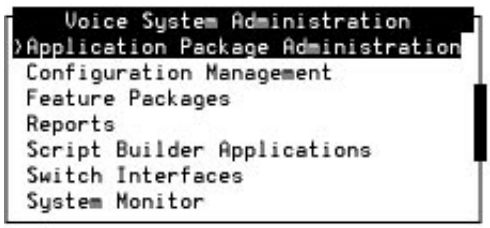



**Figure 3-1. Voice System Administration Menu**

3. Select Application Package Administration from the Voice System Administration menu.

   System response:

   The Application Package Administration menu appears (Figure 3-2).

   **NOTE:**
   If FAX Attendant is installed with Script Builder FAX Actions, the Application Package Administration menu shown in Figure 3-2 will show “FAX Attendant” instead of “Script Builder FAX Actions”.

   If AUDIX Voice Power is installed with Script Builder FAX Actions, the Application Package Administration menu shown in Figure 3-2 will show both “AUDIX Voice Power” and “Script Builder FAX Actions”.

   If both FAX Attendant and AUDIX Voice Power are installed with Script Builder FAX Actions, the Application Package Administration menu shown in Figure 3-2 will show “AUDIX Voice Power/FAX Attendant” instead of “Script Builder FAX Actions”.

   Refer to Chapter 11, "Using AUDIX Voice Power and/or the AT&T FAX Attendant System with Script Builder FAX Actions" for information on how to install and use these packges with Script Builder FAX Actions Release 3.5.

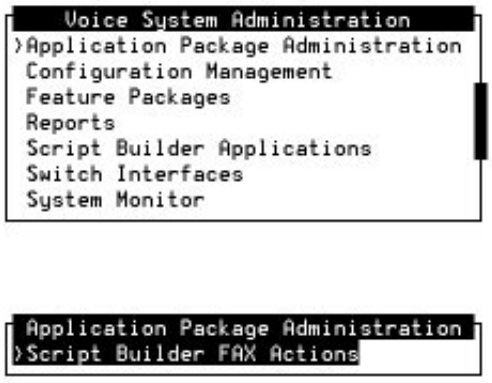



**Figure 3-2. Application Package Administration Menu**

4. Select Script Builder FAX Actions (or FAX Attendant or AUDIX Voice Power/FAX Attendant) from the Application Package Administration menu.

   System response:

   The Script Builder FAX Actions menu appears as shown in Figure 3-3, or the AUDIX Voice Power/FAX Attendant menu appears as shown in Figure 3-4.

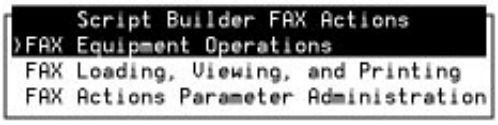



**Figure 3-3. Script Builder FAX Actions Menu**

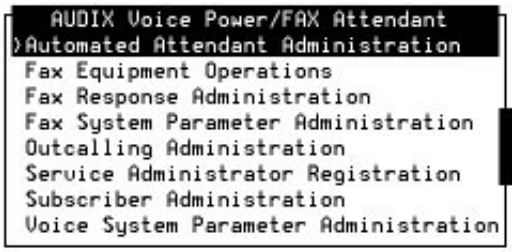



**Figure 3-4. AUDIX Voice Power/FAX Attendant Menu**

**NOTE:**
If AUDIX Voice Power is not installed, Figure 3-4 will show the Automated Attendant Administration option, and will not show “AUDIX Voice Power” in the title of the menu.

5. Choose one of the following options from the menu:

   - FAX Equipment Operations — From here, you administer and diagnose FAX boards and look at the FAX transmission queue. This option is further explained in the remainder of this chapter.
   - FAX Loading, Viewing, and Printing (Fax Response Administration option in Figure 3-4) — From here, you input FAXes into the system for later transmission to callers. You can also view the FAXes on the console and print them if desired. Refer to Chapter 5, "Loading, Viewing, and Printing FAXes" for further information.
   - FAX Actions Parameter Administration (Fax System Parameter Administration option in Figure 3-4) — From here, you administer the various system parameters that control the operation of the system. Refer to Chapter 4, "Administering Script Builder FAX Actions Release 3.5" for further information.

**NOTE:**
Refer to the FAX Attendant and/or AUDIX Voice Power documentation for information on the menu selections specific to those packages.

# FAX Equipment Operations

To perform FAX Equipment Operations, select FAX Equipment Operations from the Script Builder FAX Actions menu. The FAX Equipment Operations Menu appears (Figure 3-5). If you have FAX Attendant or AUDIX Voice Power installed, refer to steps 3 through 5 in the procedure "Accessing the Script Builder FAX Actions Menu" earlier in this chapter.


**Figure 3-5. FAX Equipment Operations Menu**

Choose one of the following options from the FAX Equipment Operations menu:

- FAX Channel Administration — From here, you assign telephone numbers to your FAX channels and place your FAX channels in the in-service state.
- FAX Transmission Control — From here, you can look at the FAX transmission queue and remove FAXes from the transmission queue.
- FAX Equipment Diagnostics — From here, you can diagnose the FAX circuit cards.

## FAX Equipment Diagnostics

FAX Equipment Diagnostics provides a way to determine, on a per-channel and a per-card basis, whether or not the FAX circuit cards installed in your system are working properly. It is also a way of getting your FAX channels in the in-service state after you have connected working T/R lines to them.

FAX Equipment Diagnostics do the following:

- Check DMA transfers
- Check interrupts
- Check onboard RAM
- Check the connection pins on the AT bus
- Check the CPU
- Go offhook and listen for dial tone
- Loopback testing on analog paths up to the telephone interface
- Gate array scanpath testing

To diagnose the FAX equipment:

1. From the FAX Equipment Operations menu, select FAX Equipment Diagnostics.

   System response:

   The Diagnose FAX Equipment form appears (Figure 3-6).

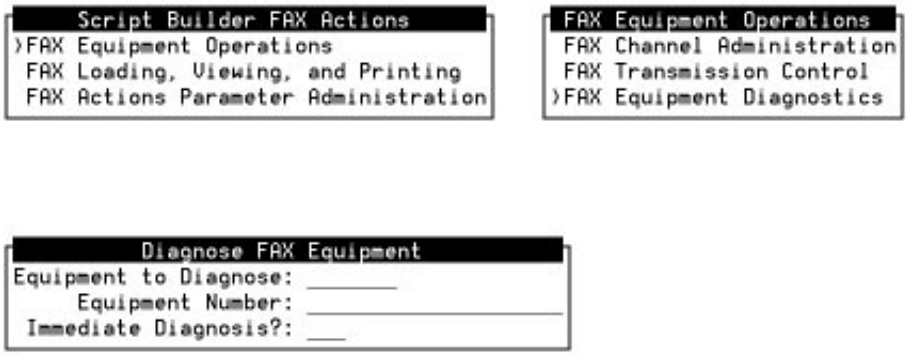



**Figure 3-6. Diagnose FAX Equipment Form**

2. In the Equipment To Diagnose field, enter **ca** for "card" or **ch** for "channel," or make your choice by pressing CHOICES when the cursor is in this field.
3. In the Equipment Number field, enter the equipment number and press ENTER. Acceptable values for card numbers are 0 to *n*-1, where *n* is the number of FAX cards installed in the system. Acceptable values for channel numbers are 0 to 4*n*-1 or all.
4. In the Immediate Diagnosis? field, enter either Yes or No and press ENTER, or make your choice by pressing CHOICES when the cursor is in this field. If you select immediate diagnosis, the circuit cards are immediately seized from whatever they are doing and diagnosed. If you do not select the immediate option, the system waits for the channel to complete its work before it is diagnosed. If you elect to diagnose immediately, any operations currently underway on the equipment specified are terminated. You then have the opportunity to confirm or cancel the operation.

   **CAUTION:**
   *If you request immediate diagnosis, FAX jobs currently being transmitted will be interrupted.*

5. After you enter all information, press SAVE.

   System response:

   The FAX Equipment Diagnostics Results screen appears (Figure 3-7). In the example below, only the first channel is connected to a T/R line. The other three channels do not pass diagnostics.

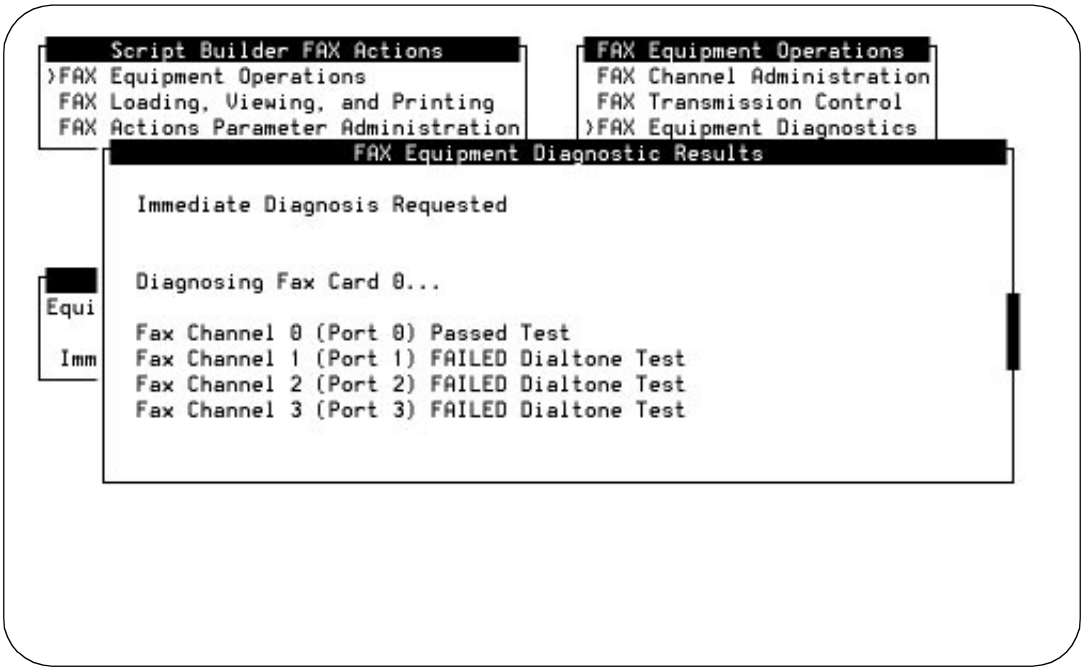



**Figure 3-7. Fax Equipment Diagnostics Results Screen**

## FAX Channel Administration

Use FAX Channel Administration to assign telephone numbers or extensions to and to change the state of your FAX Channels. To perform FAX Channel Administration, select FAX Channel Administration from the FAX Equipment Operations menu (Figure 3-5). The FAX Channel Administration screen appears (Figure 3-8) and displays information describing the state of your FAX Equipment.

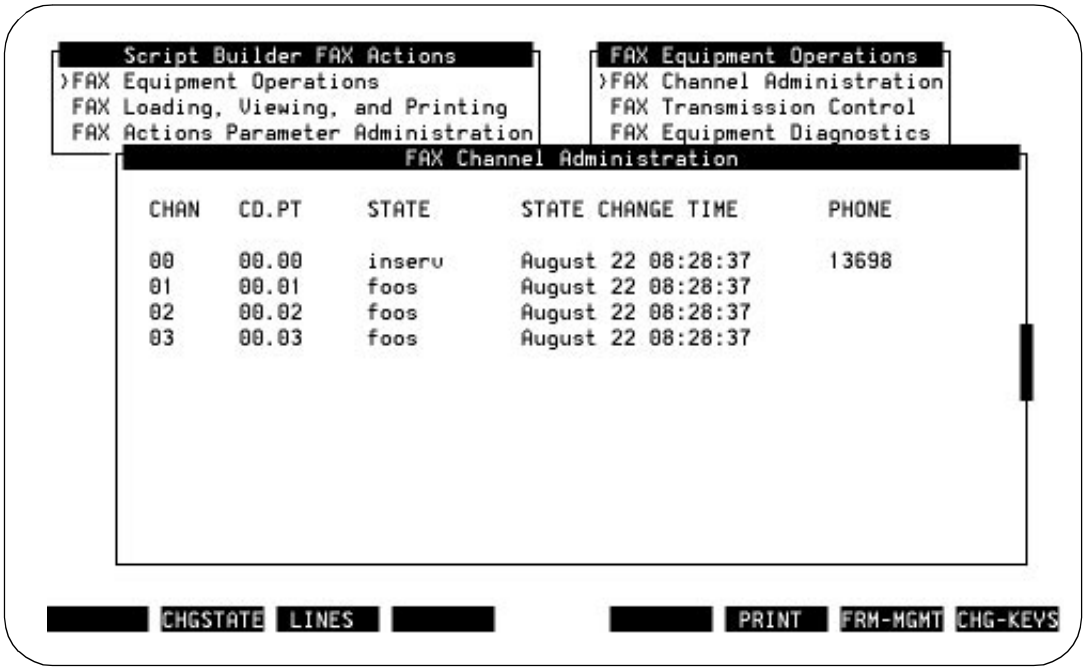



**Figure 3-8. FAX Channel Administration Screen**

From this window, you can change the state of your FAX equipment and administer your FAX line extensions.

The states of equipment appearing in this window have the same meanings as their counterparts in CONVERSANT VIS. These states are:

- inserv (in service)
- foos (facility out of service)
- manoos (manually taken out of service)
- broken

## Administering FAX Lines

Each working FAX channel has a T/R line connected to it. Each T/R line has a telephone number or extension associated with it. Script Builder FAX Actions Release 3.5 needs to know about these extensions. You inform the system about the extensions connected to your FAX channels using the LINES key in the FAX Channel Administration window. To administer your FAX lines:

1. From the Fax Channel Administration window, press CHG-KEYS.
2. Press LINES.

   System response:

   The Administer Fax Line Extension form appears (Figure 3-9).

   Use the Administer FAX Line Extension form to add or change telephone extension numbers associated with FAX equipment channels.

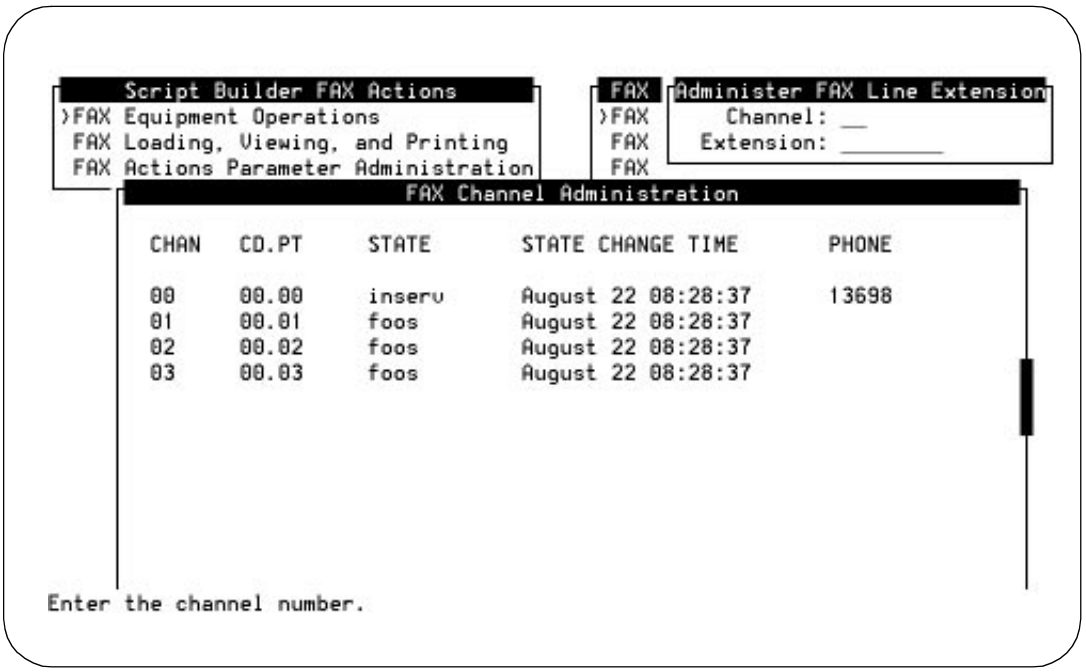



**Figure 3-9. Administer FAX Line Extension Form**

3. In the Channel field, enter the channel number to which you are assigning an extension and press ENTER.
4. In the Extension field, enter the telephone extension number and press ENTER.
5. Press SAVE to save the data in the system.

## Changing the State of the FAX Equipment

You may want to change the state of your FAX channels to take a particular channel out of service to perform diagnostics or to place a channel back in service. To change the state of your FAX equipment:

1. From the FAX Channel Administration window, press CHG-KEYS.
2. Press CHGSTATE.

   The Change State of FAX Equipment form appears (Figure 3-10).

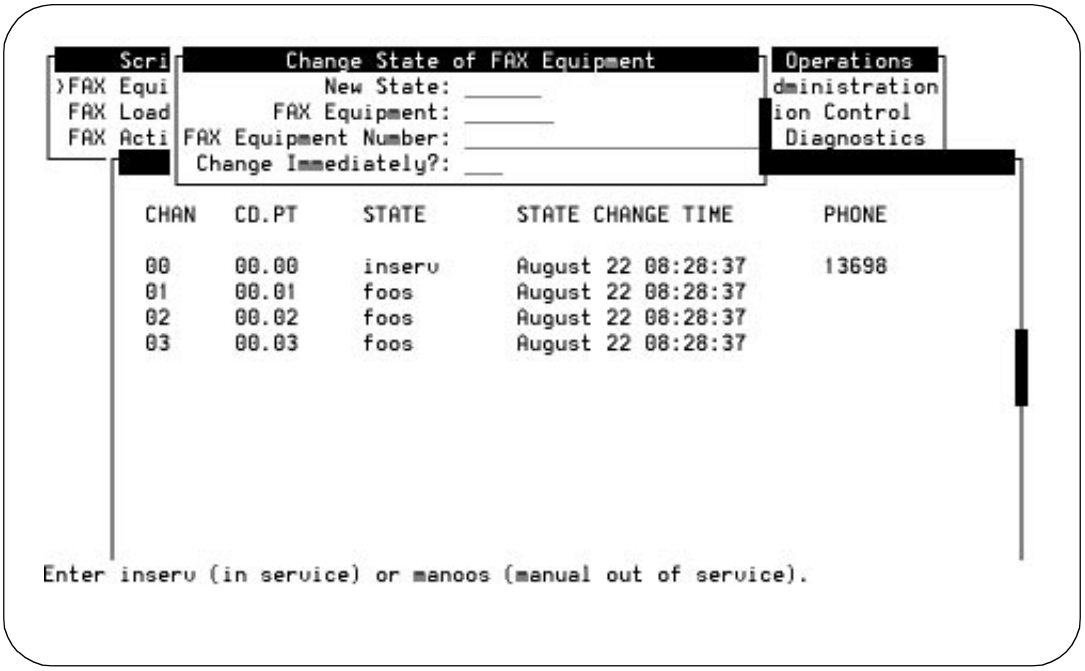



**Figure 3-10. Change State of FAX Equipment Form**

3. This form works like its voice circuit card counterpart. To change the state of a FAX channel:

   a. In the New State field, enter either **i** for “inserv” or **m** for “manoos” and press ENTER, or make your choices by pressing CHOICES when the cursor is in this field.

   b. In the Fax Equipment field, enter either **ca** for “Card” or **ch** for “Channel” and press ENTER, or make your choices by pressing CHOICES when the cursor is in this field.

   c. In the Equipment Number field, enter the equipment number or range and press ENTER.

   d. In the Change Immediately? field, enter **yes** or **no** or make your choices by pressing CHOICES when the cursor is in this field.

      **NOTE:**
      If you elect to change the state immediately, any operations currently underway on the equipment specified will be terminated. You then have the opportunity to confirm or cancel the operation. FAX Jobs interrupted by this procedure will be rescheduled.

   e. When you have completed the form, press SAVE to enter your changes into the system.

## FAX Transmission Control

The FAX Transmission Control screen allows you to view the list of jobs currently in the FAX queue waiting for transmission. The FAX Transmission Control feature provides a snapshot of system transmissions at the moment you select FAX Transmission Control from the FAX Equipment Operations menu and press ENTER.

This feature allows you to improve the performance of the system by

- Eliminating jobs that overload the FAX transmission queue and hinder system performance
- Canceling large jobs that may have been sent by mistake

When you select FAX Transmission Control from the FAX Equipment Operations menu, the system presents the FAX Transmission Control screen (Figure 3-11).

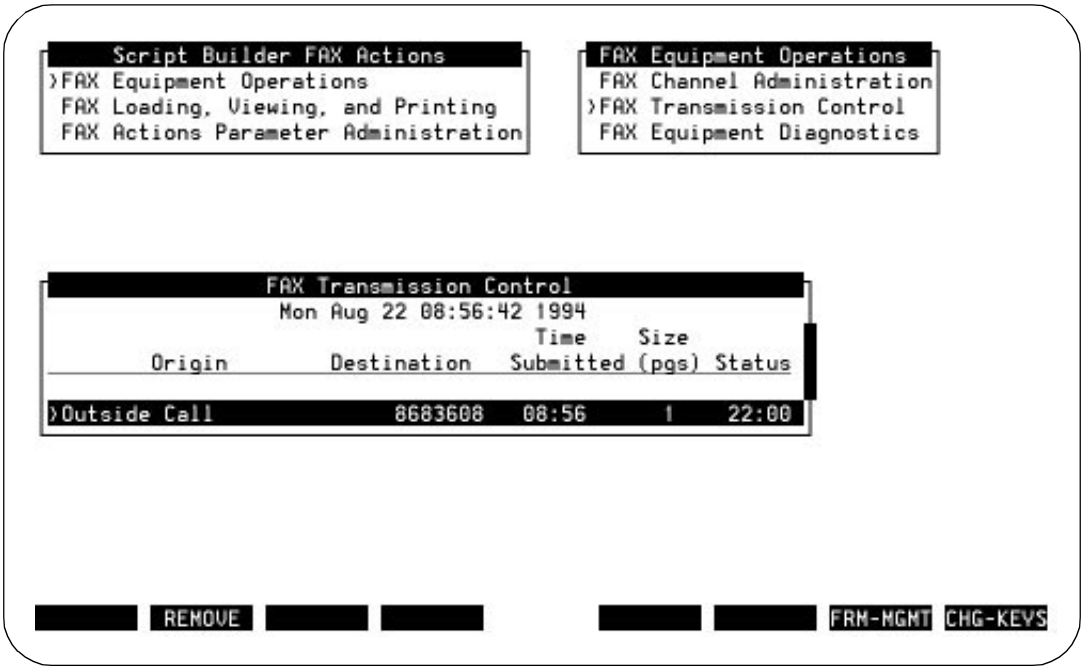



**Figure 3-11. FAX Transmission Control Screen**

The FAX Transmission Control screen lists the time and date you selected this feature and the following for every FAX job in the system in the order in which they appear in the FAX transmission queue:

- The origination of the transmission
- The destination of the transmission

  **NOTE:**
  The destination is the place where FAX Attendant will print the FAX message. This can be either a telephone number (that has a FAX machine connected) or a laser printer (lp).

- The time the FAX was submitted
- The size (in pages) of the FAX
- The transmission status of each FAX transmission

You will also see either the time transmission will begin or one of three status labels assigned to each FAX message:

- ACTIVE signifies that the job is currently on one of the FAX lines or a laser printer.
- SPOOLED signifies that the job has been submitted to the print spooler.
- WAITING signifies that the job is waiting for a free FAX channel.

The FAX Transmission Control screen lists the status of the transmission queue at the time you selected FAX Transmission Control from the FAX Equipment Operations menu. The system does not automatically update the FAX Transmission Control screen when new entries are added to the FAX queue while you are looking at the screen. To view updated information:

1. From the FAX Transmission Control screen press CANCEL.
2. Press ENTER.

## Canceling FAX Transmissions

FAX Transmission Control allows you to cancel FAX transmissions. For example, use this feature if you mistakenly sent a FAX and want to cancel it. To cancel a FAX transmission:

1. On the FAX Transmission Control screen, press CHG-KEYS to select the alternate key set.
2. Move the cursor to the FAX you want to cancel and press REMOVE.

   System response:

   The system prompts you to press Y to remove the message or N to keep the message.
3. Press Y.

   System response:

   The system notifies you that the message was removed.
4. Press any key to continue.

   System response:

   The system returns you to the FAX Equipment Operations menu.

# Administering Script Builder FAX Actions Release 3.5

# 4

## What's in This Chapter

This chapter describes:

- How to administer the Script Builder FAX Actions Release 3.5 parameters
- What each parameter means

## What the Script Builder FAX Actions Parameters Do

The Script Builder FAX Actions Parameters provide information to the system about how you would like your system to behave. The Script Builder FAX Actions Parameters must be administered for Script Builder FAX Actions Release 3.5 to perform correctly.

**NOTE:**
Save the FAX Actions Parameters in the FAX Actions Parameter Administration form after adding new FAX circuit cards and after bringing additional FAX channels into service. This ensures that the new FAX channels will be used for outgoing FAX delivery.

## Quick-Start Checklist

It is likely that you will only need to administer the “Dial String for Outside Call” parameter. Initially, the default will be fine for the other parameters. If you want to get started quickly, use the following checklist.

| | |
|---|---|
| ✔ | On the Script Builder FAX Actions Parameter form, enter the proper “Dial String For Outside Call”.Outside the United States and Canada, leave this blank. |

## Accessing the FAX Actions Parameter Screen

1. Follow the instructions "Accessing the Script Builder FAX Actions Menu" in Chapter 3, "FAX Equipment Operations" to access the Script Builder FAX Actions menu.

   System response:

   The Script Builder FAX Actions menu appears (Figure 4-1), or if you have FAX Attendant and/or AUDIX Voice Power installed, the AUDIX Voice Power/FAX Attendant menu appears as shown in Figure 3-4.

   **NOTE:**
   If FAX Attendant is not installed, Figure 3-4 will not show the Automated Attendant Administration option, and will not show “FAX Attendant” in the title of the menu.

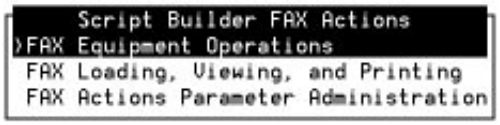



**Figure 4-1. Script Builder FAX Actions Menu**

2. Select FAX Actions Parameter Administration (or FAX System Parameter Administration).

   System response:

   The FAX Actions Parameter Administration form appears as shown in Figure 4-2, (or the FAX System Parameter Administration menu appears as shown in Figure 4-3).

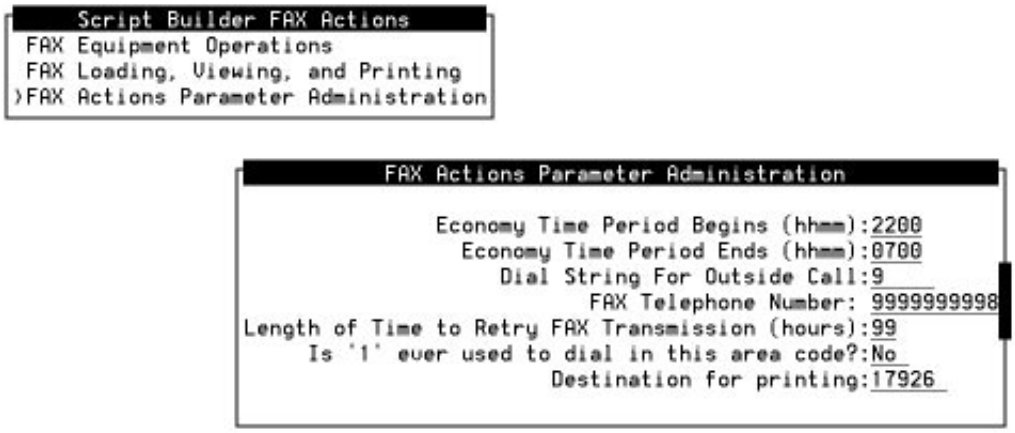



**Figure 4-2. FAX Actions Parameter Administration Form**


**Figure 4-3. Fax System Parameters Administration Menu**

3. From the Fax System Parameters Administration menu, select General Fax Parameters Administration.

   System response:

   The General Fax Parameters Administration screen appears as shown in Figure 4-4.

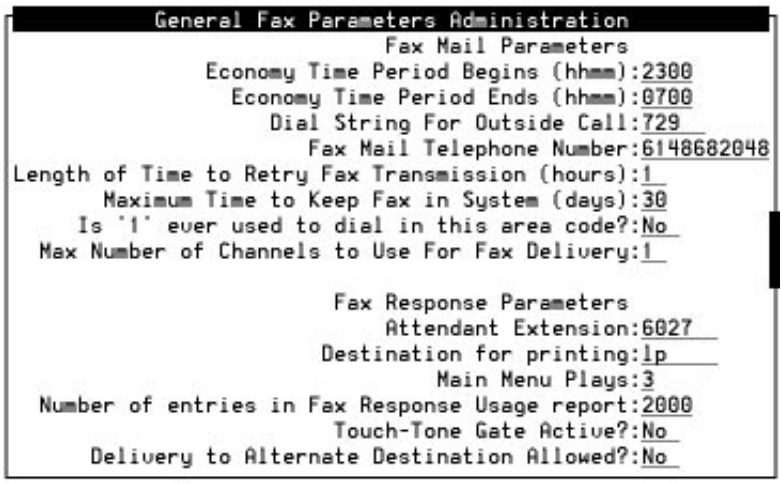



**Figure 4-4. General Fax Parameters Administration Screen**

4. Administer the parameters as desired.

   **NOTE:**
   The following fields on the General Fax Parameters Administration screen do not apply to Script Builder FAX Actions R3.5: Maximum Time to Keep FAX in System, Max Number of Channels to Use For Fax Delivery, Attendant Extension, Main Menu Plays, Number of entries in FAX Response Usage report, Touch-Tone Gate Active, Delivery to Alternate Destination Allowed. Refer to the FAX Attendant documentation for information on these fields.

5. When you are finished administering the parameters, press SAVE. The values you entered are now active.

## FAX Actions Parameters Defined

The following parameters appear in the FAX Actions Parameter Administration screen (Figure 4-2).

- Economy Time Period Begins — Specifies the time at which the economy time period begins. All FAX messages that are set for economy delivery (an option with the FAX_Send action) will be transmitted at this time. Set this time to be the beginning of the most inexpensive calling period. Use a 24-hour clock when entering digits, for example, 2300. The default is 2300 (11 p.m.).
- Economy Time Period Ends — Specifies the time at which the economy time period ends. Any FAX messages that are set for economy delivery will not be transmitted after this time. Use a 24-hour clock when entering digits, for example, 0700. The default is 0700 (7 a.m.).
- Dial String for Outside Call — Specifies the dial string the FAX channel needs to dial to get an outside line. If this field is left blank, no automatic dial string will be used.

  **NOTE:**
  Leave this field blank outside the United States and Canada. When a value is placed in this field, Script Builder FAX Actions Release 3.5 automatically attaches a "1" to the FAX Delivery Number. This works when the system is installed in the United States and Canada, where you must dial a "1" before dialing the area code. This does not work outside the United States and Canada, however. Outside the United States and Canada, leave this field blank and use the "Concat5" action in your application to append any needed outside dial strings to the FAX Delivery Number entered by the caller (see "FAX_Send: Tips" in Chapter 6, "Using Script Builder FAX Actions Release 3.5").

- FAX Telephone Number — Specifies the 10-digit telephone number for your system. This arbitrary number identifies the system to calling FAX machines. This number does not have to be associated with a working telephone line.
- Length of Time to Retry FAX Transmission — Specifies the amount of time (in hours) the system will continue trying to transmit a FAX message. If the FAX message is not transmitted by the length of time specified, the system stops trying to transmit the message. Initially, it is recommended that you leave the default of 99 hours as the setting.

**NOTE:**
The retry strategy was designed to ensure delivery of the FAX. If the initial transmission fails, the first retransmission is attempted 5 minutes after the initial transmission failed. If the first retransmission fails, the second retransmission begins 10 minutes after the first retransmission failed. If the second retransmission fails, the third retransmission begins 20 minutes after the second retransmission failed, and so on.

- Is “1” ever used to dial in this area code? — Specifies whether the system needs to add a “1” when dialing outside, nonlocal numbers within the area code. This is different than the “1” attached before the area code when using a Dial String for Outside Call as described previously. The default is no.
- Destination for printing — Specifies where FAXes are printed during FAX Loading, Viewing, and Printing. This value should be “lp” (for laser printer) or a valid FAX machine telephone number or extension. If you enter “**lp**”, the system prints FAXes on the laser printer. If you enter a telephone number or extension, the system transmits the FAXes to the FAX machine connected to the specified telephone number or extension. The default is 9999.

# Loading, Viewing, and Printing FAXes

# 5

## What's in This Chapter

Before you can send FAXes to your callers or view, print, or search for them yourself, you must first load the FAXes into the system.

This chapter describes how to:

- Load FAXes into the system
- View FAXes that have been loaded into the system
- Print FAXes that have been loaded into the system
- Search for FAXes used by the system

**NOTE:**
FAX loading involves FAXing your information into the system. You will need a FAX machine nearby when loading FAXes into the system.

**NOTE:**
You can skip loading FAXes into the system if you are sending text files to the caller.

## Quick-Start Checklist

The following checklist summarizes the steps required to load FAXes into your system.

| | |
|---|---|
| ✔ | Enter a FAX ID into the second column of the FAX Loading, Viewing, and Printing form for each FAX you want to load into your system. |
| ✔ | Press the FAX-ADM key. You might first have to press the CHG-KEYS key. |
| ✔ | Highlight the FAX you want to load. Press the LOAD-FX key |
| ✔ | Follow the instructions on the screen that tell you to dial a certain number and press the start key on your FAX machine. |
| ✔ | Press VIEW-FX to look at the FAX just loaded. |

## Sending Graphic Files and Text Files

Script Builder FAX Actions Release 3.5 can send either graphic files or text files to the caller. The sections below describe both file types.

### Graphic Files

Graphic files are loaded into the system using the FAX Loading, Viewing, and Printing screen. During loading, the sheets of paper being loaded are FAXed into the system and stored as files on the system hard disk. The particular file format used is TIF Class F.

Once loaded into the system, these FAXes are available to the "FAX_Send Action", "FAX_Current Action", "FAX_Combine Action", and "FAX_CovrPage Action" (see Chapter 6, "Using Script Builder FAX Actions Release 3.5"). To select these FAXes, use the CHOICES key when defining these actions.

### Text Files

Text files, like graphic files, are stored on the system hard disk. However, they are stored in text format, instead of TIF Class F format. To create text files, you can:

- Use a text editor such as "*vi*" from the system console.
- Echo text into a file from the system console or from a running application (for example, "echo hello world > /tmp/textfile" puts the text "hello world" into the text file "***/tmp/textfile***").
- Execute a database query and put its output into a text file.

## Accessing the FAX Loading, Viewing, and Printing Screen

1. Follow the procedure "Accessing the Script Builder FAX Actions Menu" in Chapter 3, "FAX Equipment Operations" to access the Script Builder FAX Actions menu (Figure 5-1).

   System response:

   The Script Builder FAX Actions menu appears (Figure 5-1), or if you have FAX Attendant and/or AUDIX Voice Power installed, the AUDIX Voice Power/FAX Attendant menu appears as shown in Figure 3-4.

   **NOTE:**
   If FAX Attendant is not installed, Figure 3-4 will show the Automated Attendant Administration option, and will not show “FAX Attendant” in the title of the menu.

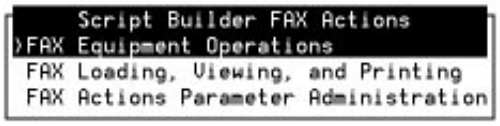



**Figure 5-1. Script Builder FAX Actions Menu**

2. Select FAX Loading, Viewing, and Printing (or FAX Response Administration).

   System response:

   The FAX Loading, Viewing, and Printing form appears as shown in Figure 5-2 (or the FAX Response Administration menu appears as shown in Figure 5-3). The FAX Loading, Viewing, and Printing form lists information about each FAX used by the system.

3. If you have FAX Attendant installed:

   a. From the FAX Response Administration menu, select FAX Response Workspace Adminstration (Figure 5-3).

   b. From the FAX Response Workspace Adminstration menu select Edit Workspace (Figure 5-3).

      System response:

      The Edit Workspace/Edit Active Fax Messages form appears as shown in Figure 5-4. Refer to the FAX Attendant documentation for instructions on using this form.

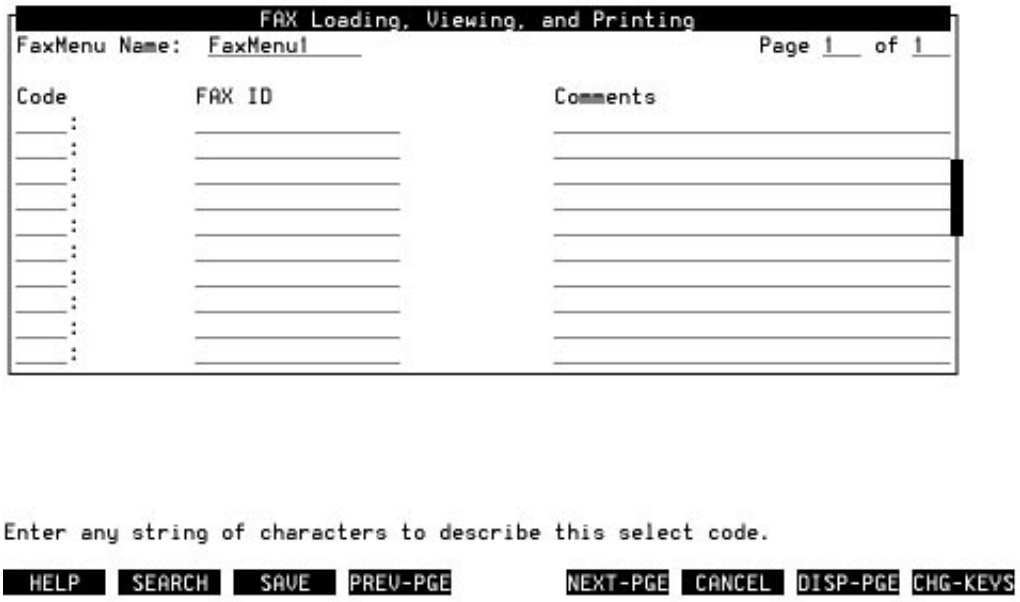



**Figure 5-2. FAX Loading, Viewing, and Printing Form**


**Figure 5-3. Fax Response Administration Menu**

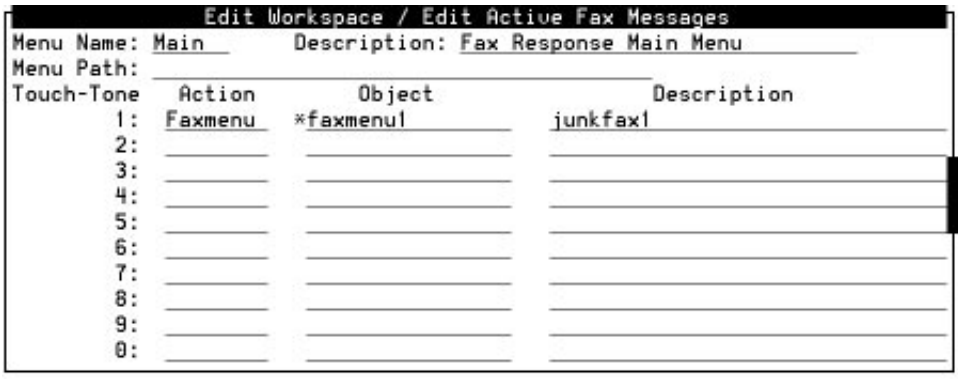



**Figure 5-4. Edit Workspace/Edit Active Fax Messages Form**

4. Provide the following information on the FAX Loading, Viewing, and Printing form (Figure 5-6 shows an example of this form with entries):

   **NOTE:**
   Your system comes with ten FAXes loaded: fax1, fax2, ..., fax3.

   - Code — This is an arbitrary four-digit code for each FAX.
   - FAX ID — Entries in this field must be in the form fax*N*, where *N* is a number. For example, fax1, fax2,..., fax100, fax101,..., fax998, fax999. Fax999 is the highest FAX ID allowable. To load more than 999 FAXes into your system, see Chapter 9, "Advanced Topics".

     **NOTE:**
     When entered into the FAX ID column, the FAX ID appears with an asterisk in front of it. This tells you that the FAX has not yet been loaded into the system. When the FAX is loaded into the system, the asterisk disappears.

   - Comments — This optional field is for comments. Enter information here that will help you remember what the FAX is.

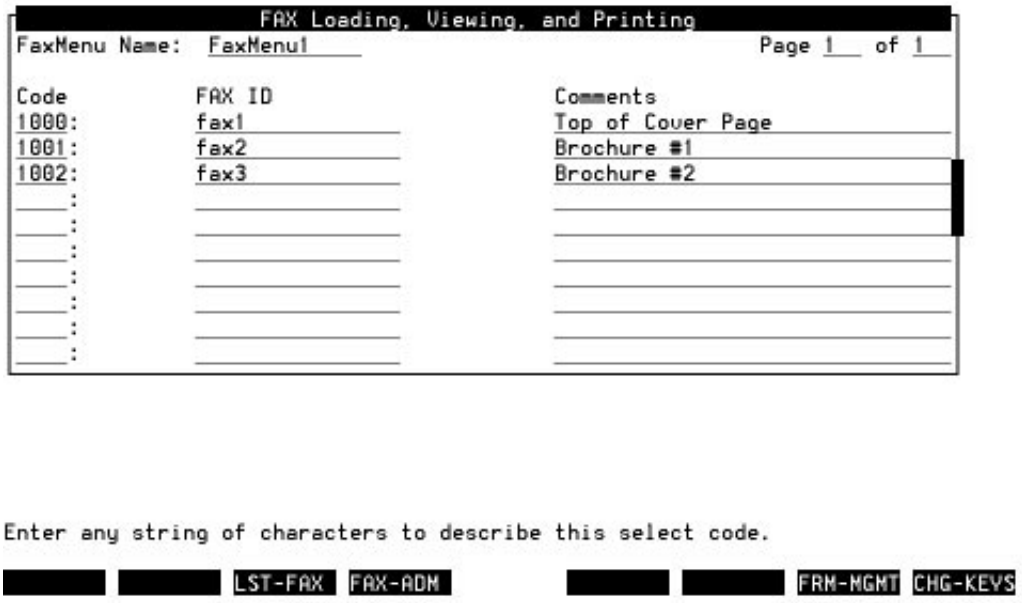



**Figure 5-6. Example of a FAX Loading, Viewing, and Printing Form**

## LOADing the FAX

1. To load the FAXes, press the FAX-ADM key.

   System response:

   The FAX Administration menu appears (Figure 5-7) listing all the FAXes referenced in the FAX Loading, Viewing, and Printing form.

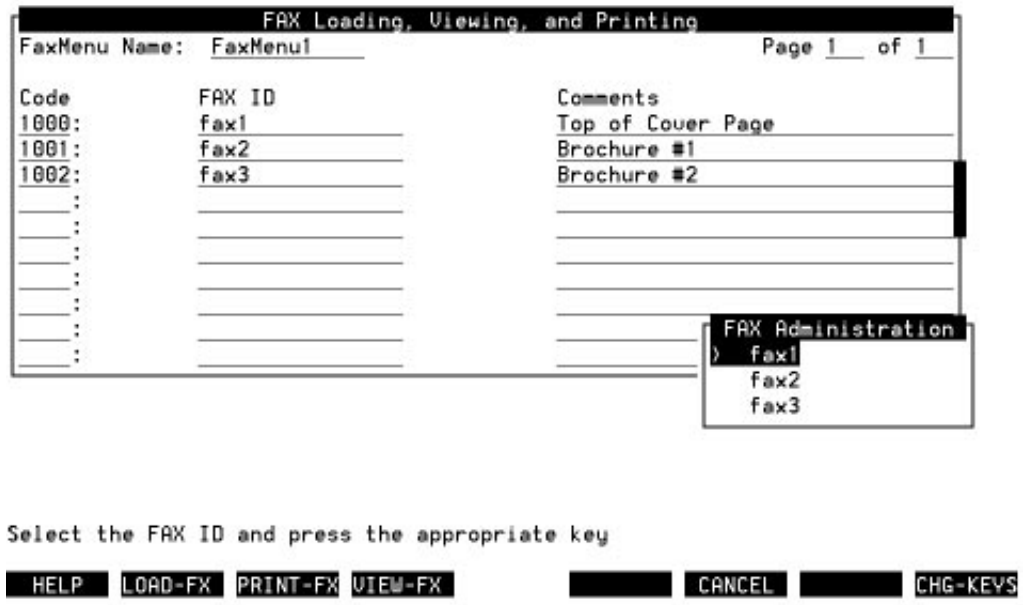



**Figure 5-7. FAX Administration Menu**

2. Press the LOAD-FX key.

   System response:

   An information screen appears (Figure 5-8).

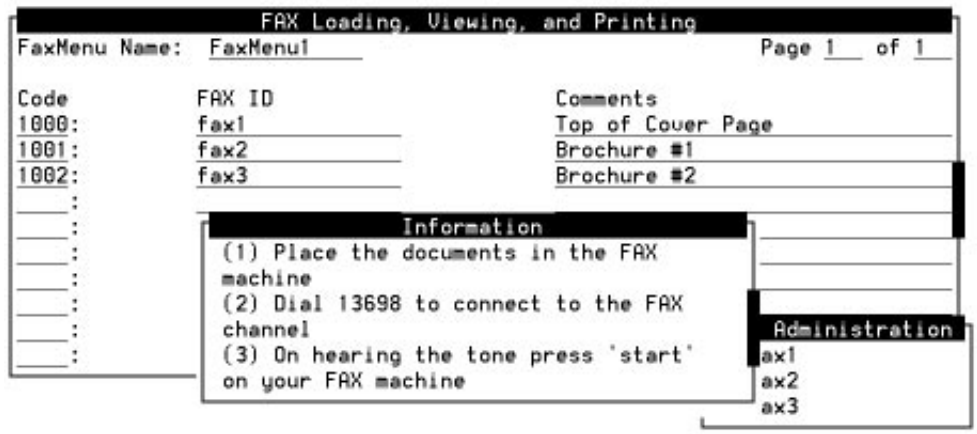



**Figure 5-8. Loading FAX Information Screen**

3. Follow the instructions presented on the information screen. That is:
   a. Place the document you want to load into your FAX machine.
   b. Dial the FAX channel extension listed in the information screen.
   c. Press the START button on your FAX machine.
   d. Press any key to continue.

System response:

The FAX is loaded into the system.

**NOTE:**
The extension displayed in Figure 5-8 is an extension connected to one of your FAX channels. The extensions connected to your FAX channels are administered in Figure 3-9.

## VIEWing the FAX

When loading is completed, you can view, print, and search for available FAXes. To view a FAX:

1. Press VIEW-FX from the FAX Administration menu (Figure 5-7).

   System response:

   The View FAX information screen appears.

2. Follow the instructions on the screen.
3. Press ESC to return to the previous screen.

## PRINTing the FAX

To print a FAX:

1. Press PRINT-FX from the FAX Administration menu (Figure 5-7).

   System response:

   The FAX is printed to the location specified in the Destination for printing field in the FAX Actions Parameter Administration form.

   **CAUTION:**
   *If you set the Destination for printing parameter to lp in the FAX Actions Parameter Administration form, make sure your laser printer is correctly connected and administered. If your laser printer is not correctly connected and administered, the FAX will not be printed.*

## Listing Available FAXes

To list the FAXes available to the system, press LST-FAX from the FAX Loading, Viewing, and Printing form (Figure 5-6).

System response:

The Script Builder FAX Actions FAXes menu appears (Figure 5-9).

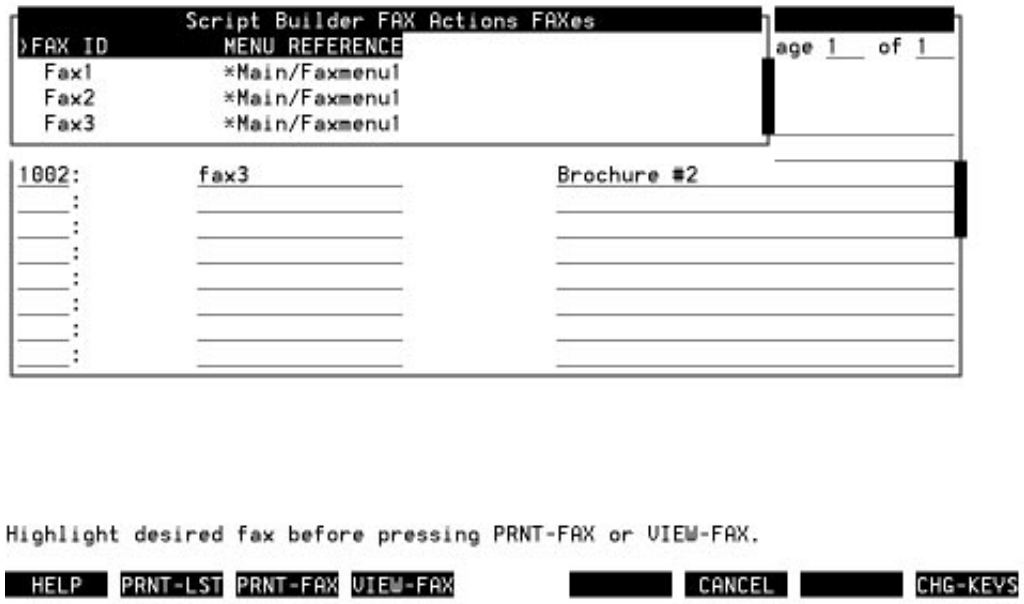



**Figure 5-9. Script Builder FAX Actions FAXes Menu**

From this menu, you can place the cursor on a specific FAX and press any of the following:

- PRNT-LST to print the list to your laser printer
- PRNT-FAX to print the FAX
- VIEW-FAX to view the FAX on the system console

## Searching for Available FAXes

1. To search for a FAX available to the system, press SEARCH from the FAX Loading, Viewing, and Printing form (Figure 5-2).

   System response:

   The Search for FAX form appears (Figure 5-10).

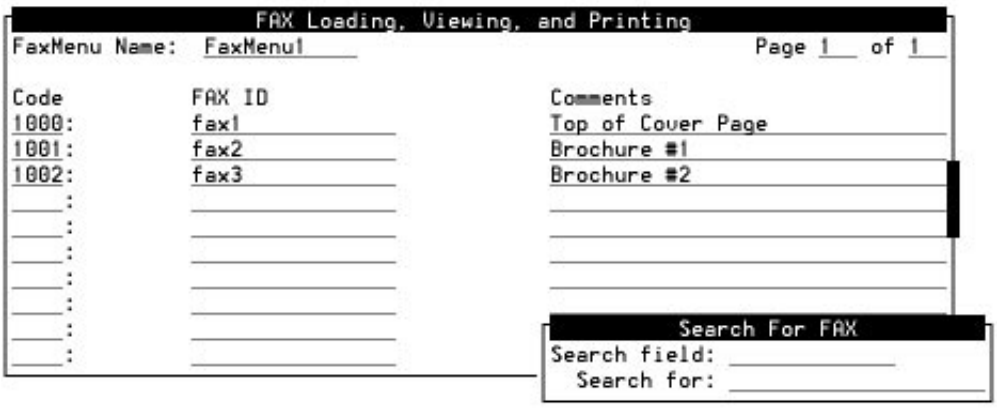



**Figure 5-10. Search for FAX Form**

2. Enter one of the following fields into the Search field to use as the key for the search:
   - Code
   - FAX ID
   - Comments
3. Enter the value of the Search field that you are searching for into the Search for field (for example, Top of Cover Page).
4. Press SAVE to begin the search.
5. System response:

   The cursor is placed on the result of the search, if any.

# Using Script Builder FAX Actions Release 3.5

# 6

## What's in This Chapter

This chapter tells you how to use Script Builder FAX Actions Release 3.5 within your applications, inicluding:

- Descriptions of the "FAX_Send Action", "FAX_Current Action", "FAX_Get Action", "FAX_CovrPage Action", "FAX_Combine Action", "Exec_UNIX Action", "FAX_CNG Action", and "Concat5 Action" actions
- Instructions and tips for writing scripts using Script Builder FAX Actions Release 3.5

## Accessing the FAX Actions on the Script Builder Choices Menu

The Action Choices window of Script Builder contains all the Script Builder Actions available to the application developer. For example:

- Answer Phone, for answering the telephone and beginning the application
- Prompt and Collect, for requesting caller input
- Announce, for playing a voice announcement to the caller

When you install the Script Builder FAX Actions Release 3.5 on a system, the following eight additional actions appear in the Script Builder Action Choices menu (Figure 6-2):

- Concat5
- Exec_UNIX
- FAX_Combine
- FAX_CovrPage
- FAX_Current
- FAX_CNG
- FAX_Get
- FAX_Send

You can use the actions provided by the Script Builder FAX Actions Release 3.5 package like any other actions in any Script Builder application.

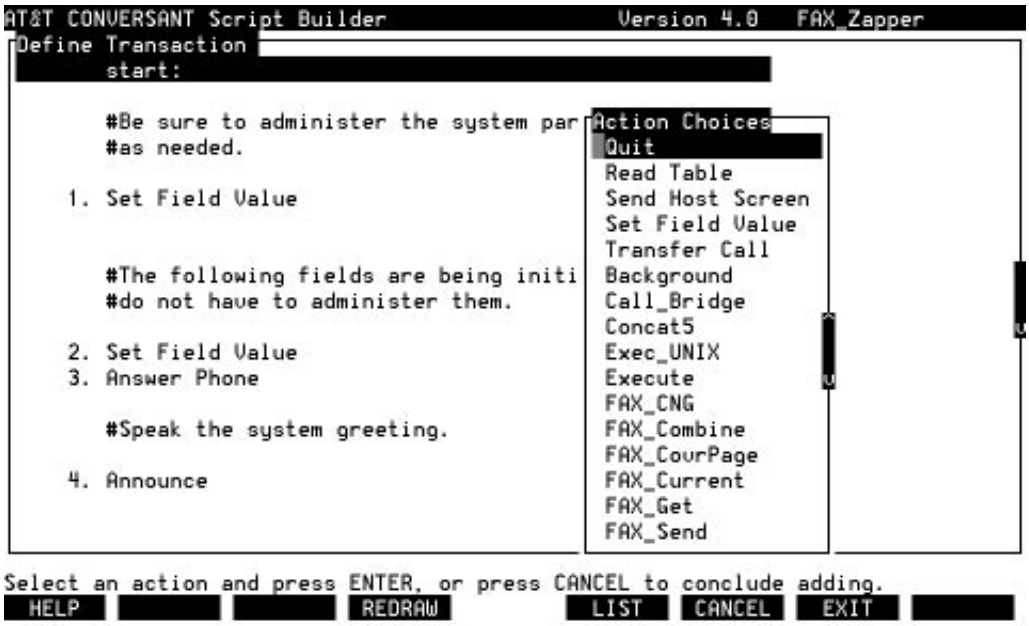



**Figure 6-2. Script Builder Action Choices Menu**

# FAX_Send Action

This section describes the FAX_Send action, what it does, how to define it, and provides tips for using it.

**NOTE:**
Make sure that the system is fully operational before callers use the FAX_Send action. Refer to Chapter 2, Chapter 3, Chapter 4, through Chapter 5 for details.

## FAX_Send: What It Does

FAX_Send directs the system to transmit the graphic image or text file specified to the designated FAX telephone number. You can use this action to schedule a FAX transmission to the FAX machine number entered by the caller. If the transmission fails, it will be retried until it is successfully transmitted or until the administered retry interval is exceeded (See Chapter 4, "Administering Script Builder FAX Actions Release 3.5", for information about the retry parameter).

## FAX_Send: How to Use It

Specify the FAX_Send Script Builder action in the same manner as any other Script Builder action:

1. Select FAX_Send from the Action Choices menu in the Transaction Definition screen (Figure 6-2).

   System response:

   The FAX_Send action appears in the transaction outline.

2. Press CANCEL to get back to the Transaction Definition screen.

   System response:

   The Actions Choices menu disappears and the system returns to the Transaction Definition screen.

3. Highlight FAX_Send in the Transaction Definition screen and press DEFINE.

   System response:

   The Define FAX_Send form appears (Figure 6-3).

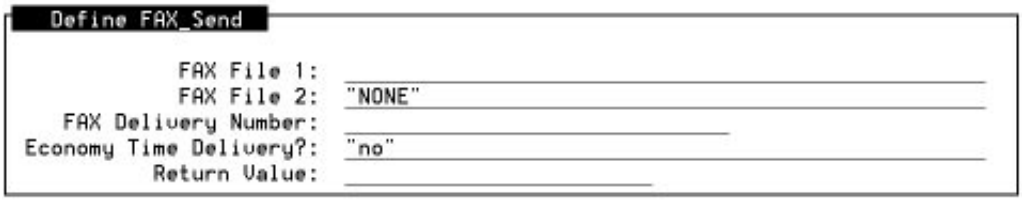



**Figure 6-3. Define FAX_Send Form**

## FAX_Send: the Arguments

The FAX_Send Script Builder action has five arguments:

- *FAX File 1*

  FAX File 1 is either the FAX ID as entered into the second column of the FAX Loading, Viewing, and Printing form (Figure 5-2 or Figure 5-6) or the full path of the file that you want to transmit to the caller. This is a required field. Valid entries for FAX File 1 are:

  — A FAX ID

  — A character constant enclosed in quotes, for example, "/tmp/junkfile"

  — The name of a field that contains a character constant

**CAUTION:**
*Throughout this chapter, the directory **/tmp** is used for examples. Be advised that files in the **/tmp** directory are removed when the UNIX system is rebooted. If you want to save your files, use a directory other than **/tmp**.*

**NOTE:**
Remember to include the quotation marks when specifying "FAX File 1". You must also use the quotation marks if you use FAX IDs as the FAX File 1 entry (for example, "fax1"). If you use character fields for FAX File 1, you must include the quotation marks when the field value is set (perhaps using a Set Field Value action). You do not need to enter quotation marks into local data base fields, however.

**NOTE:**
See Chapter 5, "Loading, Viewing, and Printing FAXes", for procedures on how to view those FAX files that are available to send to the caller and for procedures detailing how to load these files into the system. When these files are loaded into the system, they automatically appear at the end of the list you see when you press CHOICES (Figure 6-4).

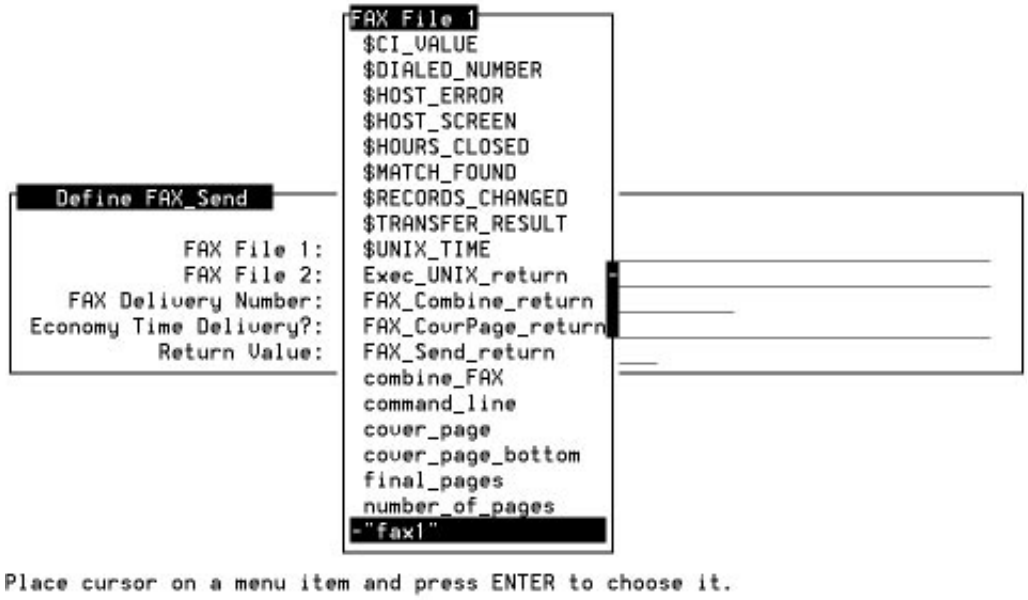



**Figure 6-4. FAX_Send FAX File 1 CHOICES Menu**

- *FAX File 2*

  *FAX File 2* is the second FAX to transmit to the caller. The same rules apply to this field as apply to FAX File 1. It is a required field. Enter "NONE" if you are not transmitting a second FAX.

- *FAX Delivery Number*

  *FAX Delivery Number* is the telephone number to which the FAX will be delivered. Most often the caller enters this number, but you can obtain it in other ways as well, including database lookup and host access. The maximum length of the FAX Delivery Number is 29 characters. Valid entries are:

  — A character constant enclosed in quotes, for example, "9,6148683608"

  — The name of a field that contains a character constant

  **NOTE:**
  The following characters can be used in the FAX Delivery Number field: 0,1,2,3,4,5,6,7,8,9, asterisk (*), pound sign (#), and comma (,). Using a comma (,) will cause a pause during dialing.

- *Economy Time Delivery?*

  *Economy Delivery* is useful if you want to avoid sending FAXes during the time when long-distance rates are the highest. Enter **yes** if you want the FAX requested by the caller to be delivered during the Economy Time Period. Enter **no** if you want the FAX delivered immediately.

  See Chapter 4, "Administering Script Builder FAX Actions Release 3.5" for procedures on how to administer the Economy Time Period.

- *Return Value*

  *Return Value* contains the Job ID associated with the FAX transmission. The system provides the contents of this field. However, you must specify the field in which the system will put the contents of the field. The FAX associated with this Job ID appears in the FAX Transmission Control window until the FAX transmission is completed. For information on how to use the Fax Transmission Control window, see Chapter 3, "FAX Equipment Operations".

  A negative Return value indicates that a problem was encountered, and the caller will not receive the FAX requested. You should check the return value and inform the caller of this fact. See Chapter 10, "Troubleshooting Script Builder FAX Actions Release 3.5", for possible return codes and their explanations.

## FAX_Send: Tips

- Check the return value. If it is an unexpected value, perform some retry function or inform the caller that the FAX could not be sent.
- Speak the Job ID back to callers so that they can keep this number for their records. Then if they do not receive the FAX, you can determine what happened by looking for the job ID in the FAX Transmission Control window.
- Use the "Concat5 Action" to attach a trunk access code (TAC) to the FAX Delivery Number entered by the caller using the "Concat5 Action" if your PBX supports this feature. This allows you to control which trunk is used to transmit the FAX.
- Use the "Concat5 Action" to attach an account code to the FAX Delivery Number entered by the caller using the "Concat5 Action" if your PBX supports this feature. This allows you to control which account pays for the FAX transmission.
- If you are using the system outside the U.S., enter a blank into the “Dial String For Outside Call” parameter in the "FAX Actions Parameters Defined" form (see Chapter 4, "Administering Script Builder FAX Actions Release 3.5") and, instead, use the "Concat5 Action" to attach the dial string to the FAX Delivery Number. This prevents a “1” from being automatically attached to the FAX Delivery Number.
- Part of the function of this action is to convert any text files sent into a format suitable for FAX transmission. The larger the text file that you are transmitting, the longer it will take to convert the file into the proper format and the longer it will take to complete this action. Avoid sending large text files. You should ask the caller to “Please wait” if this is unavoidable. Test the application to determine whether or not delays are noticeable.
- There are no delays when sending FAXes loaded into the FAX Loading, Viewing, and Printing form since no file conversion is needed.
- Send multiple text files to the caller by ordering them one after another in a single file using the “cat” command in an "Exec_UNIX Action". Then use FAX_Send to transmit the file to the caller. To combine a text file with a FAX file or a FAX file with a FAX file, use the "FAX_Combine Action".
- Once the FAX_Send successfully completes, you may safely remove any temporary FAX files sent. They are copied into the transmission queue and are no longer needed.

## FAX_Send: an Example

Figure 6-5 shows an example of how to define a FAX_Send action. See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for a second example.

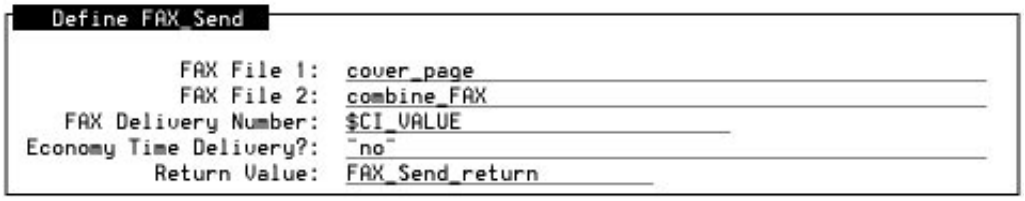



**Figure 6-5. Example of Defining a FAX_Send Action**

# FAX_Current Action

This section describes the FAX_Current action, what it does, how to define it, and provides tips for using it.

## FAX_Current: What It does

FAX_Current directs the system to transmit *on the current call* the graphical image or text files specified. FAX_Current is different than FAX_Send in that FAX_Current is for delivering FAXes to callers who are calling from a FAX machine whereas FAX_Send requires that the caller enter the telephone number of the FAX machine to which they want the FAX delivered. With FAX_Current, the caller originates the call for FAX transmission, whereas the provider originates the call for FAX_Send delivery.

Once the caller has selected the FAX(es) they want to receive and the script executes the FAX_Current action, the FAX_Current Script Builder action communicates with the faxingDip to schedule the FAX for delivery. First, the action checks to see if there are available FAX channels for the call. If so, an available FAX channel is "reserved" and instructed about what file to transmit to the caller. Once the FAX_Current action successfully returns, the call must then be transferred to the reserved FAX channel using the "Transfer call" action. Prior to the actual call transfer, the caller should be instructed to "Please press start on your FAX machine now." The extension of the reserved FAX channel to use for the call transfer is provided to the script by the FAX_Current action.

## FAX_Current Action: How to Use It

**NOTE:**
Since the FAX_Current action relies on reliable use of the "Transfer Call" action (or other similar user-defined external function), it cannot be used for calls arriving on T1 channels. Except for FAX_CNG, FAX_Current, and FAX_Get, the other actions *can* be used on calls arriving on T1 channels.

You will find an example showing how to use this action later in this section. Unlike FAX_Send, if this action fails, it will not be retried. The application developer must invoke some recovery or retry action if this action fails.

You specify the FAX_Current Script Builder action in the same manner as any other Script Builder action:

1. Select FAX_Current from the Action Choices menu in the Transaction Definition window.
2. Press CANCEL to return to the Transaction Definition window.
3. Select FAX_Current in the Transaction Definition window.

   Figure 6-7 shows the FAX_Current definition form.

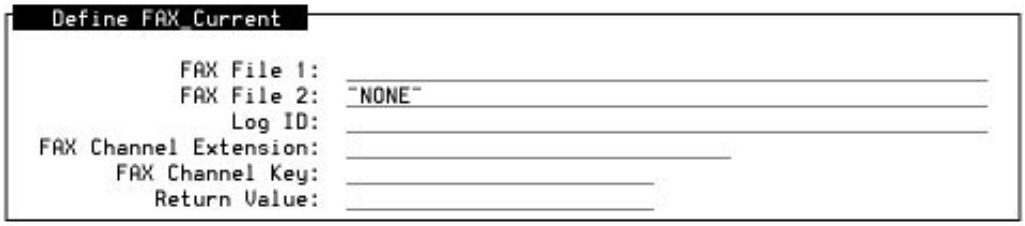



**Figure 6-7. Define FAX_Current Action Form**

## FAX_Current Action: the Arguments

The FAX_Current Script Builder action has six arguments:

- *FAX File 1*

  FAX File 1 is either the FAX ID (for example, “fax1” through “fax999”) of a FAX image entered into the FAX Loading, Viewing, and Printing form (Figure 5-2 or Figure 5-6) or the full path of the file that you want to transmit to the caller. This is a required field. Valid entries for FAX File 1 are a character constant, for example, /tmp/junkfile, or a field name. Full path names are *not* required when using FAX IDs, for example, “fax1”.

  Remember to include the quotation marks when specifying FAX File 1. You must also use the quotation marks if you use FAX File 1 entries of the form faxN (FAX IDs). If you use character fields for FAX File 1, you must include the quotation marks when the field value is set. You do not need to enter quotation marks into local data base fields, however.

  See Chapter 5, "Loading, Viewing, and Printing FAXes", for procedures on how to view those FAX files that are available to send to the caller and for procedures detailing how to load these files into the system. When these files are loaded into the system, they automatically appear at the end of the list you see when you press CHOICES.

- *FAX File 2*

  FAX File 2 is the second FAX to transmit to the caller. The same rules apply to this field as apply to the previous field. It is a required field. Enter **NONE** if no second FAX is desired.

- *Log ID*

  Log ID is an optional identifying string for tracking current call deliveries. Enter into this field the actual ID string (for example, “Zapper”) or a field containing such a string. The maximum length of this string is 6 characters. This LogID will appear in the system log which can be used to track FAX deliveries.

- *FAX Channel Extension*

  *FAX Channel Extension is the extension that the call must be transferred to for the caller to receive the FAXes requested.* What is entered into this field is the name of the script field that will contain the extension. In other words, the FAX_Current action will return the FAX channel extension to the calling script using this field.

- *FAX Channel Key*

  *FAX Channel Key* is a a unique integer assigned by the system to a FAX channel for a specific transmission. The FAX_Current action returns the FAX Channel key to the calling script. The FAX Channel Key is included for future use. Currently it is not used. What is entered into this field is the name of the script field that will contain the FAX Channel key. Valid entries for the FAX Channel Key are numeric fields.

- *Return Value*

  A negative Return value indicates that a problem was encountered, and the caller will not receive the FAX requested. You should check the return value and inform the caller of this fact if it occurs. Instead of instructing the caller to “Press start now,” you should request the caller’s FAX telephone number and transmit the FAX using the FAX_Send action. Refer to the HELP screen and Chapter 10, 'Troubleshooting Script Builder FAX Actions Release 3.5", for possible return codes and their explanations.

## FAX_Current: Tips

- Be sure to check the return value and if it is an unexpected value, perform some retry function or alert the caller that the system cannot transmit the FAX.
- If there are no FAX channels available, send the FAX using the FAX_Send action instead.
- Part of the function of this action is to convert text files into a format suitable for FAX transmission. Therefore, the larger the text file that you are transmitting, the longer it will take to complete this action. Test the application to determine whether or not delays are noticeable. You should ask the caller to “Please wait” if this delay is noticeable. There should be no noticeable delays when sending FAX files since no conversion takes place.
- You can send multiple text files to the caller by ordering them one after another in a single file (using Exec_UNIX), then by using FAX_Current to transmit the file to the caller. To combine text and FAX files, use the FAX_Combine action.
- Use of the FAX_Current action in combination with inbound “700”, “800”, or “900” services can be a more efficient method of managing FAX transmission expenses than using the FAX_Send action.

## FAX_Current: an Example

Figure 6-9 shows an example of how to define the FAX_Current action.

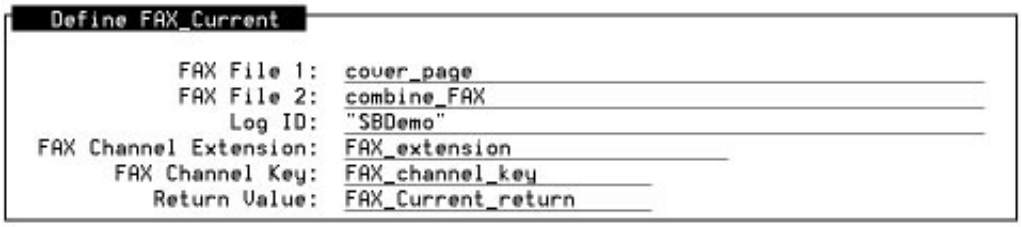



**Figure 6-9. Example of Defining a FAX_Current Action**

# FAX_Get Action

This section describes the FAX_Get action, what it does, how to define it, and provides tips for using it.

## FAX_Get: What is Does

FAX_Get directs the system to receive *on the current call* a FAX from the caller and to place it into the specified directory and file.

This action can be used to receive a FAX from the caller on the current call, that is, from the FAX machine from which the caller is calling. This action is different from the FAX_Current action in that it receives a FAX into the system from the caller instead of sending a FAX from the system to the caller. Once received from the caller, the FAX is stored in the file specified by the application developer.

## FAX_Get: How to Use It

The following summarizes the recommended context for using the FAX_Get action:

1. Execute FAX_Get.
2. If the FAX_Get action returns successfully, ask the caller to “Please press start on your FAX machine now.”
3. Execute a transfer to the FAX Channel extension returned by the FAX_Get action using the “Transfer Call” action.

**NOTE:**
The first action FAX_Get takes when it is called is to reserve a FAX channel on which to receive the FAX. If no FAX channels are available, it returns an error code. If a channel is successfully reserved, but a subsequent error occurs while processing the FAX_Get action, the system automatically frees the reserved FAX Channel.

**NOTE:**
Since the FAX_Get action relies on reliable use of the “Transfer Call” action (or other similar user defined external function), it cannot be used for calls arriving on T1 channels. Except for FAX_Get, FAX_Current and FAX_CNG, the other actions *can* be used on calls arriving on T1 channels.

You specify the FAX_Get Script Builder action in the same manner as any other Script Builder action:

1. Select FAX_Get from the Action Choices menu in the Transaction Definition window.
2. Press CANCEL to get back to the Transaction Definition window.
3. Highlight FAX_Get in the Transaction Definition window and press DEFINE.

Figure 6-11 shows the FAX_Get definition form.

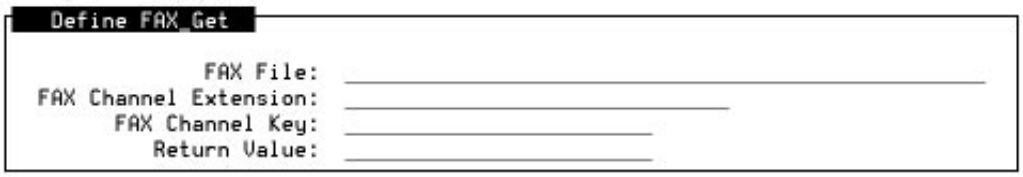



**Figure 6-11. Define FAX_Get Action Form**

## FAX_Get: the Arguments

The FAX_Get Script Builder action has four arguments:

- *FAX File*

  *FAX File* is the field where the FAX received by the system will be stored. Remember to include the quotation marks when specifying FAX File. If character fields are used for FAX File, you must include the quotation marks when you set the field value. You do not need to enter quotation marks into local data base fields, however.

- *FAX Channel Extension*

  *FAX Channel Extension is the extension to which the call must be transferred for the system to receive the FAX from the caller.* Enter in this field the name of the field that contains the extension. In other words, the FAX_Get action returns the FAX channel extension to the calling script using this field. Once your script gets the FAX channel extension from the system, use it to transfer the caller to the FAX channel.

- *FAX Channel Key*

  *FAX Channel Key* is a unique integer assigned by the system to a FAX channel for a specific transmission. The FAX_Get action returns the FAX Channel key to the calling script. The FAX Channel Key is reserved for future use. Currently, use this field to enter name of the script field that will contain the FAX Channel key. Numeric fields are the only valid entries for the FAX Channel Key.

- *Return Value*

  A negative Return value indicates that a problem was encountered, and the caller's FAX might not be received by the system. You might check the return value and inform the caller of this fact if it occurs. Instead of instructing the caller to "Press start now", you should ask them to call later. Refer to the HELP screen and Chapter 10, "Troubleshooting Script Builder FAX Actions Release 3.5", for possible return codes and their explanations.

## FAX_Get Action: Tips

- Be sure to check the return value and if it is an unexpected value, perform some retry function or alert the caller that the system is unable to accept the FAX.
- If there are no FAX channels available, ask the caller to call back later.

## FAX_Get: an Example

Figure 6-13 shows an example of how to define the FAX_Get action.

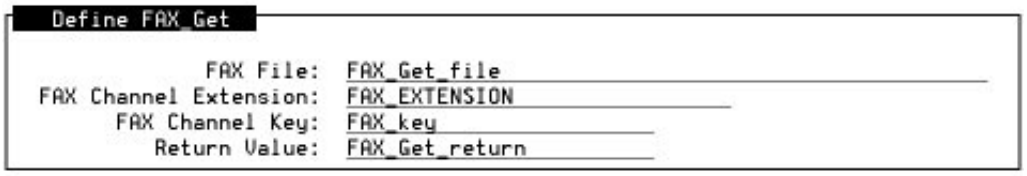



**Figure 6-13. Example of Defining a FAX_Get Action**

# FAX_Combine Action

This section describes the FAX_Combine action, what it does, how to define it, and provides tips for using it.

## FAX_Combine: What It does

The FAX_Combine action directs the system to combine the contents of two or three files into one FAX file. This combined FAX file is considered to be a single FAX and can be sent to the caller using the FAX_Send action.

Using the FAX_Send action by itself, you can send two FAXes to the caller. When you use FAX_Send to send a FAX created with the FAX_Combine action, an unlimited number of FAXes can be sent to the caller. For example, you can use FAX_Combine to combine three FAXes into a single FAX. You can then combine the resulting FAX with another combined FAX and send both with a single FAX_Send action.

## FAX_Combine: the Arguments

Figure 6-14 shows the Define FAX_Combine form.

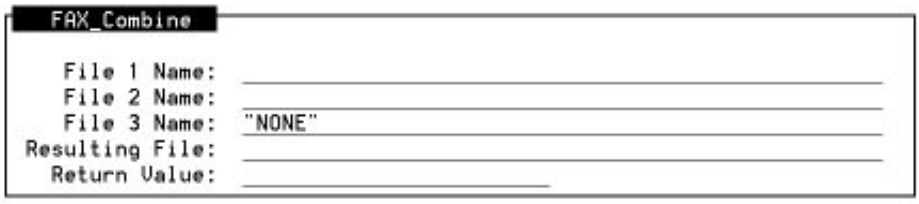



**Figure 6-14. Define FAX_Combine Form**

The FAX_Combine Script Builder action has five arguments:

- *File 1 Name*

  *File 1 Name* is the full pathname where the first file that is to be combined into a single FAX can be found. This is a required field. Valid entries for the File 1 Name are

  — Full pathnames of text or FAX files

  — FAX IDs, for example, "*fax1*"

  — Fields containing full pathnames of text files, FAX files, or FAX IDs

  Remember to include the quotation marks when entering the File 1 Name.

- *File 2 Name*

  *File 2 Name* is the full pathname of the second file to be combined into a single FAX. This is a required field that follows the same format rules as File 1 Name.

- *File 3 Name*

  *File 3 Name* is the full pathname of the third file to be combined into a single FAX. This is a required field with the same format rules as File 1 Name. Enter "NONE" if you do not want to add a third FAX.

- *Resulting File*

  *Resulting File* is the full pathname of the file containing the combined FAX. This is a required field. Valid entries for the Resulting File field are

  — Full pathnames of the desired file enclosed in quotation marks

  — Fields containing full pathnames of the desired file enclosed in quotation marks

  **CAUTION:**
  *To prevent a FAX_Combine action running on one channel from overwriting the "Resulting File" from a FAX_Combine action running on another channel, use the "Concat5 Action" to attach the channel number to the "Resulting File." This distinguishes the Resulting File on one channel from the Resulting File on another channel. See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for an example of how to do this.*

- *Return Value*

  *Return Value* contains the return value from the operation. A return value less than zero indicates that an error has occurred. See Chapter 10, "Troubleshooting Script Builder FAX Actions Release 3.5", for information about possible error conditions.

## FAX_Combine: Tips

- If certain FAXes are frequently requested together, consider entering them already combined into the system. This eliminates the need for file conversion and cut delays.
- If the two inputs are text, use the UNIX command **cat** to concatenate them instead of using the FAX_Combine action. This avoids file conversion.
- Be sure to check the return value for this function. If it is an unexpected value, perform some retry/recovery function.
- To prevent a FAX_Combine action running on one channel from overwriting the “Resulting File” from a FAX_Combine action running on another channel, use the "Concat5 Action" to attach the channel number to the “Resulting File.” See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for an example of how to do this.

## FAX_Combine: an Example

Figure 6-15 shows an example of how to define the FAX_Combine action. See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for a second example.

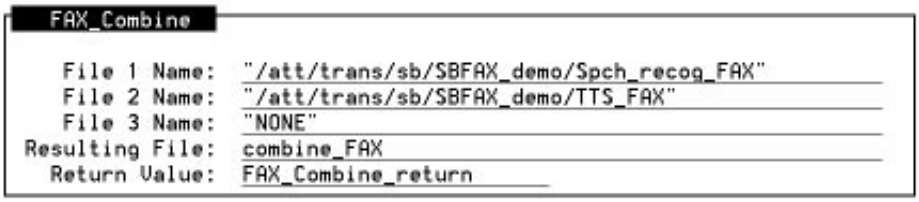



**Figure 6-15. Example of Defining FAX_Combine Actions**

# FAX_CovrPage Action

This section describes the FAX_CovrPage action, what it does, how to define it, and provides tips for using it.

## FAX_CovrPage: What It Does

The FAX_CovrPage action directs the system to join two files into a single FAX file. This action is especially useful for joining graphic images with text information. By doing this, you can create customized cover sheets with graphic company letterhead and logos combined with the text address of the intended recipient. You can use the Exec_UNIX action to create the text portion of the cover sheet. Once you create the joined FAX, use the FAX_Send action to transmit it to the caller.

## The Difference Between FAX_Combine and FAX_CovrPage

Although you will most likely use FAX_CovrPage to create customized cover pages, you can also use it to join two items together. In this way, FAX_CovrPage is similar to FAX_Combine. The two points below illustrate how FAX_Combine and FAX_CovrPage are different.

- FAX_Combine combines two FAXes into a single FAX. In that combined FAX, the original FAXes start on separate pages. For example, if the first FAX is one page long and the second FAX is one page long, the combined FAX will be two pages long with the second FAX starting on page 2.
- FAX_CovrPage combines two FAXes into a single FAX, with the second FAX starting on the same page as the first FAX. Each additional page of the second FAX starts on a separate page. Since the result contains the two files combined onto a single page, the FAX_Covrpage action is useful for creating cover pages.

## FAX_CovrPage: The Arguments

Figure 6-16 shows the Define FAX_CovrPage form.


**Figure 6-16. Define FAX_CovrPage Form**

The FAX_CovrPage Script Builder action has five arguments:

- *File 1 Name*

  *File 1 Name* is the full pathname of the file to appear at the top of the cover page. This is a required field. Valid entries for the File 1 Name are

  — Full pathnames of text or FAX files

  — FAX IDs, for example, *"fax1"*

  — Fields containing full pathnames of text files, FAX files, or FAX IDs

  **NOTE:**
  Remember to include the quotation marks when entering the File 1 Name.

- *File 2 Name*

  *File 2 Name* is the full path of the file to appear at the bottom of the cover page. This is a required field. Valid entries for the File 2 Name follow the same rules as File 1 name.

- *Fill the Page?*

  *Fill the Page?*, if set to yes, causes the joined FAX file to fill an entire 8.5-by 11-inch page if it otherwise might not. If the combined length of the two joined files is greater than 11 inches long, the resulting FAX will also be longer than 11 inches. That is, the page will not be compressed. If the combined length of the two joined files is less than 11 inches, the result will also be less than 11 inches unless the Fill The Page? parameter is set to yes. (The default value is yes.)

  **NOTE:**
  Take care to ensure that the page is the length desired.

- *Resulting File*

  *Resulting File* is the full pathname of the file containing the cover page. This is a required field. Valid entries for Resulting File are full pathnames of the desired file or fields containing appropriate strings.

**CAUTION:**
*To prevent a FAX_CovrPage action running on one channel from overwriting the “Resulting File” from a FAX_CovrPage action running on another channel, use the "Concat5 Action" to attach the channel number to the “Resulting File”. See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for an example of how to do this.*

- *Return Value*

  *Return Value* contains the return value from the operation. A return value less than zero indicates that an error has occurred. Refer to Chapter 10, "Troubleshooting Script Builder FAX Actions Release 3.5", for information about possible error conditions.

## FAX_CovrPage: Tips

- If the two inputs are text, use the UNIX *cat* command to concatenate them instead of using FAX_CovrPage. This avoids file conversion. If both are FAX files, consider entering them combined into the system.
- Be sure to check the return value for this function. If it is an unexpected value, perform some retry/recovery function.
- To prevent a FAX_CovrPage action running on one channel from overwriting the “Resulting File” from a FAX_CovrPage action running on another channel, use the "Concat5 Action" to attach the channel number to the “Resulting File”. See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for an example of how to do this.

## FAX_CovrPage: An Example

Figure 6-17 shows an illustration of how to use the FAX_CovrPage action to create custom cover pages consisting of both graphics and text. See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for a second example.

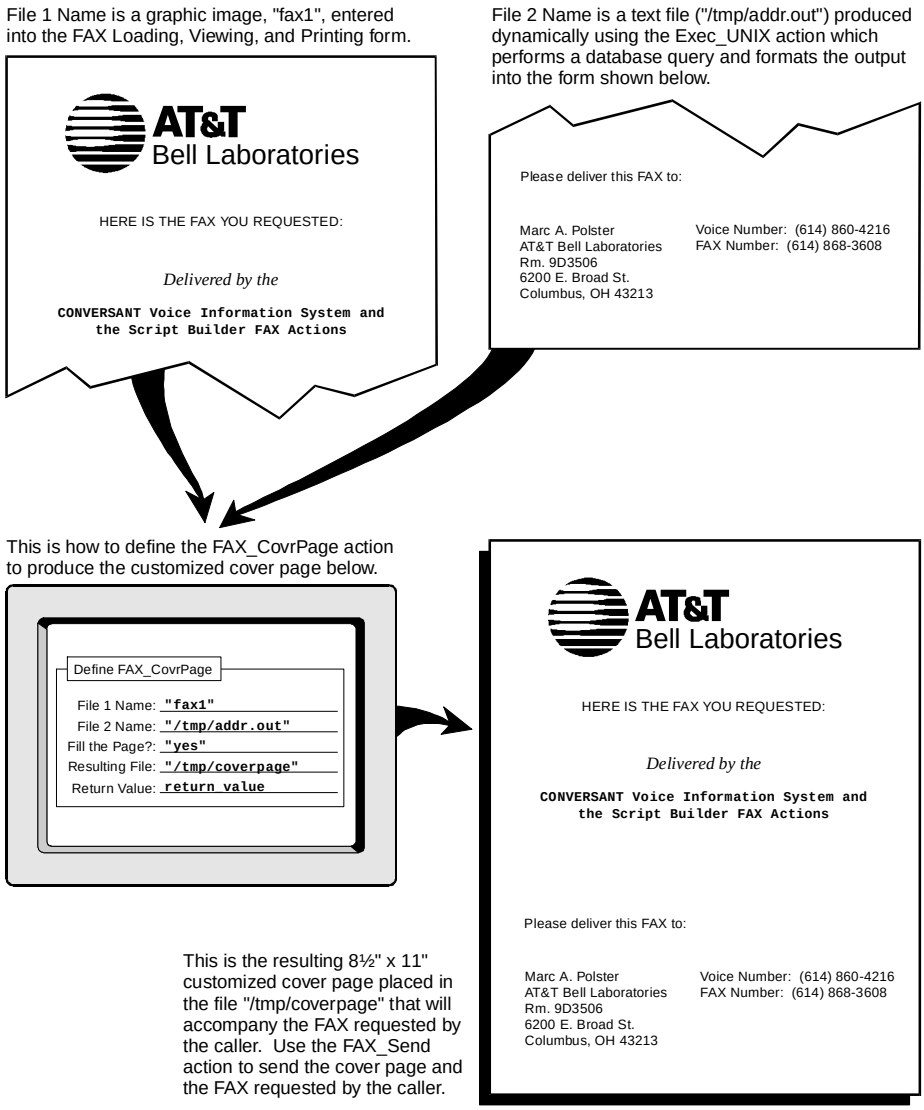



**Figure 6-17. Using the FAX_CovrPage Action to Create a Custom Cover Page**

# Exec_UNIX Action

This section describes the Exec_UNIX action, what it does, how to define it, and provides tips for using it.

## Exec_UNIX: What It Does

The Exec_UNIX action directs the system to execute a UNIX command or shell script. This action is useful for creating text files to transmit to the caller. For example, if a caller enters an account number, a shell script can be executed to perform a database query that creates a formatted text file comprising the caller's account statement. You can then FAX the account statement to the caller using the FAX_Send action.

## Exec_UNIX: How to Use It

Figure 6-18 shows the Define Exec_UNIX form.

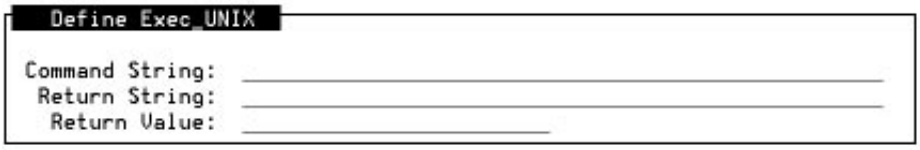



**Figure 6-18. Define Exec_UNIX Form**

**CAUTION:**
*As when operating at the system console, you can execute almost ANY command or shell script using the* Exec_UNIX *action, including commands that are harmful to the system. Test your command or shell script thoroughly before executing it from within a Script Builder application.*

## Exec_UNIX: Arguments

The Exec_UNIX Script Builder action has three arguments:

- Command String

  *Command String* is the full pathname of the command that you want to execute. This is a required field. Valid entries for the Command String are a character constant, for example, “banner hello world > /tmp/junkfile,” or a field name that contains a character constant.

  **NOTE:**
  Remember to include the quotation marks when entering the Command String.

- *Return String*

  *Return String* is an optional field that contains the return string that results from execution of the Command String. For example, if the file “/tmp/junkfile” contains the text “hello world” and the Command String is “grep hello /tmp/junkfile,” the Return String will contain “hello world”. If the file “/tmp/junkfile**”** does not contain the word “hello”, the Return String will be empty. The system reads into the Return String all characters (up to a maximum of 127) that it encounters before any new-line character appears or before an end-of-file condition occurs. The Return String is automatically null terminated.

- *Return Value*

  *Return Value* contains the return value from the UNIX command execution. See Chapter 10, "Troubleshooting Script Builder FAX Actions Release 3.5", for information about possible error conditions.

  **NOTE:**
  The faxingDip, which actually executes the command, possesses the root environment and profile. Make sure that you specify in your command or shell script any PATH information the command or shell might need to successfully execute if that information is not already in the root environment or profile. When in doubt, include and export necessary environmental values in your shell script.

## Exec_UNIX: Tips

- Do not execute commands with long execution times that might introduce call delays. If this is unavoidable, ask the caller to “Please wait.”
- The Exec_UNIX action is particularly useful when used with the text-to-speech (TTS) feature. When using Exec_UNIX with TTS, execute a command that returns text. Then speak the text to the caller using the returned text as input for an Announce action.
- If using Exec_UNIX to create text files to FAX to the caller, use the "Concat5 Action" to attach the channel number to the text file name. This will prevent an Exec_UNIX action running on one channel from overwriting the text file created using an Exec_UNIX action on another channel. See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for an example of how to do this.
- You can embed Script Builder system variables, such as $CI_VALUE, within the command line by constructing the command line using the Concat5 action. For example, say you want to use Exec_UNIX to execute the command */att/trans/sb/FAX_Zapper/mkcv $CI_VALUE* where *mkcv* is a shell script in the */att/trans/sb/FAX_Zapper* directory and *$CI_VALUE* is the telephone number entered by the caller.

  You may not enter this command as the “Command String” of your Exec_UNIX action because you cannot mix string constants and system variables. However, you can “create” this command using the Concat5 action. Use Concat5 to concatenate the string “/att/trans/sb/FAX_Zapper/mkcv” to the field $CI_VALUE, putting the resulting string in the variable “command_line” which has been defined as a character type field of length 50. Then, enter the “command_line” variable directly into the Exec_UNIX Command String field. Exec_UNIX will now execute the command string /att/trans/sb/FAX_Zapper/mkcv $CI_VALUE.

  This type of operation is done in the sample application in Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application". The sample application uses the FAX_CovrPage action to create a customized cover page. The top of the cover page is a graphic image and the bottom of the cover page is text containing the FAX delivery number. The bottom of the cover page is created dynamically using Exec_UNIX to execute the shell script *mkcv* which takes as input the caller’s FAX delivery number and the channel on which the transaction occurs.
- Be sure to check the return value for this function. If it is an unexpected value, perform some retry or recovery function.

## Exec_UNIX: An Example

Figure 6-19 shows an example of how to define the Exec_UNIX Action. See Chapter 8, "FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application", for a second example.

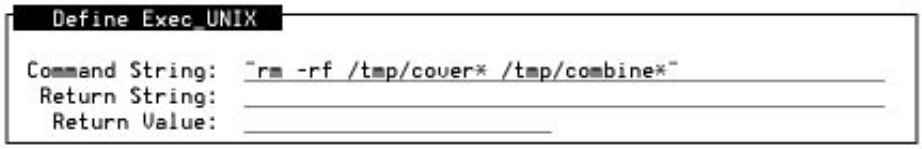



**Figure 6-19. Example of Defining the Exec_UNIX Action**

# Concat5 Action

This section describes the Concat5 action, tells what it does and how to define it, and provides tips for using it.

## Concat5: What It Does

Use the Concat5 action to concatenate up to five strings to make a resulting string. The resulting string will contain the source strings joined together. A typical use for Concat5 is to create an unique file name for use in the "FAX_Send Action", "FAX_Combine Action", or other FAX actions or to piece together a command line for use with the "Exec_UNIX Action".

## Concat5: How to Use It

You specify The Concat5 Script Builder action in the same manner as any other Script Builder action:

1. Select Concat5 from the Action Choices menu in the Transaction Definition window.
2. Press CANCEL to get back to the Transaction Definition window.
3. Highlight Concat5 in the Transaction Definition window and press DEFINE.

Figure 6-21 shows the Concat5 definition window. Figure 6-23 shows an example of how the Concat5 action might be defined.

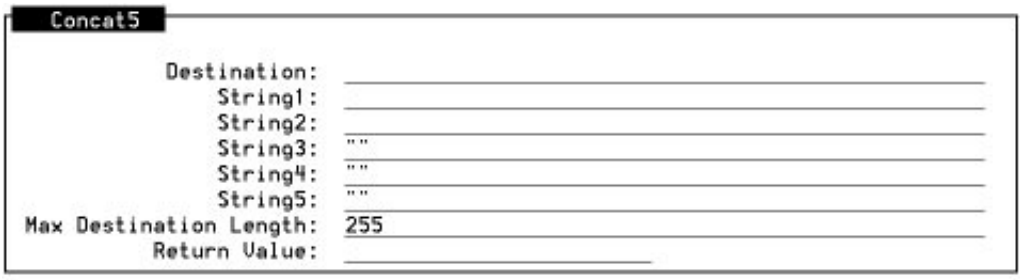



**Figure 6-21. Define Concat5 Action Window**

## Concat5: Arguments

The Concat5 Script Builder action has eight arguments:

- Destination

  Destination specifies the name of the field where the resulting string will be placed. You supply the field name and Concat5 fills the field with the result of the concatenation.

- String1

  String1 specifies the first string to be concatenated. Valid entries for this field are fields or string constants (for example, “string1”).

- String2

  String2 specifies the second string to be concatenated. The rules for String1 also apply here. This is a required field.

- String3, String4 and String5

  String3, String4, and String5 specify the third, fourth and fifth strings to be concatenated respectively. The rules for String1 also apply here. These fields are optional. If you do not use these fields, leave the default string ““.

- Max Destination Length

  Max Destination Length specifies the largest allowed length of the resulting string. If set to 0, a maximum length of 255 is assumed. The default is the system maximum of 255 characters.

- Return Value

  Return Value specifies the action return value. The value placed here is equal to the length of the Destination string.

## Concat5 Action Tips

- Be sure to check the return value and if it is an unexpected value, perform some retry or recovery function.
- Use this action to create unique file names for FAXes and files created using the other FAX Actions.

## Concat5: An Example

Figure 6-23 shows an example of how you can define the Concat5 action.

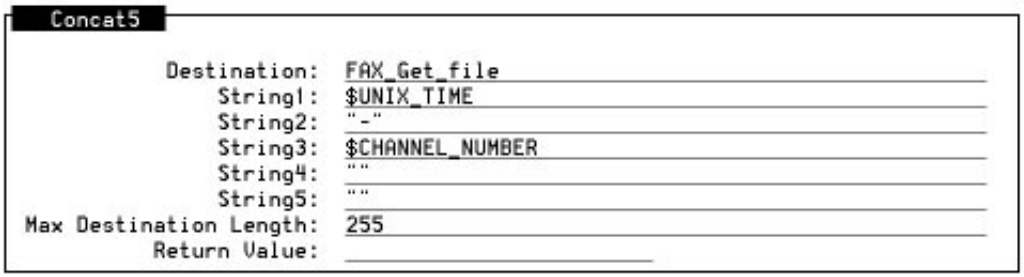



**Figure 6-23. An Example of Defining the Concat5 Action**

# FAX_CNG Action

**NOTE:**
You cannot use the *FAX_CNG* action on calls arriving on T1 channels.

## FAX_CNG: What It Does

The FAX_CNG action allows the application to detect FAX_CNG tone. FAX CNG tone is the tone emitted by a transmitting FAX machine after the "start" button has been pressed. Using this action, your application can listen for the FAX CNG tone and if found, can transfer the call to a FAX machine, the FAX Attendant System, a PC equipped with a FAX modem or any other FAX reception system/ device that is compliant with the G3 standard.

When FAX CNG tone detection is activated using the FAX_CNG action, the system listens for FAX CNG tone during the next "Prompt & Collect" action. If the system detects FAX CNG tone, it places the value "E" in the "Caller Input Field" (for example, "$CI_VALUE"). The "Caller Input Field" is an administrable parameter on page 2 of the "Define Prompt & Collect" form.

**NOTE:**
Ring, busy and interflow tones will NOT be detected during the time that FAX CNG tone detection is active. All other tones, including touch tones, will still be detected, however. It is essential to deactivate FAX CNG tone detection soon after FAX CNG tone detection is complete.

## FAX_CNG: How to Use It

You specify the FAX_CNG Script Builder action in the same manner as any other Script Builder action:

1. Select FAX_CNG from the Action Choices menu in the Transaction Definition window.
2. Press CANCEL to get back to the Transaction Definition window.
3. Highlight FAX_CNG in the Transaction Definition window and press DEFINE.

Figure 6-24 shows an example of the FAX_CNG window. Figure 6-25 shows examples of how you might define the FAX_CNG action.

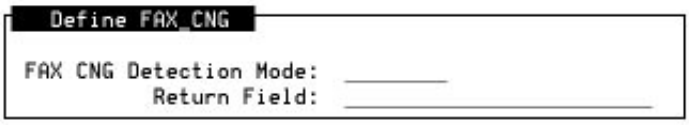



**Figure 6-24. Define FAX_CNG Action Window**

## FAX_CNG: Arguments

The FAX_CNG Script Builder action has two arguments:

- FAX CNG Detection Mode

  F*AX CNG Detection Mode* specifies whether the FAX CNG detector is being activated or deactivated. Into this field, enter either “listen” which activates FAX CNG detection or “reset” which deactivates FAX CNG detection. When FAX CNG tone detection is activated using the FAX_CNG action, the system will listen for FAX CNG tone during the next “Prompt & Collect” action. If the system detects FAX CNG tone, it places the value “E” in the “Caller Input Field” (for example, “$CI_VALUE”). The “Caller Input Field” is an administrable parameter on page 2 of the “Define Prompt & Collect” form.

- *Return Field*

  *Return Field* A negative Return value indicates that a problem was encountered. If the FAX_CNG action is successful, the return value will be 0.

## FAX_CNG Action Tips

- Be sure to check the return value and if it is an unexpected value, perform some retry or recovery function.
- Be sure to reset FAX CNG detection as soon as possible.
- Use a “Prompt & Collect” to get a single touch tone (touch tone gate) for best results. If your Prompt & Collect expects three touch tones, it will wait until the third FAX CNG tone is detected before continuing or might time-out if the correct number of touch tones are not received within the interdigit time-out interval. The FAX_Zapper application shows an example of this.
- Use the FAX_CNG action to receive FAXes into a system mailbox. To do this, once FAX CNG tone is detected, use the FAX_Get action after the CNG tone is detected.

Figure 6-25 show an example of how you can define the FAX_CNG action.

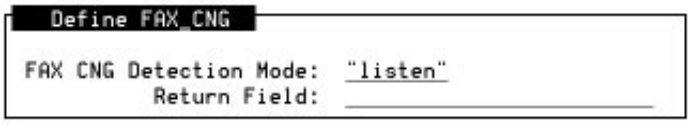



**Figure 6-25. Defining FAX_CNG Actions**

# Script Builder FAX Actions Release 3.5 Reports

# 7

## What's in This Chapter

This chapter describes how to:

- Access Script Builder FAX Actions Release 3.5 reports

## When to Use Script Builder FAX Actions Release 3.5 Reports

Use the Script Builder FAX Actions Release 3.5 reports to determine how busy your FAX channels are. If the percentage of utilization of your FAX channels is relatively high (over 50%), you should consider adding another FAX circuit card to your system.

## Accessing Script Builder FAX Actions Release 3.5 Reports

To access the Script Builder FAX Actions reports:

1. If you are not already logged in, do so now.
   a. At the `Welcome to the AT&T 486 UNIX System` prompt, enter **root**

      System response:

      `Password:`

   b. Enter your password.

      System response:

      The system returns the UNIX system prompt `#`.
2. Enter **cvis_menu**.

   System response:

   The Voice System Administration menu appears (Figure 7-1).

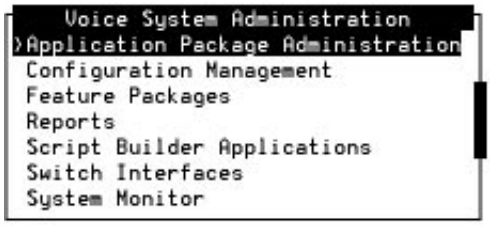



**Figure 7-1. Voice System Administration Menu**

3. Select Reports from the Voice System Administration menu.

   System response:

   The Reports Administration menu appears (Figure 7-2).

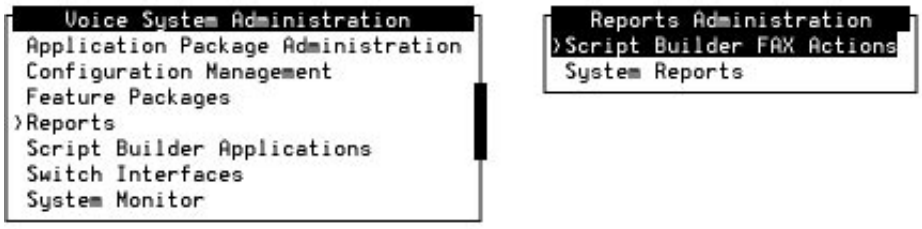



**Figure 7-2. Reports Administration Menu**

4. Select Script Builder FAX Actions from the Reports Administration menu.

   System response:

   The Script Builder FAX Actions Reports Menu appears (Figure 7-3).


**Figure 7-3. Script Builder FAX Actions Reports Menu**

5. Select FAX Channel Utilization Report from the Script Builder FAX Actions Reports menu.

   System response:

   The FAX Channel Utilization Report appears (Figure 7-4).

   The FAX Channel Utilization Report shows utilization of the FAX channels broken down in 24 increments of 1 hour each. If the utilization percentage for a period is, for example, 50%, that means that the system's FAX channels were busy half the time during that period. The data in this report is cumulative and is averaged over the time the report was last reset. The top of the report lists the period over which the data was collected.

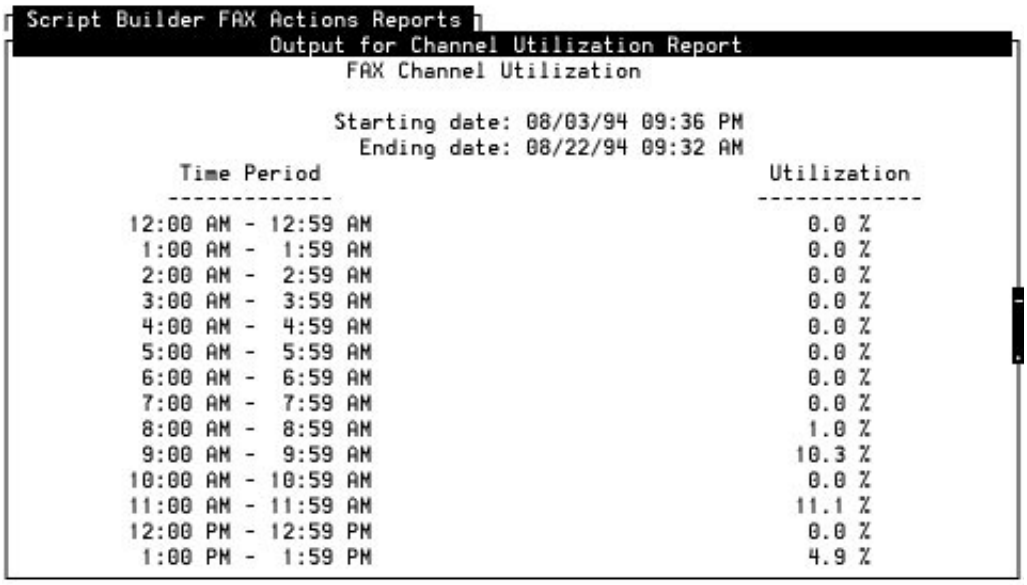



**Figure 7-4. FAX Channel Utilization Report**

## Resetting the FAX Channel Utilization Report

Resetting the FAX Channel Utilization Report removes the current data from the report and starts the collection of new data. In other words, the period over which the FAX channel utilization data is collected starts when you reset the FAX Channel Utilization Report.

To reset the FAX Channel Utilization Report, press RESET. The display is updated after exiting the report.

## Printing the FAX Channel Utilization Report

To print the FAX Channel Utilization Report to your laser printer, press PRINT.

# FAX_Zapper: A Script Builder FAX Actions Release 3.5 Application

# 8

## What's in This Chapter

This chapter provides:

- An example of FAX_Zapper, a Script Builder application that uses the eight Script Builder FAX Actions
- Instructions on how to install FAX_Zapper
- Instructions on how to tailor FAX_Zapper to meet your needs

See Appendix A, "FAX_Zapper Program Listing", for a complete listing of the FAX_Zapper program.

## What FAX_Zapper Does

FAX_Zapper is a user-modifiable, remotely administrable FAX-back/FAX-on-demand application. It uses Script Builder FAX Actions Release 3.5 to allow callers to:

- Retrieve FAXes of their choosing from a menu of available FAXes. FAXes can be sent to any FAX machine or can be sent immediately if the caller is calling from a FAX machine
- Send voice-annotated FAXes to the system FAX mailbox
- Reach an attendant
- Transfer to an extension
- Listen to an information announcement

The application can be modified to suit the user's needs from either the system console via Script Builder and the Script Builder FAX Actions Release 3.5 administrative windows, or remotely using a telephone and/or FAX machine. Remotely, the user can:

- Retrieve FAXes left by callers in the system mailbox
- Broadcast a FAX to a broadcast mailing list
- Administer the broadcast mailing list
- Administer the main system prompts
  - Greeting
  - Main Menu
  - FAX Menu
  - Good-bye Message
- Change FAXes available for callers to retrieve

Figure 8-2 shows a simplified functional diagram for the FAX_Zapper. Figure 8-4 shows a more detailed flow diagram.

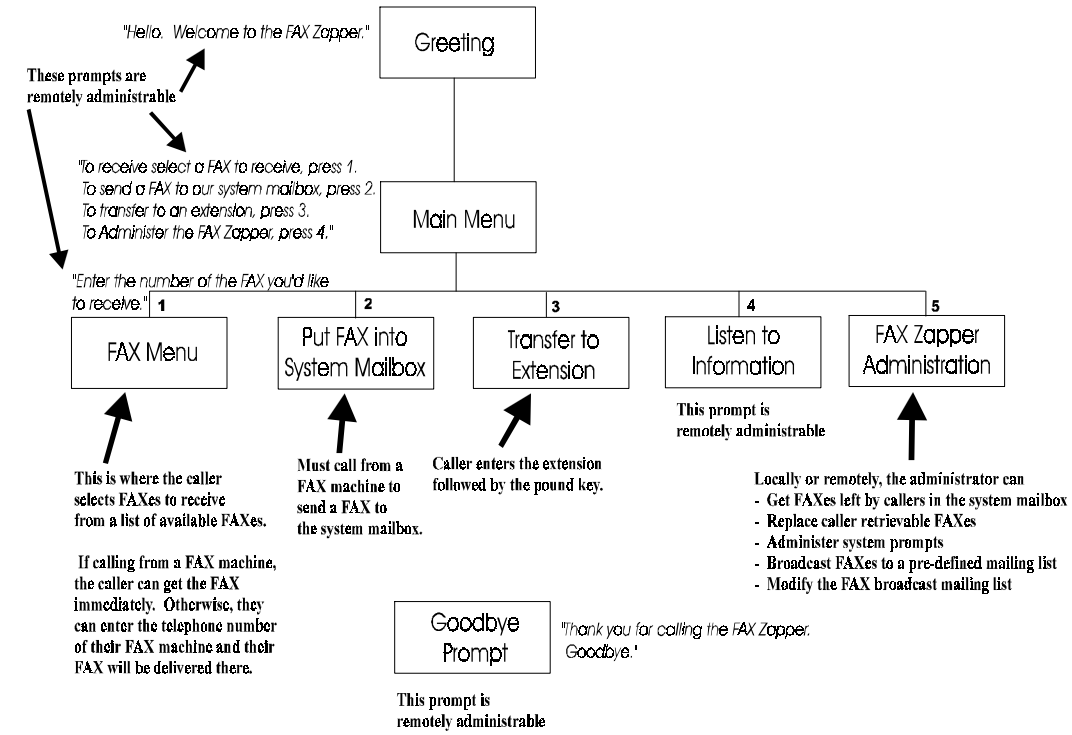



**Figure 8-2. FAX_ Zapper Functional Diagram**

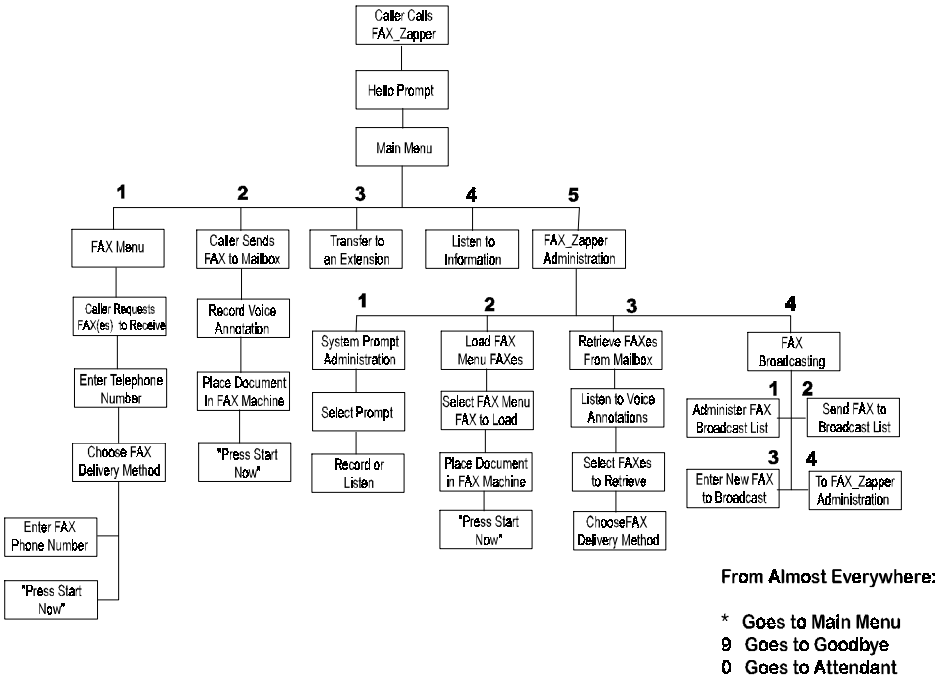



**Figure 8-4. FAX_Zapper Flow Diagram**

## Modifying FAX_Zapper

For the sake of simplicity and to make the example usable for most users, the FAX_Zapper does not use host, text-to-speech, or speech recognition operations. However, you can modify FAX_Zapper to use these and any other CONVERSANT capability.

Table 8-1 lists examples of modifications and how you can make them. These are only suggestions. There are many ways of implementing any given capability. The steps mentioned in the second column refer to the step numbers in the FAX_Zapper program listing you would change using Script Builder to implement the modification listed (see Appendix A, "FAX_Zapper Program Listing").

**Table 8-1. FAX_Zapper Modifications and How to Implement Them**

| Modification/Additional Capability | How to Implement |
|---|---|
| Re-record the Hello, Main Menu, FAX Menu or Good-bye prompts | Call the FAX_Zapper and use the telephone-based administration (default password is “1234”) or use Script Buider’s Speech Administration window |
| Change one of the eight FAXes available for callers to retrieve | Call the FAX_Zapper from a FAX machine and use the telephone-based administration or use Script Builder FAX Actions Release 3.5 FAX Loading, Viewing and Printing. |
| Increase the number of FAXes available for callers to retrieve | Use Script Builder to change the logic of the FAX menu to add choices (steps 20 and 21) then use Script Builder FAX Actions Release 3.5 FAX Loading, Viewing and Printing to load the FAXes |
| Increase the number of FAX mailboxes | User Script Builder to modify the program flow to allow callers to specify the intended recipient of the FAX (step 61, etc.). Create a new local database table to hold the details of each mailbox: owner, password, etc. Create logic to allow mailbox owners to retrieve FAXes (similar to step 142 etc.) |
| Provide broadcast FAX mailing lists for each mailbox owner | User Script Builder to modify the program flow. Create a new local database table to hold the details of each mailbox owners mailing lists. |
| Expand audiotext information | Use Script Builder to modify the program flow (see step 73 etc.) Use Script Builder Speech Administration to record the audiotext information or implement a telephone-based recording capability like the one in the current FAX_Zapper. |
| Change the name of the FAX_Zapper | Use Script Builder to copy FAX_Zapper to a name of your choosing. Be sure to modify any pathnames in the application that contain FAX_Zapper (steps 2 and 32). |

## Installing and Using the FAX_Zapper

To install and use the FAX_Zapper:

1. Make sure you have the floppy disks containing FAX_Zapper. There are four disks:
   - One for the transaction
   - One for the application databases
   - Two for the speech
2. If you are not already logged in, do so now.
   a. At the `Welcome to the AT&T 486 UNIX System` prompt, enter **root**

      System response:

      `Password:`

   b. Enter your password.

      System response:

      The system returns the UNIX system prompt #
3. Enter **cvis_menu**

   System response:

   The Voice System Administration Menu appears (Figure 8-5).

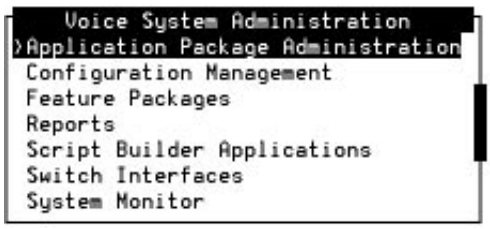



**Figure 8-5. Voice System Administration Menu**

4. Select Script Builder Applications.

   System response:

   The Script Builder Applications Menu appears (Figure 8-6).

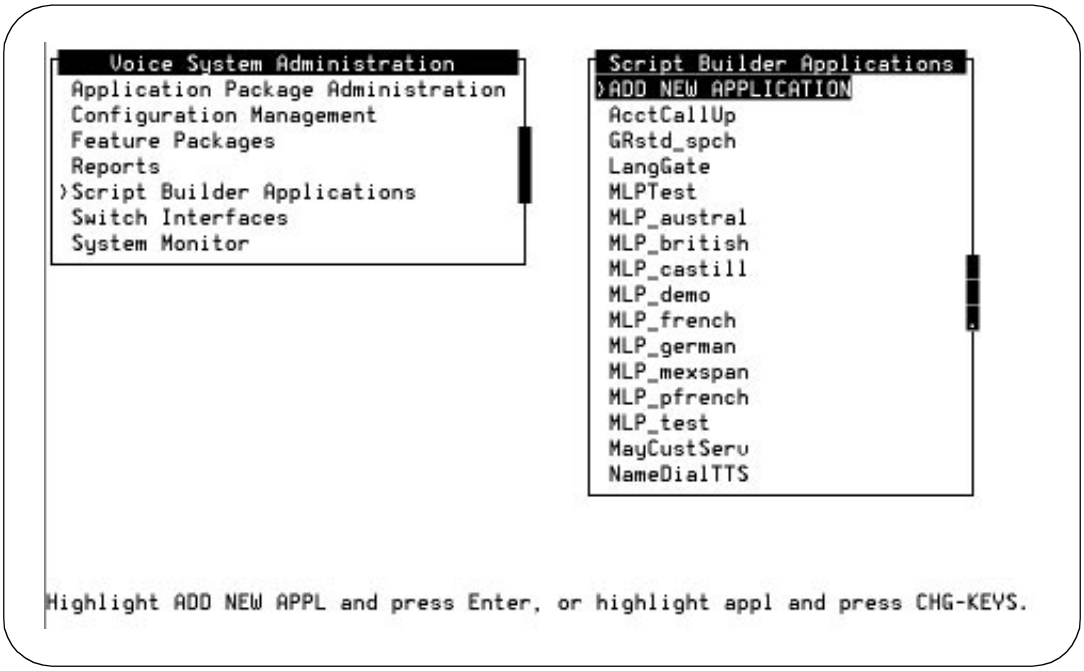



**Figure 8-6. Script Builder Applications Menu**

5. Select ADD NEW APPLICATION and add an application named FAX_Zapper.
6. Press RESTORE and follow the instructions on the screen to restore the entire application.

   **CAUTION:**
   *If you do not use the name FAX_Zapper, the application will not be able to find needed files where it expects to find them. You may rename the application if desired once it is RESTORED via Script Builder. If you do, be sure to change the references to FAX_Zapper in the application as appropriate.*

7. VERIFY and INSTALL the application using Script Builder.
8. Make sure at least one FAX channel is in service. Use FAX Board Diagnostics or FAX Channel Administration to get the channel in service if necessary. Also make sure that the “Dial String for Outside Call” from the section "FAX Actions Parameters Defined" in Chapter 4, "Administering Script Builder FAX Actions Release 3.5". parameter is correctly set
9. Assign FAX_Zapper to a voice channel.

   Call the application from a FAX machine (to put FAXes in or to get FAXes out on the current call) or from a telephone (to retrieve FAXes by entering a delivery number or to administer the FAX_Zapper).
10. The default ADMIN_SECURITY_CODE is “1234”. Enter this when prompted by the FAX_Zapper.

# Advanced Topics

# 9

## What's in This Chapter

This chapter provides instructions on how to:

- Improve the performance of your applications
- Load more than 999 FAXes into your system
- Use Script Builder FAX Actions Release 3.5 in "native" script applications
- Broadcast FAXes to multiple addresses
- Send FAXes from AT&T FAX Attendant System mailboxes
- Load Script Builder FAX Actions Release 3.5 without a FAX circuit card
- Change the number of active faxingDips
- Readminister the country code
- Use the **faxdaily.log** file

**CAUTION:**
*Use the information in this chapter only if you are comfortable working with UNIX. The information provided contains details about the internal structure of the system and its supporting files and directories.*

## Application Performance Considerations

The following information and suggestions will help optimize the performance of applications that use Script Builder FAX Actions Release 3.5.

> **NOTE:**
> As an application developer, you are responsible for making sure your application is logically correct and as pleasurable for the caller to use as possible. Thorough testing, including testing under load, is recommended before any application is made "live."

- Make sure that any commands, programs, or shell scripts you execute via the Exec_UNIX Action do not have long execution times. The longer the execution time, the longer the potential delay to the caller. If delays are unavoidable, be sure to ask the caller to "Please wait." If necessary, limit the number of channels on which the service is running.
- Sending text files is more processing intensive than sending FAX images. This is because the system must first convert the text file to FAX format before transmission can occur. File conversions could create delays that are noticeable to the caller. If you use the same text file repeatedly throughout a single call, a single application, or among several applications, enter the text file into the system as a FAX image via the FAX Loading, Viewing, and Printing form. Use text files only when they involve dynamic information. Avoid using large text files whenever possible.
- The FAX_Combine and FAX_CovrPage actions employ file conversions for both FAX and text files. Use FAX_Send or FAX_Current without FAX_Combine and FAX_CovrPage when possible.
- If Combining text files only, use the Unix **cat** command instead of FAX_Combine.
- If necessary, activate additional faxingDips.

## Loading More Than 999 FAXes into the System

FAX IDs in the FAX Loading, Viewing, and Printing form go up to “fax999.” This means that the FAX Loading, Viewing, and Printing form and the directory that supports it can hold only 999 FAXes at a time. However, you can load your FAXes into this form, then move them to a different directory. This enables you to load as many FAXes into the system as the hard disk will contain. The following procedure summarizes how to load more than 999 FAXes into the system.

1. Load the FAX through the Figure 5-2, "FAX Loading, Viewing, and Printing Form" as described in Chapter 5, "Loading, Viewing, and Printing FAXes". These FAXes are stored on the system hard disk in the directory **/usr/faxdb/FR/WORKFAX**. The file names are the same as the FAX ID (for example, “fax1” through “fax999”).
2. Copy the file from **/usr/faxdb/FR/WORKFAX** to a different location of your choosing.
3. In your FAX_Send or FAX_Current action, reference the moved file by its full pathname.

   For example, if you move the file **/usr/faxdb/FR/WORKFAX/fax1** to the file **/usr/mydir/myfax**, enter **/usr/mydir/myfax** into the FAX File 1 or the FAX File 2 field in your FAX_Send or FAX_Current action.

## Using Script Builder FAX Actions Release 3.5 in Non-Script-Builder (Native) Applications

To use the Script Builder FAX Actions Release 3.5 capabilities within non-Script-Builder (or “native script” applications) use the code fragments generated by Script Builder FAX Actions Release 3.5 as models. You will find this code in the “/vs/bin/ag/eascripts” directory.

## FAX Broadcasting

The FAX_Zapper application contains a FAX broadcasting capability that can be used as a model for FAX broadcasting within a running application. The FAX_Zapper allows the administrator to create and modify a broadcast mailing list containing the telephone numbers of FAX machines that will receive the broadcast. It also allows the administrator to load a FAX into the system and to then broadcast this FAX to the mailing list created.

Another way to broadcast FAXes is from the console command line. You can write a utility that sends a FAX to many recipients using the **faxit** command. The *faxit* command allows you to send a FAX from the system console command line. This command is described in more detail in Chapter 10, "Troubleshooting Script Builder FAX Actions Release 3.5".

The shell script language fragment below shows one way to broadcast a FAX. In this utility, the FAX "/tmp/FAXfile" is sent to four telephone numbers (555-1111,..., 555-4444). The FAX is sent immediately instead of waiting for the economy delivery time.

```
### Start broadcasting shell script
# create a text file containing the "hello world" banner
echo hello world > /tmp/FAXfile
for phone_number in 5551111 5552222 5553333 5554444
do
# send the hello world banner to each number
 /sbfax/bin/faxit /tmp/FAXfile $phonenumber "no"
done
### End broadcasting shell script
```

Another option in broadcasting a FAX is to read the telephone number destinations from a file instead of "hardcoding" them within the shell script. That way, the address list can be updated easily. This shell script can be executed

- From the command line
- From crontab
- By a Script Builder application using the Exec_UNIX action and called from a remote location

## Installing the Script Builder FAX Actions without a FAX Circuit Card

You can install Script Builder FAX Actions Release 3.5 without a FAX circuit card. However, you will not be able to use all of the Script Builder FAX Actions Release 3.5 functionality. On a system that does not contain a FAX circuit card, you can develop actions that use all eight FAX actions. However, you will only be able to run and test the Exec_UNIX, FAX_Combine, Concat5, FAX_CNG and FAX_CovrPage actions. FAX_Send, FAX_Current and FAX_Get will not work because they need the FAX circuit card.

To install Script Builder FAX Actions Release 3.5 without the FAX circuit card, enter "**X**" when you are prompted for the Interrupt value during installation. This will prevent the UNIX kernal from being rebuilt.

## Activating Additional faxingDips

The faxingDip is the system process that processes requests from the FAX Actions. It is designed to complete one request before moving onto the next request. You should design your application so that the faxingDip is not spending too much time on any one request. One way to do this is to keep file conversions to a minimum.

Up to four faxingDips can be active on the system simultaneously. The installer selects the number to activate when the software is installed. If it becomes necessary to change the number of active faxingDips, use the **/sbfax/bin/SetFaxDips.sh** tool.

**NOTE:**
You must stop the voice system before executing the *SetFaxDips.sh* command. Therefore, do it after hours, if possible.

The correct syntax for use of this utility is:

**/sbfax/bin/SetFaxDips.sh *N* 1**

where *N* is the number of active faxingDips desired. The "1" tells the utility that it is being executed from the command line instead of via the installation script.

## Readministering the Country Code

Different countries have different telecommunications network properties. Script Builder FAX Actions Release 3.5 can adapt to many countries, but must know the country in which it is operating to be able to adapt properly. The installer informs the system about where it will operate during software installation. If it becomes necessary to change the country code, use the "**/sbfax/bin/SetPlace.sh**" tool.

**NOTE:**
The voice system must be stopped before executing this command. Therefore, do it after hours, if possible.

The correct syntax for the SetPlace.sh utility is:

**/sbfax/bin/SetPlace.sh Code**

where *Code* is the code for the country in which the system is to operate. See Chapter 2, "Installing Script Builder FAX Actions Release 3.5", for a list of "Country Codes".

## How to Use the Faxdaily.log File

Every FAX transmission or reception attempt results in an entry being added to the faxdaily.log file. Use this file to determine the status of each FAX request. This file resides in the **/usr/faxdb/spool/logs** directory. The format of each faxdaily.log entry varies depending on the type of operation that resulted in that entry. Each entry in the file contains fields separated by spaces. The fields have the following meanings:

- Month
- Day
- Two-digit year
- Time of operation: hour
- Time of operation: minutes
- Transmission type (used only by the system)
- Disposition of operation:
  - S=success
  - B=busy signal received
  - F=failure
  - P=FAX job purged from the system following failure
- FAX Sender:
  - Null if FAX_Current
  - "FAX_RESPONSE" if FAX_Send
  - "ADMIN_ACCOUNT" if FAX_Get
- Transmission receiver if FAX_Send:
  - "_" if FAX_Current
  - Delivery number if FAX_Send
  - "FAX Actions" if FAX_Get
- Action specific information:
  - LogID if FAX_Current
  - JobID if FAX_Send
  - FAX Channel Key if FAX_Get

**NOTE:**
This field may be used as a key to associate specific FAX Actions with faxdaily.log entries.

- Number of pages in FAX transmission
- Time required to complete the operation
- FAX channel used for the operation

# Troubleshooting Script Builder FAX Actions Release 3.5

# 10

## What's in This Chapter

This chapter contains troubleshooting information related to use of Script Builder FAX Actions Release 3.5. Troubleshooting information and aids are available to the application developer through the screen-based interface, for example, HELP screens, action return values, and logger messages.

Other useful troubleshooting tools are available from the UNIX shell prompt. These tools are intended to be used by more advanced users. Take care in using them if you are not comfortable with working at the UNIX shell level.

# Troubleshooting Tools

CONVERSANT VIS, Script Builder FAX Actions Release 3.5, and Script Builder provide diagnostic and troubleshooting information in several of the following basic forms.

## HELP Screens

To access HELP screens, press HELP when defining any Script Builder FAX action. The HELP screen provides information about how to use the particular action.

## Script Builder Action Return Values

You can generally diagnose problems related to using the Script Builder actions including Script Builder FAX Actions Release 3.5 using the values returned by the actions (return values). For the most part, negative return values indicate problems. If you receive a negative return value, see the HELP screens associated with the action that returned it, the "Troubleshooting Guide" later in this chapter, or the explain text associated with any resulting error log entries. These sources will give you information about how to interpret the return value and actions necessary to remedy the problem.

## Application Tracing

The tracing utility allows you to monitor each step of a running application including any DIP interactions that occur. See the *CONVERSANT VIS Version 5.0 Command Reference, 585-310-230,* for more information about how to trace an application. You can frequently use the error indications in trace output to identify problems. Trace the “faxingDip” for information about the Script Builder FAX Actions Release 3.5 DIP. To trace the faxingDip, enter **/vs/bin/trace faxingDip** at the system console.

**NOTE:**
You can also trace faxingDip1, faxingDip2, and faxingDip3 if they are active.

To exit trace, pr DEL .

## FAX Transmission Control

The FAX Transmission Control window provides a list of and information about the FAXes currently in the transmission queue. From there you can remove FAXes from the transmission queue. For information on how to use the FAX Transmission Control window, see Chapter 3, "FAX Equipment Operations".

## FAX Circuit Card Diagnostics

FAX Equipment Diagnostics, described in detail in Chapter 3, "FAX Equipment Operations", provides FAX equipment diagnostics that you can execute on a per-channel or per-board basis without service interruption. Problems in FAX circuit cards can be found this way. If a particular FAX channel shows symptoms of trouble, diagnose it.

## Faxview

Use the **faxview** command to view any FAX file at the system console. This is essentially the same tool that is incorporated within the FAX Loading, Viewing, and Printing form, but you can use this version from the system console without entering the administrative windows. You can also use it to view any FAX file on the system, not just those that have been loaded in the FAX Loading, Viewing, and Printing window. To use the *faxview* command, execute the following command line from the unix shell prompt, where <*filename*> is the full pathname of the FAX file to be viewed:

**/fax/admin/procs/faxview <*filename*>**

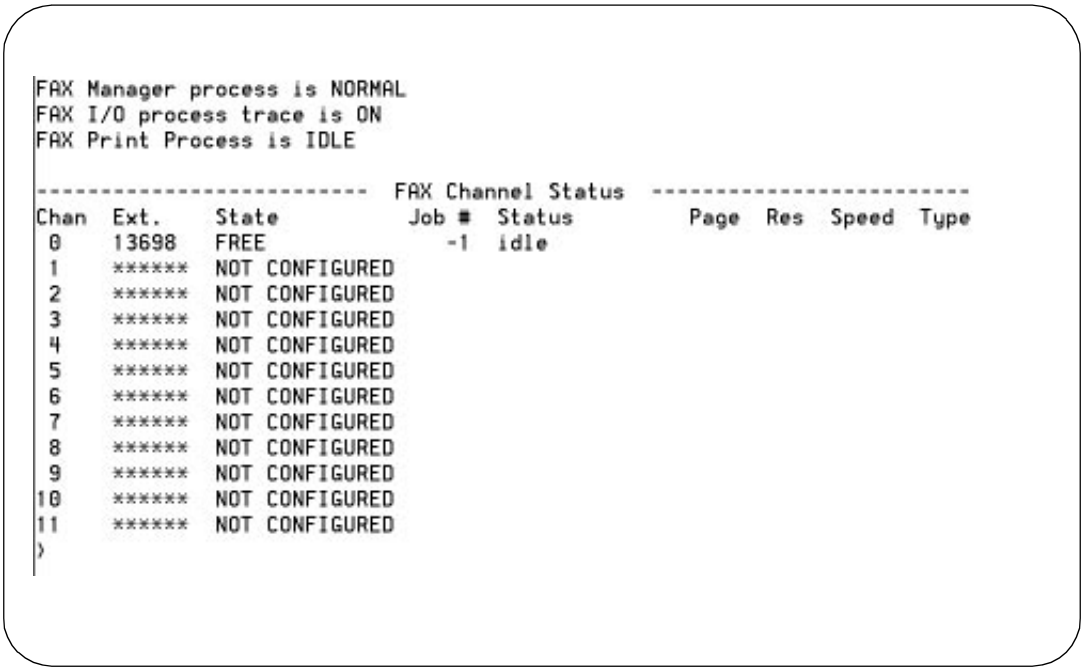
Press ESC to return to the UNIX shell.

## Faxtool

The **faxtool** command provides information about the status of each FAX channel and about FAX delivery jobs that have been queued. To use the **faxtool** command, execute the following command line from the UNIX shell prompt:

**/fax/bin/faxtool**

Figure 10-1 shows the faxtool screen.



```
FAX Manager process is NORMAL
FAX I/O process trace is ON
FAX Print Process is IDLE

-------------------------  FAX Channel Status  -------------------------
Chan  Ext.    State          Job #  Status         Page  Res  Speed  Type
 0    13698   FREE              -1  idle
 1    ******  NOT CONFIGURED
 2    ******  NOT CONFIGURED
 3    ******  NOT CONFIGURED
 4    ******  NOT CONFIGURED
 5    ******  NOT CONFIGURED
 6    ******  NOT CONFIGURED
 7    ******  NOT CONFIGURED
 8    ******  NOT CONFIGURED
 9    ******  NOT CONFIGURED
10    ******  NOT CONFIGURED
11    ******  NOT CONFIGURED
>
```

**Figure 10-1. Faxtool Screen**

The columns on the *faxtool* command screen have the following meanings:

- Chan — The FAX channel on which the FAX was sent.
- Ext — The extension assigned to the FAX Channel
- State — The state of the FAX channel, for example:
  - — idle — Available for use
  - — disabled — Not available for use. To make idle, connect a working Tip/Ring (T/R) line, administer the correct telephone number, and diagnose the channel
  - — admin_reserved — Reserved for use in the FAX Loading, Viewing, and Printing form
  - — reserved — Reserved for other use
  - — active — In use
- Job# — The JOB ID of the FAX transmission. This is the value returned in the FAX_Send action Return Value field and by the **faxit** command.
- Status — Available or not.
- Pg — Page number being transmitted.

- Res — Resolution being used, either standard (std) or fine.
- Spd — Speed of transmission.

There are several things the **faxtool** command can tell you. For information about which faxtool command options are available, type "?" at the **Faxtool** Command Screen (Figure 10-1) and press ENTER.

System response:

The **Faxtool** Command HELP Screen appears (Figure 10-2).

```
Chan  Ext.    State          Job #  Status         Page  Res  Speed  Type
 0    13698   FREE              -1  idle
 1    ******  NOT CONFIGURED
 2    ******  NOT CONFIGURED
 3    ******  NOT CONFIGURED
 4    ******  NOT CONFIGURED
 5    ******  NOT CONFIGURED
 6    ******  NOT CONFIGURED
 7    ******  NOT CONFIGURED
 8    ******  NOT CONFIGURED
 9    ******  NOT CONFIGURED
10    ******  NOT CONFIGURED
11    ******  NOT CONFIGURED
> ?
        null or ENTER - display current FAX channel status
        list - list scheduled FAX jobs
        show (job #) - show detail information on a FAX job
        kill (job #) - kill a FAX job
        free (channel #) - free a FAX channel if reserved
        trace (on | off) - turn FAX I/O process trace on or off
        log - display FAX log information
        q or quit - quit FAX tool
        ? - display faxtool help
>
```

**Figure 10-2. Faxtool Command HELP Screen**

To use a **faxtool** command, enter it after the ">" prompt.

System response:

The system displays the information requested.

To exit the faxtool screen, enter **q** and press ENTER.

## Faxtool Tracing

Faxtool allows you to trace the activity that occurs on the FAX channels. The "faxio" processes provide the actual input to the trace.

**NOTE:**
FAX channel tracing is not the same as tracing the faxingDip. The faxingDip interfaces between the application and the FAX manager whereas FAX channel tracing shows what actually occurs on each FAX channel. The FAX channel trace output is actually produced by the faxio process.

To turn on FAX channel tracing, enter *trace on* after the faxtool ">" prompt. FAX channel tracing output can be very useful in determining the source of trouble. When tracing is active, the trace output is automatically placed into the file "**/tmp/faxsrv.log**." To view this trace output, use your favorite text editor, **more**, or **pg**.

If problems occur, you will see trace information that lists an error number (usually a negative integer). Table 10-1 lists error numbers and their meanings.

**Table 10-1. Faxtool Error Numbers and Meaning**

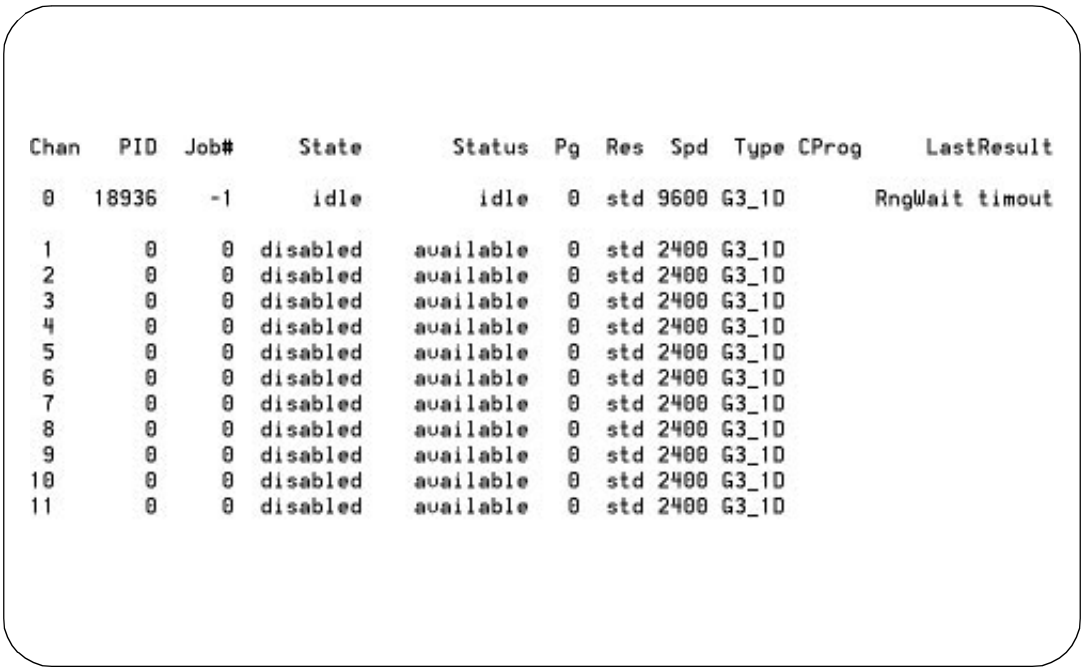
| Error Number | Meaning |
|---|---|
| -10 | Time expired before call arrived on FAX channel (FAX_Get or FAX_Current) |
| -11 | Destination line busy |
| -12 | No FAX initialization tone response |
| -13 | No response to training |
| -14 | No response after training |
| -15 | Line was disconnected |
| -40 | No channel attached |
| -41 | No dial tone found |
| -42 | Other dialing error |
| -43 | Unknown error |
| -44 | Hardware problem |
| -45 | Requested channel cannot be accessed |
| -46 | No file opened |
| -47 | No ring detected |
| -48 | Ringing detected but no answer |
| -49 | Human voice detected; probably a wrong number |
| -50 | Invalid telephone number |

## Faxmon

Faxmon is a real-time FAX channel monitoring function. It is similar to the CONVERSANT VIS system monitor, but works for FAX channels instead of voice channels. To use it, enter **/fax/bin/faxmon** at the Unix shell prompt.

System response:

The Faxmon Screen appears (Figure 10-3).



| Chan | PID | Job# | State | Status | Pg | Res | Spd | Type | CProg | LastResult |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 18936 | -1 | idle | idle | 0 | std | 9600 | G3_1D | | RngWait timout |
| 1 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 2 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 3 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 4 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 5 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 6 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 7 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 8 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 9 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 10 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |
| 11 | 0 | 0 | disabled | available | 0 | std | 2400 | G3_1D | | |

**Figure 10-3. Faxmon Screen**

The columns of the faxmon have the following meaning:

- Chan — The FAX channel on which the FAX was sent.
- PID — The process ID of the faxio process handling the particular FAX channel.
- Job# — The JOB ID of the FAX transmission. This is the value returned in the FAX_Send action Return Value field and by the **faxit** command.
- State — The state of the FAX channel, for example:
  - idle — Available for use.
  - disabled — Not available to use. To make idle, connect a working T/R line, administer the correct telephone number, and diagnose the channel.
  - admin_reserved — Reserved for use in the FAX Loading, Viewing, and Printing form.
  - reserved — Reserved for other use.
  - active — In use.
- Status. The last activity to occur on this channel or available (not in use).
- Pg. Page number being transmitted.
- Res. Resolution being used, either standard (std) or fine.
- Spd. Speed of transmission.
- LastResult. The result of the last FAX transmission attempt.

To exit faxmon, press DEL.

## Faxit

The faxit command allows you to send a FAX from the UNIX prompt. To use it, enter the following command line:

**/sbfax/bin/faxit <*FAX File*> <*Phone Number*> <*ECON*>**

Where:

- *FAX File* is the full pathname of the file to be sent. If the file is a text file, it is automatically converted to FAX file format before being transmitted. If the file is already in FAX file format, it is not converted.
- *Phone Number* is the telephone number of the FAX machine to which the FAX File is transmitted. The “Dial String For Outside Call” is automatically appended to the dial string.
- *ECON* is whether or not (yes or no) the FAX File will be sent during the economy time period. See Chapter 4, "Administering Script Builder FAX Actions Release 3.5", for information about economy time delivery.

In the following example of the **faxit** command, the file **/tmp/FAXfile** will be transmitted to (614) 868-3608 immediately (that is, the system will not wait for the start of the economy time period):

**/sbfax/bin/faxit /tmp/FAXfile 6148683608 no**

## Error Log Reports

The CONVERSANT VIS logger keeps track of information the system generates about its own performance. When problems occur in an application or in the system, symptoms frequently appear in the logger. See *CONVERSANT VIS Version 5.0 Command Reference,* 585-310-230*,* and *CONVERSANT VIS Version 5.0 Maintenance,* 585-310-153, for more information about how to access error log information.

Each Log message has associated “explain” text that explains the message and provides detail that the actual message does not contain. See *CONVERSANT VIS Version 5.0 Command Reference,* 585-310-230*,* and *CONVERSANT VIS Version 5.0 Maintenance,* 585-310-153*,* for more information about how to access explain information.

The explain messages associated with the Script Builder FAX Actions Release 3.5 log messages are listed below.

### ASCII to TIFF Conversion Failed

**NOTE:**
The << SBFAX006 SBF_ASCTOTIFF_FAILED >> line below and similar lines throughout this chapter are explain message identifiers and mnemonics that can be used as arguments to the explain function. Use the explain function to obtain the explain text associated with an error message. For example, to obtain the information below, enter **explain SBFAX006** at the UNIX shell prompt.

<< SBFAX006 SBF_ASCTOTIFF_FAILED >>

The script made a request to transmit a text file to the caller. Before the text file can be sent, it must be converted into the appropriate format. This conversion failed for the text file specified.

Most likely, the file requested is not suitable for transmission. Check to make sure the file is either a text file or a FAX file entered through FAX Loading, Viewing and Printing.

### FAX_Combine Failed

<< SBFAX008 SBF_FAXCOMBINE_FAILED >>

The system attempted to combine two or three files into a single FAX file. This operation failed. For this operation to be completed, file conversions are performed to get the information into a form suitable for transmission.

Most likely, one or more of the files requested are not suitable for transmission. Check to make sure the files requested are either text files or FAX files entered through FAX Loading, Viewing and Printing.

### FAX_CovrPage Failed

<< SBFAX009 SBF_FAXCOVRPAGE_FAILED >>

The script request to join two files into a single FAX file (possibly for use as a cover page) failed. For this operation to be completed, file conversions are performed to get the information into a form suitable for transmission.

Most likely, one or both of the files requested are not suitable for transmission. Check to make sure the files requested are either text files or FAX files entered through FAX Loading, Viewing and Printing.

### FAX File Not Found

<< SBFAX004 SBF_FAXFILE_NOTFOUND >>

The script request to transmit a FAX file to the caller failed because the FAX file requested could not be found. Verify that the FAX file exists either in the FAX Loading, Viewing and Printing windows or at the full pathname specified in the script.

The caller did not receive the requested FAX. Consider manually transmitting the FAX message requested by the caller using the delivery number contained in the error message.

### Text File Not Found

<< SBFAX003 SBF_FILE_NOTFOUND >>

The script request to transmit a file to the caller failed because the file requested could not be found. Verify that the file exists and was specified in the script with the appropriate path.

The caller did not receive the FAX they requested. Consider transmitting it manually to the caller using the delivery number contained in the error message.

### FAX_Send Failed

<< SBFAX010 SBF_FAXSEND_FAILED >>

The script request to transmit one or two FAX messages to the caller failed. The return code reported in the error message indicates the result of the delivery request.

This error may be the result of the failure of earlier FAX Actions. For example, if another FAX Action failed and the script did not check its return value, it is likely that the associated FAX_Send action would also fail. Consult the list below to determine the source of the problem.

-6003 FAX file missing
-6105 FAXMGR not running/FAX channels not in service/No phone lines attached

### Exec_UNIX Command Failed

<< SBFAX007 SBF_UNIXCMD_FAILED >>

The script request to execute a UNIX command or shell script failed.

Most likely, the problem is with the command or shell script. Check that the command or shell script that was attempted works when executed manually. If it does, make sure that its full pathname is provided to the script.

## Troubleshooting Guide

Table 10-2 lists symptoms of trouble and the actions to take to resolve the problem.

**Table 10-2. Troubleshooting Guide**

| Symptom | What to Do |
|---|---|
| FAX_Get does not work | ■ Make sure the directory and file into which the received FAX will be placed exists.<br>■ If the FAX was not correctly received, it is possible that the transfer from the voice port to the FAX channel did not work. Make sure that the system is administered to work correctly on your switch. Make sure the transfer parameters are OK. Check the transfer sequence, the flash duration, wink interval, etc.<br>■ Make sure callers press the start button on their FAX machine when directed to do so.<br>■ Check where the FAX was placed upon reception. It could be that it was received, but not where you think it was received.<br>■ Make sure the call is arriving on a Tip/Ring channel and not a T1 channel.<br>■ Check for the possibility that no FAX channels are available. Check the action return value to determine.<br>■ Make sure that the FAX channels are correctly administered. The extension assigned might be incorrect. |
| FAX_Send does not work | ■ Make sure the FAX files you tried to transmit exist and make sure they exist where you think they exist. Check the error log for any messages.<br>■ Make sure the delivery number used is correct.<br>■ Make sure you are not using both the system “Dial String for Outside Call” and a dial string in your application.<br>■ If outside the United States or Canada, leave the “Dial String for Outside Call” parameter blank. Incorporate any needed dial strings in your application.<br>■ Check if the number to which the FAX was attempted to be delivered is the same number administered as the FAX Telephone Number (see Figure 4-2). The system will not deliver a fax to itself, so either change the FAX Telephone Number or readminister the FAX Machine to a different number. |

***Continued on next page***

**Table 10-2. Troubleshooting Guide — *Continued***

| Symptom | What to Do |
|---|---|
| FAX_Current does not work | ■ If the caller did not receive the requested FAX, it is possible that the transfer from the voice port to the FAX channel did not work. Make sure the system is administered to work correctly on your switch, and that the transfer parameters such as flash duration and transfer protocol are correct.<br>■ Make sure callers presses the start button on their FAX machine when directed to do so.<br>■ Make sure the call is arriving on a Tip/Ring channel and not a T1 channel.<br>■ Check for the possibility that no FAX channels are available. Check the action return value to determine. Free any FAX channels that appear to be incorrectly in the “reserved” state using faxtool.<br>■ Make sure that the FAX channels are correctly administered. The extension assigned might be incorrect.<br>■ A return code of -1 indicates a system problem. Stop and then restart the voice system.<br>■ A return code of -2 indicates that the script timed-out waiting for the faxingDip to respond, possibly because heavy file conversion was required. Use the ALARM capability with nwitime to prevent the script from timing out (see comments in **/vs/bin/ag/eascripts/FAX_Current.t**).<br>■ A return code of -3 indicates that a FAX channel was not available. Your system might be too busy for the number of FAX channels you have. Add a FAX board.<br>■ A return code of -4 indicates that the LogID you used is too big. Reduce its size to six characters or less.<br>■ A return code of -5 indicates a script timeout as with -2. However, in this case, the FAX channel could not be freed by the system. Most likely, no action is necessary. The system will eventually free the FAX channel.<br>■ A return code of -6 indicates that the faxingDip could not completely process the action. Check the error log for more detail. Most likely, the FAX file you used does not exist or is not located where you specified.<br>■ A return code of -7 indicates the same problem as -6. However, in this case, the FAX channel could not be freed. |

***Continued on next page***

**Table 10-2. Troubleshooting Guide — *Continued***

| Symptom | What to Do |
|---|---|
| Concat5 does not work | ■ Make sure the strings you are concatenating do not add up to more than 255 characters.<br>■ If you need spaces between fields, they must be inserted explicitly. There is no automatic insertion of spaces between fields.<br>■ Make sure the destination field is big enough to accept the concatenated result. |
| Exec_UNIX does not work | ■ If the command does not execute, make sure it works OK from the console command line. If not, fix the command. If the command does execute, you might have a path problem. Specify all commands using their full pathnames. Include any environment parameters needed by the command. You can add environmental parameters to the faxingDip environment (which executes the command) by inserting needed lines into the **/sbfax/bin/faxingDip.sh** files. |
| FAX_Combine does not work | ■ Check the error log for relevant messages.<br>■ Make sure the files you are combining actually exsist and are in the correct format.<br>■ Check where the resulting file is placed. You might be looking in the wrong place. |
| FAX_CovrPage does not work | ■ Check the error log for relevant messages.<br>■ Make sure the files you are combining actually exsist and are in the correct format.<br>■ Check where the resulting file is placed. You might be looking in the wrong place. |
| faxmgr respawns periodically | ■ Connect at least one working T/R line to a FAX circuit card. Then diagnose the card and put the channel in service. |
| All available FAX channels are not being used for FAX delivery. | ■ Save the FAX Actions Parameters in the FAX Actions Parameter Admnistration form (even if no parameters need to change). This will reset the number of FAX channels to use for outgoing FAX delivery. |

***Continued on next page***

**Table 10-2. Troubleshooting Guide — *Continued***

| Symptom | What to Do |
|---|---|
| When loading a FAX, the number dialed does not answer | ■ Make sure the number administered and dialed is correct. Disconnect the T/R line from the FAX circuit card and connect it to a regular telephone. Call the telephone number. If it rings, the number administered and dialed is correct.<br>■ If the number is correct and the problem still occurs, exit the administrative screens, then re-enter.<br>■ Use the **faxtool free** command to get the FAX channel in the "free" state.<br>■ Check for a bad FAX circuit card or channel using diagnostics. |
| FAXes do not get transmitted | ■ Make sure the number being called is the correct number.<br>■ Is the transmission delayed because economy transmission was requested?<br>■ Make sure that the requested FAX exists and is in the expected directory.<br>■ Make sure the T/R lines connected to the FAX circuit cards are working and are able to dial an outside telephone number. If necessary, unplug a T/R line from the FAX circuit card, plug it into a regular telephone, and dial a telephone number.<br>■ Make sure the "Dial String For Outside Call" parameter is correct. If it is not being used, make sure that any needed dial strings are appended by the application to the FAX Delivery Number.<br>■ Make sure you are not using both the system "Dial String for Outside Call" and a dial string in your application.<br>■ If outside the United States or Canada, leave the "Dial String for Outside Call" parameter blank. Incorporate any needed dial strings in your application.<br>■ Make sure the destination FAX machine is a group 3 FAX device.<br>■ Diagnose the FAX equipment and check for a bad FAX channel or circuit card.<br>■ The FAX could be corrupted. Try to view it. If necessary, reload it.<br>■ Use the faxtool trace capability to determine what exactly happens when the delivery number is dialed. Refer to Table 10-1 if you notice error conditions in the **/tmp/faxsrv.log** file.<br>■ Make sure any Concat5 actions used to create your FAXes were successful. |

***Continued on next page***

**Table 10-2. Troubleshooting Guide — *Continued***

| Symptom | What to Do |
|---|---|
| A negative return value is returned by a FAX Action | ■ There should be an associated logger entry for negative returns. Check the system logger and use “explain” if necessary to understand the log messages.<br>■ If the return is -6003, the FAX you tried to transmit does not exist.<br>■ If the return is -6105, the fax manager is not running, no FAX channels are in-service, or no T/R lines are attached and/or working. Connect a working T/R line to the FAX circuit card, diagnose the card, and administer its extensions. |
| Installation fails | ■ Make sure the FAX circuit card IRQ and I/O settings are correctly configured.<br>■ If you mistakenly hit the DEL key, try to install the software again.<br>■ Remove any circuit cards from the system that are not used or configured.<br>■ If installation fails repeatedly, you might have corrupted floppy disks. |
| Excessive script delays | ■ Reduce the size of any text files that are being transmitted. If possible, load text files through the FAX Loading, Viewing, and Printing form.<br>■ See the various tips in Chapter 6, "Using Script Builder FAX Actions Release 3.5", and "Application Performance Considerations" in Chapter 9, "Advanced Topics".<br>■ Use SetFaxDip.sh to activate more faxingDips. |
| FAX_Zapper does not work | ■ Make sure that FAX_Zapper is installed correctly.<br>■ Make sure that the sample application is named FAX_Zapper or, if not, needed application changes were made.<br>■ Make sure you are not using both the system “Dial String for Outside Call” and a dial string in the FAX Zapper.<br>■ If outside the United States or Canada, leave the “Dial String for Outside Call” parameter blank. Incorporate any needed dial strings in your application.<br>■ Check the error log.<br>■ The FAX_Zapper uses the PBX_DIALSTRING field to store the number to dial from a Tip/Ring line to access a line outside the PBX. For example, if a caller requests that a FAX be sent to 868-3608, the FAX board will actually dial 9,8683608 if the PBX_DIALSTRING is set to the default. The default value is *9,* where the *,* results in a pause. Change the PBX_DIALSTRING value to conform to your PBX if necessary. |

***Continued on next page***

**Table 10-2. Troubleshooting Guide — *Continued***

| Symptom | What to Do |
|---|---|
| Cannot print FAXes or reports on the laser printer | ■ Make sure the laser printer is turned on.<br>■ Make sure the laser printer is online.<br>■ Make sure the laser printer has paper and an ink cartridge.<br>■ Make sure that the “Destination for printing” parameter is correctly set to “lp”.<br>■ Make sure the laser printer is correctly connected to the system. Check the cable.<br>■ Make sure the laser printer is correctly installed and administered.<br>■ Enable the printer, if necessary.<br>■ Try printing something from the system console using “lp filename”. If this does not work, the printer is not correctly administerd.<br>■ Make sure the “lp” line in the **/etc/conf/cf.d/sdevice** file has a “Y” in the second column. If not, change the ”N” in the second column of the **/etc/conf/sdevice.d/lp** file to a “Y”. Then execute **/etc/bin/idbuild** and reboot.<br>■ Make sure the parallel port is enabled through setup.<br>■ Make sure the I/O address in setup matches the I/O address in the **/etc/conf/cf.d/sdevice** file. |
| FAX Channel is missing. Only three (or fewer) of four channels appear in the FAX Channel Administration window or through FAX Equipment Diagnostics | ■ Make sure the FAX circuit card is correctly installed and administered.<br>■ Run FAX Equipment Diagnostics again. |
| FAX files from one channel get overwritten by FAX files from another channel | ■ Use the channel number as a key when referencing files using FAX_Combine, FAX_CovrPage, and Exec_UNIX. See the various tips in Chapter 6, "Using Script Builder FAX Actions Release 3.5". |

***Continued on next page***

**Table 10-2. Troubleshooting Guide — *Continued***

| Symptom | What to Do |
|---|---|
| FAX Card Diagnostics Fail | ■ Try the diagnostics again.<br>■ Make sure the Tip/Ring lines are properly connected.<br>■ Make sure you are not mixing board types.<br>■ Make sure the country code is correctly administered.<br>■ Make sure the board I/O address and interrupt vector jumper settings are correct.<br>■ Make sure the board is seated properly within the hardware platform.<br>■ If you are using the two channel TR112 board, you might need to use the "IFP2 with MC-III card update." Otherwise, swap this board with a four-channel TR114/114+ FAX circuit card.<br>■ If diagnostics hang, kill the /fax/admin/shells/faxdiag.sh process. |
| Some tones not correctly recognized by the tip/ring board | ■ Make sure the application does a FAX_CNG reset if it does a FAX_CNG listen. |
| The FAX Loading, Viewing, and Printing window gets scrambled when you attempt to enter it | ■ An inappropriately named file got into the **/usr/faxdb/FR/WORKFAX directory**. Remove any files in this directory that are not named in the form fax*N*, where *N* is from 1 to 999. |
| FAXCNG does not work | ■ Make sure the transaction is occurring on a T/R line, not T1 or LST1. FAXCNG does not work on T1 or LST1.<br>■ Use an Evaluate step to check for the "E" return which signifies existence of the FAXCNG tone on the line. Prompt & Collect cannot return the "E". Refer to the FAX Zapper application for an example.<br>■ Reduce the OVOL setting from the Switch Interface Administration menu so that any outgoing speech does not interfere with FAXCNG reception. A value of 250 or lower might be required. |

# Using AUDIX Voice Power and/or the AT&T FAX Attendant System with Script Builder FAX Actions

# 11

## What's in This Chapter

This chapter provides:

- A description of the AT&T FAX Attendant System (FAS), including its services and features
- Information about when you should use the AT&T FAX Attendant System instead of Script Builder FAX Actions Release 3.5
- Instructions on how to install Script Builder FAX Actions Release 3.5 and AUDIX Voice Power (AVP) and/or the AT&T FAX Attendant System together

**NOTE:**
The AT&T FAX Attendant System can be obtained by contacting your AT&T sales representative.

## What Is the AT&T FAX Attendant System?

The AT&T FAX Attendant System provides telephone-based FAX messaging and FAX-on-demand services and the operational environment in which to administer and maintain these services. When you buy the AT&T FAX Attendant System for your CONVERSANT VIS, you get Script Builder FAX Actions Release 1 for no additional cost. The AT&T FAX Attendant System consists of software and documentation. It can be purchased with or without a FAX circuit card and installed on a variety of hardware platforms including those supported by CONVERSANT VIS.

**NOTE:**
System and telephony/PBX administration is sometimes necessary to use the AT&T FAX Attendant System. For example, you must create mailboxes and define subscriber profiles and system parameters.

## FAX Attendant Features

The AT&T FAX Attendant System software supports FAX mail, FAX Call Answer, FAX Response Service, and additional transmitting and reporting services. These features are detailed in the following sections.

### FAX Mail

FAX mail is a subscriber-based service that allows subscribers to send and receive FAX messages from their mailbox. It can be thought of as the FAX equivalent of the voice-mail service available via AT&T's AUDIX and AUDIX Voice Power products.

When installed on the same hardware platform as AUDIX Voice Power, the FAX Attendant System supports an integrated voice/FAX mailbox. This means that users can call a single number and retrieve both voice and FAX messages. When the FAX Attendant System is installed without AUDIX Voice Power, it supports a FAX mailbox only and contains no voice messaging capabilities. In either configuration users are notified of new messages in their mailboxes via outcalling to telephones or pagers or via Message Waiting Lamps on their telephones.

The FAX mail service also supports the following features:

- FAX broadcasting to both subscribers and nonsubscribers
- Group mailing lists
- Remote retrieval of FAX messages from any FAX machine
- Printing of FAX messages to an attached laser printer

- Delivery reports listing all intended recipients of a FAX message and whether or not they received the FAX
- Optional automatic printing of FAXes from the user's mailbox to either a FAX machine or a laser printer

## FAX Call Answer

The FAX Call Answer service provides coverage for the user's FAX machine. If the user's FAX machine is busy or out of paper, the FAX Call Answer service accepts incoming FAX messages and places them in the intended recipient's mailbox. The subscriber can then locally or remotely retrieve the FAX.

The FAX Call Answer service can also provide subscribers with the "appearance" of a private FAX machine when none exists. To callers, this "virtual" FAX machine appears like a real FAX machine except that it can have an optional personal greeting. The service also allows a group of users to share a virtual FAX machine.

## FAX Response Service

The FAX Response service is a user defined "FAX-on-demand" vehicle. The AT&T FAX Attendant window-based administrative capabilities are used to create a FAX-on-demand service, which allows callers to request and to send FAX information based upon their touch-tone response to the prompts defined in the service.

For example, a FAX Response service might present the caller with the following options: "To receive a FAX of our latest product brochure, press 1. To receive a FAX of our maintenance updates, press 2. To hear our latest marketing announcement, press 3. To talk to a sales agent, press 4." Such a service can be easily defined and implemented using FAX Response. This service is similar to the Automated Attendant service offered with the AUDIX Voice Power product except that it also provides FAX-back capability.

The FAX Response service and the administrative capabilities used to define it provide the following options:

- Callers can request and receive multiple FAXes on a single call.
- Callers can be transferred to other extensions/departments.
- Automatic transfers to an operator and/or attendant can be performed if the caller calls from a non-touch-tone telephone or if the caller requests it.
- FAXes can be transmitted to either the FAX machine from which the caller is making the requests or to a caller-specified telephone number.
- Optional password-only access for secured information is available.

- Automatic optional collection of voice numbers for follow-up and/or marketing efforts can be used.
- An optional system-wide coversheet that can be attached to all outgoing Fax Response FAXes is available.
- You can load and view those FAXes that callers have the option to request.
- You can record prompts to be used with the service.

The Fax Response Administration windows are used to administer the graphic images sent to callers from the Fax Response service.

## Additional Features

The AT&T FAX Attendant System provides the following additional features:

- *Automatic transmission retry*. If a FAX transmission fails because, for example, the intended recipient FAX machine was busy, out of paper, or otherwise out of service, the FAX Attendant System automatically retries the transmission for a user-defined period of time up to 99 hours.
- *Optional economy delivery*. FAXes can be delivered immediately or at a specified time, for example, when the telephone rates are lower.
- *Comprehensive system reporting*. System reports include mailbox usage reports, FAX resource utilization reports, and a report that lists how many times each Fax Response FAX was requested, and the telephone numbers of the callers requesting them.
- *FAX Transmission Control*. You can view the FAX transmission queue and cancel any transmission that is waiting to be delivered.
- *User-level and administrative integration with AUDIX Voice Power*. When AUDIX Voice Power is installed with FAX Attendant, the two products effectively “merge” into a single interface for both the user and the caller. This means that a caller can send and receive both voice and FAX messages on a single call. It also makes it convenient to administer both products since the administrative screens are integrated into a single administrative interface.

## When to Use the FAX Attendant Services Instead of Script Builder FAX Actions Release 3.5

The AT&T FAX Attendant System provides a rich set of FAX messaging (mailbox) features that you can use with no customizing beyond the usual administration. If you need a FAX messaging system, and do not want to develop a messaging capability using Script Builder FAX Actions Release 3.5, use the AT&T FAX Attendant System.

## When to Use the Script Builder FAX Actions Instead of the FAX Attendant Services

When you need to define an application that requires additional flexibility beyond the existing FAX Attendant System services, use Script Builder FAX Actions Release 3.5. The following are some situations in which you should use Script Builder FAX Actions Release 3.5 instead of the AT&T FAX Attendant System services:

- When you need multiple FAX Response or FAX-on-demand services, perhaps based upon number dialed, channel reached, or caller-entered information
- When you need to use other CONVERSANT capabilities in conjunction with the FAX-on-demand service, for example speech recognition, text-to-speech, database access, and/or host connectivity
- When you want to send the caller dynamically created FAXes, that is, FAXes created “on-the-fly” based upon information entered by the caller.

**NOTE:**
Because the FAX Attendant Services (FAX mail, FAX call answer, FAX response), perform call transfers through the switch for some features, you can not assign them to T1 channels. You will instead need a voice card, for example, an IVP6 Tip/Ring (T/R) card. In contrast, Script Builder FAX Actions Release 3.5 (except as discussed earlier) can be used in applications that are assigned to either T1 or T/R channels.

# Installing AUDIX Voice Power and/or the AT&T FAX Attendant System Together

The following sections provide information about installing Script Builder FAX Actions Release 3.5 with AUDIX Voice Power and/or the AT&T FAX Attendant System, including the supported configurations and the required order of installation.

**NOTE:**
When you use Script Builder FAX Actions Release 3.5 on a system that also contains AUDIX Voice Power and or the AT&T FAX Attendant System, the appearance and content of some of the administrative screens will change. Refer to Chapter 3, "FAX Equipment Operations", for more information on what the screens will look like.

## Supported Configurations

The following configurations are supported:

- VIS 5.0 + AVP
- VIS 5.0 + FAS
- VIS 5.0 + SBFAX3.5
- VIS 5.0 + FAS + SBFAX3.5
- VIS 5.0 + AVP + FAS
- VIS 5.0 + AVP + SBFAX3.5
- VIS 5.0 + AVP + FAS + SBFAX3.5

## Order of Installation

When installing Script Builder FAX Actions Release 3.5 with AUDIX Voice Power and/or the AT&T FAX Attendant System, the order of installation must be:

1. AUDIX Voice Power — this must be installed first.
2. AT&T FAX Attendant System — this must be installed after AUDIX Voice Power, but before Script Builder FAX Actions Release 3.5.
3. Script Builder FAX Actions Release 3.5 — this must be installed after AUDIX Voice Power and/or AT&T FAX Attendant System.

**NOTE:**
If Script Builder FAX Actions Release 3.5 has already been installed, you must remove it before installing the AT&T FAX Attendant System, then reinstall it. If a previous version of Script Builder FAX Actions is installed, remove it before installing Script Builder FAX Actions Release 3.5.

# FAX_Zapper Program Listing

# A

## What's in This Appendix

This appendix contains the program listing for the FAX_Zapper.

# FAX_Zapper Program Listing

```
start:

     ##################################################
     ###  FAX_Zapper                                ##
     ###                                            ##
     ###  An adaptable, modifiable FAX-back         ##
     ###  application that you can customize to suit  ##
     ###  your needs.                               ##
     ###                                            ##
     ###  All you need is an idea of what you want to ##
     ###  do and some experience with Script Builder. ##
     ###                                            ##
     ###  Designed and Developed by Marc Polster,     ##
     ###  AT&T Bell Labs                            ##
     ###                                            ##
     ###  Without modification, the FAX Zapper      ##
     ###     - Allows caller to request to get FAXes. ##
     ###       Callers can get the FAXes sent to a    ##
     ###       FAX machine of their choice or can get ##
     ###       them immediately if calling from a FAX ##
     ###       machine.                               ##
     ###     - Allows caller to send FAXes into a     ##
     ###       system mailbox                         ##
     ###     - Allows caller to hear an information   ##
     ###       announcement you record (audiotext)    ##
     ###     - Allows callers to reach an attendant   ##
     ###     - Allows callers to transfer to an       ##
     ###       extension                              ##
     ###     - Allows you to administer the           ##
     ###       FAX_Zapper prompts and FAXes remotely  ##
     ###     - Allows you to retrieve FAXes left by   ##
     ###       callers remotely.                      ##
     ###     - Allows you to broadcast FAXes to an    ##
     ###       address list that you can specify.     ##
     ###                                            ##
     ##################################################


     ##################################################
     ###  Administer the following parameters as      ##
     ###  needed.                                   ##
     ###                                            ##
     ###  -  FAX_EXTENSION:  extension of your office ##
     ###     FAX machine which will receive FAXes     ##
     ###     sent by unattended FAX machines.         ##
     ###  -  ATTENDANT_PHONE:  the extension of the   ##
     ###     person who will act as an attendant for  ##
     ###     the FAX_Zapper application.  When        ##
     ###     enter "0", this extension will be called ##
     ###  -  ADMIN_SECURITY_CODE:  the password used  ##
     ###     for callers to gain access to FAX Zapper ##
     ###     administration.                          ##
     ###  -  PBX_DIALSTRING:  The number added to a   ##
     ###     phone number when dialing the phone      ##
     ###     number from behind a PBX.  Frequently a  ##
     ###     "9" but it depends on how your PBX is    ##
     ###     administered.                            ##
     ##################################################
```

```
1.   Set Field Value
           Field: FAX_EXTENSION = “13608”
           Field: ATTENDANT_PHONE = “NOT_DEFINED”
           Field: ADMIN_SECURITY_CODE = “1234”
           Field: PBX_DIALSTRING = “9,”


     ##################################################
     ###  The following fields do not need to be      ##
     ###  changed.  They are being initialized here.  ##
     ##################################################

2.   Set Field Value
           Field: SELECTED_FAX = 0
           Field: DO_CNG_RESET = “yes”
           Field: FAXES = “/usr/faxdb/FR/WORKFAX/fax”
           Field: MAILBOX = “/att/trans/sb/FAX_Zapper/mbox/”
           Field: BROADCAST_FAX = “/usr/faxdb/FR/WORKFAX/fax9”
3.   Answer Phone

     ##################################################
     ###  Turn on FAX CNG detection.  If the caller   ##
     ###  happens to be a un-attended FAX machine, it ##
     ###  should emit CNG tone.  Detect it here, then ##
     ###  accept the FAX into the system mailbox.     ##
     ###  Be sure to “reset” CNG detection.           ##
     ##################################################

4.   External Action: FAX_CNG
        FAX_CNG_Detection_Mode:  “listen”
        Return Field:  FAX_Action_return
     End External Action

     ##################################################
     ###  Speak the system greeting.  You can modify  ##
     ###  this and other system prompts remotely.     ##
     ###  Read on...                                  ##
     ##################################################

5.   Announce
        Speak With Interrupt
           Phrase: “PHR.HELLO”


     ##################################################
     ###  The Main Menu                               ##
     ##################################################


     MAIN_MENU:
6.   Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: “PHR.MAIN_MENU”
        Input
           Max Number Of Digits: 01
        Checklist
           Case: “Input Ok”
              Continue
           Case: “Initial Timeout”
              Reprompt
           Case: “Too Few Digits”
              Reprompt
           Case: “No More Tries”
              Quit
     End Prompt & Collect
```

```
     ######################################################
     ###  Reset CNG recognition.  Check for an "E".   ##
     ######################################################

7.   External Action: FAX_CNG
        FAX_CNG_Detection_Mode:  "reset"
        Return Field:  FAX_Action_return
     End External Action

8.   Evaluate
     If $CI_VALUE   = 1
9.      Goto GET_FAX
     Elseif $CI_VALUE   = 2
10.     Goto LEAVE_FAX
     Elseif $CI_VALUE   = 3
11.     Goto TRANSFER_2_EXTENSION
     Elseif $CI_VALUE   = 4
12.     Goto ANNOUNCE_INFORMATION
     Elseif $CI_VALUE   = 5
13.     Goto ENTER_SECURITY_CODE
     Elseif $CI_VALUE   = "E"
14.     Goto AUTODIAL_FAX_CALLER
     Elseif $CI_VALUE   = 9
15.     Goto GOODBYE
     Elseif $CI_VALUE   = 0
16.     Goto ATTENDANT
     Else
17.     Goto MAIN_MENU
     End Evaluate


     GET_FAX:
     ######################################################
     ###  The Caller Wants a FAX                      ###
     ###  Present the menu of FAXes available.        ##
     ######################################################

18.  Set Field Value
           Field: NUM_FAXES_REQUESTED = 0
     GET_NEXT_FAX:
19.  External Action: Concat5
        Destination:  combine_FAX
        String1:  "/tmp/combine_FAX"
        String2:  $CHANNEL_NUMBER
        String3:  ""
        String4:  ""
        String5:  ""
        Max_Destination_Length:  255
     End External Action
20.  Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: "PHR.FAX_MENU"
        Input
           Caller Input Field: SELECTED_FAX
           Max Number Of Digits: 01
        Checklist
           Case: "*"
              Goto MAIN_MENU
           Case: "9"
              Goto GOODBYE
           Case: "0"
              Goto ATTENDANT
           Case: "Not On List"
              Continue
```

```
            Case: “Initial Timeout”
               Reprompt
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect
21.   External Action: Concat5
         Destination:  SELECTED_FAX_FILE
         String1:  “fax”
         String2:  SELECTED_FAX
         String3:  “”
         String4:  “”
         String5:  “”
         Max_Destination_Length:  255
      End External Action
22.   Set Field Value
            Field: NUM_FAXES_REQUESTED = NUM_FAXES_REQUESTED + 1
23.   Evaluate
      If NUM_FAXES_REQUESTED   = 1
24.      External Action: Concat5
            Destination:  command_line
            String1:  “cp “
            String2:  “/usr/faxdb/FR/WORKFAX/”
            String3:  SELECTED_FAX_FILE
            String4:  “ “
            String5:  combine_FAX
            Max_Destination_Length:  255
         End External Action
25.      External Action: Exec_UNIX
            Command_String:  command_line
            Return Field:  FAX_Action_return
         End External Action
      Else
26.      External Action: FAX_Combine
            File_1_Name:  SELECTED_FAX_FILE
            File_2_Name:  combine_FAX
            File_3_Name:  “NONE”
            Resulting_File:  combine_FAX
            Return Field:  FAX_Action_return
         End External Action
27.      Evaluate
      If FAX_Action_return   < 0
28.         Goto FAX_Action_error
         End Evaluate
      End Evaluate
29.   Prompt & Collect
         Prompt
            Speak With Interrupt
               Phrase: “To choose another FAX...”
               Phrase: “...enter 1.”
               Phrase: “To continue...”
               Phrase: “...enter 2.”
         Input
            Max Number Of Digits: 01
         Checklist
            Case: “1”
               Goto GET_NEXT_FAX
            Case: “2”
               Goto GET_PHONE_NUMBER
            Case: “*”
               Goto MAIN_MENU
            Case: “9”
               Goto GOODBYE
            Case: “0”
               Goto ATTENDANT
```

```
            Case: “Not On List”
               Reprompt
            Case: “Initial Timeout”
               Reprompt
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect


      GET_PHONE_NUMBER:
30.   Prompt & Collect
         Prompt
            Speak With Interrupt
               Phrase: “To ensure u get FAX we’ll put phone# on cover pg.”
               Phrase: “Please enter your phone number now.”
               Phrase: “You may terminate your input with a pound key.”
         Input
            Caller Input Field: telephone_number
            Min Number Of Digits: 03
            Max Number Of Digits: 11
            TT Terminator Code Value: “#”
         Checklist
            Case: “Input Ok”
               Speak With Interrupt
                  Phrase: “You entered...”
                  Field: telephone_number As C
                  Phrase: “If this is correct, press 1.”
                  Phrase: “If this is not correct, press 2.”
               Confirm 1
            Case: “Initial Timeout”
               Reprompt
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect


      ######################################################
      ###  Create the FAX cover sheet and put the      ##
      ###  caller’s telephone number on it.            ##
      ######################################################


31.   Announce
         Speak With Interrupt
            Phrase: “Your FAX cover page will now be created.”
            Phrase: “Please wait.”

      ######################################################
      ###  Create the following command line to        ##
      ###  execute using Exec_UNIX.                    ##
      ###                                              ##
      ###  “mkcv <phone number> <channel number>”      ##
      ###                                              ##
      ###  Where the shell script “mkcv” uses the      ##
      ###  caller phone number and the channel number  ##
      ###  the FAX_Zapper is running on as input.      ##
      ###                                              ##
      ###  If you’d like to see it, the “mkcv” shell   ##
      ###  script is stored in the following directory ##
      ###                                              ##
      ###        “/att/trans/sb/FAX_Zapper”            ##
      ###                                              ##
```

```
     ###  This technique of using "Concat5" to create ##
     ###  command lines for Exec_UNIX and to create   ##
     ###  "channel-dependant" file names for other    ##
     ###  FAX Actions is illustrated throughout this  ##
     ###  application.                                ##
     ##################################################


32.  External Action: Concat5
        Destination:  command_line
        String1:  "/att/trans/sb/FAX_Zapper/mkcv "
        String2:  telephone_number
        String3:  " "
        String4:  $CHANNEL_NUMBER
        String5:  ""
        Max_Destination_Length:  255
     End External Action

33.  External Action: Exec_UNIX
        Command_String:  command_line
        Return_String:  number_of_pages
        Return Field:  FAX_Action_return
     End External Action
34.  Evaluate
     If FAX_Action_return   < 0
35.     Goto FAX_Action_error
     End Evaluate

     ##################################################
     ###  The following sections of this application  ##
     ###  illustrate a commonly used technique to     ##
     ###  make sure that callers receive the FAX they ##
     ###  requested.  This technique allows the       ##
     ###  FAX_Zapper to store the caller's FAX in a   ##
     ###  uniquely named file.  This prevents a FAX   ##
     ###  intended for a caller on one channel from   ##
     ###  being overwritten by a FAX being created    ##
     ###  for a caller on another channel.            ##
     ###                                              ##
     ###  To illustrate this point, consider the case ##
     ###  in which the FAX_Zapper names the FAX file  ##
     ###  created for the caller "/tmp/FAXFile".      ##
     ###  If the application is run on only a single  ##
     ###  channel, no problem.  However, if it is run ##
     ###  on more than one channel, the /tmp/FAXFile  ##
     ###  created for one caller might be overwritten ##
     ###  by the /tmp/FAXFile being created for a     ##
     ###  caller on another channel.                  ##
     ###                                              ##
     ###  To get around this, we name the files used  ##
     ###  according to the channel the caller happens ##
     ###  to be served by. In the following section,  ##
     ###  for example, we name the cover page being   ##
     ###  created for the caller "/tmp/cover_pageX"   ##
     ###  where X is the channel number on which the  ##
     ###  caller is interacting with the system.      ##
     ##################################################

36.  External Action: Concat5
        Destination:  cover_page_bottom
        String1:  "/tmp/cover_bottom"
        String2:  $CHANNEL_NUMBER
        String3:  ""
        String4:  ""
        String5:  ""
        Max_Destination_Length:  255
```

```
     End External Action
37.  External Action: Concat5
        Destination:  cover_page
        String1:  "/tmp/cover_page"
        String2:  $CHANNEL_NUMBER
        String3:  ""
        String4:  ""
        String5:  ""
        Max_Destination_Length:  255
     End External Action

     ##################################################
     ###  Combine the dynamically created cover page  ##
     ###  bottom, "/tmp/cover_bottomX" (where X is    ##
     ###  $CHANNEL_NUMBER), with the pre-stored       ##
     ###  graphic cover page top:  "fax5".  Put the   ##
     ###  resulting complete cover page in the file   ##
     ###  "cover_page" which was defined above.       ##
     ##################################################

38.  External Action: FAX_CovrPage
        File_1_Name:  "/usr/faxdb/FR/WORKFAX/fax10"
        File_2_Name:  cover_page_bottom
        Fill_The_Page:  "yes"
        Resulting_File:  cover_page
        Return Field:  FAX_Action_return
     End External Action
39.  Evaluate
     If FAX_Action_return   < 0
40.     Goto FAX_Action_error
     End Evaluate

     ##################################################
     ###  Ask the caller how they want to receive the ##
     ###  FAX:  by entering a delivery number or on   ##
     ###  the current call (if calling from a FAX     ##
     ###  machine).                                   ##
     ##################################################

41.  Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: "If calling from FAX machine, u can get fax now."
              Phrase: "Other wise, you may enter the telephone number..."
              Phrase: "To enter a FAX telephone number, press 1."
              Phrase: "To receive the FAX on the current call, press 2."
        Input
           Max Number Of Digits: 01
        Checklist
           Case: "1"
              Goto GET_FAX_NUMBER
           Case: "2"
              Continue
           Case: "*"
              Goto MAIN_MENU
           Case: "9"
              Goto GOODBYE
           Case: "0"
              Goto ATTENDANT
           Case: "Not On List"
              Reprompt
           Case: "Initial Timeout"
              Reprompt
           Case: "Too Few Digits"
              Reprompt
```

```
         Case: “No More Tries”
            Quit
   End Prompt & Collect

   ##################################################
   ###  Send the FAX on the current call.          ##
   ##################################################

   SEND_CURRENT:
42. Announce
      Speak With Interrupt
         Phrase: “Please wait.”
43. External Action: FAX_Current
      FAX_File_1:  cover_page
      FAX_File_2:  combine_FAX
      Log_ID:  “Zapper”
      FAX_Channel_Extension:  FAX_extension
      FAX_Channel_Key:  FAX_channel_key
      Return Field:  FAX_Action_return
   End External Action
44. Evaluate
   If FAX_Action_return   >= 0
45.    Announce
         Speak With Interrupt
            Phrase: “Press the start button on your FAX machine now.”
46.    Transfer To FAX_extension Type: Blind
47.    Goto QUIT
   Else
48.    Prompt & Collect
         Prompt
            Speak With Interrupt
               Phrase: “We’re sorry, their are no FAX channels available.”
               Phrase: “We will send the FAXes to your FAX machine later.”
               Phrase: “To continue...”
               Phrase: “...enter 1.”
               Phrase: “To return to the main menu...”
               Phrase: “...enter star.”
               Phrase: “To quit, press 9.”
         Input
            Max Number Of Digits: 01
         Checklist
            Case: “1”
               Continue
            Case: “*”
               Goto MAIN_MENU
            Case: “9”
               Goto GOODBYE
            Case: “Not On List”
               Reprompt
            Case: “Initial Timeout”
               Reprompt
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect
   End Evaluate


   ##################################################
   ###  Send FAX to a number entered by caller.    ##
   ##################################################

   GET_FAX_NUMBER:
```

```
49.  Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: “Enter your FAX telephone number.”
              Phrase: “You may terminate your input with a pound key.”
        Input
           Min Number Of Digits: 03
           Max Number Of Digits: 11
           TT Terminator Code Value: “#”
        Checklist
           Case: “Input Ok”
              Speak With Interrupt
                 Phrase: “You entered...”
                 Field: $CI_VALUE As C
                 Phrase: “If this is correct, press 1.”
                 Phrase: “If this is not correct, press 2.”
              Confirm 1
           Case: “Initial Timeout”
              Reprompt
           Case: “Too Few Digits”
              Reprompt
           Case: “No More Tries”
              Quit
     End Prompt & Collect

50.  Announce
        Speak With Interrupt
           Phrase: “Your FAX will now be scheduled for delivery.”
           Phrase: “Please wait.”
     #Attach dialstring to delivery number.
51.  External Action: Concat5
        Destination:  FAX_delivery_number
        String1:  PBX_DIALSTRING
        String2:  $CI_VALUE
        String3:  “”
        String4:  “”
        String5:  “”
        Max_Destination_Length:  255
     End External Action
52.  External Action: FAX_Send
        FAX_File_1:  cover_page
        FAX_File_2:  combine_FAX
        FAX_Delivery_Number:  FAX_delivery_number
        Economy_Time_Delivery:  “no”
        Return Field:  FAX_Action_return
     End External Action


     ##################################################
     ###  If the FAX_Send was successful, tell the    ##
     ###  caller that their FAX will be delivered.    ##
     ##################################################


53.  Evaluate
     If FAX_Action_return   > 0
        #We know that the pre-stored FAXes have 4 pages.
        #The final page count will be 4 plus however many
        #pages are in the cover page (one in this case).
54.     Set Field Value
              Field: final_pages = number_of_pages + 4
55.     Announce
           Speak With Interrupt
              Phrase: “Your...”
              Field: final_pages As C
              Phrase: “...page FAX will now be delivered to...”
```

```
            Field: $CI_VALUE As C
            Phrase: “Your FAX Job ID is...”
            Field: FAX_Action_return As Nrmf
            Phrase: “Keep this number for your records.”
56.     External Action: Exec_UNIX
           Command_String:  “rm -rf /tmp/cover* /tmp/combine*”
           Return Field:  FAX_Action_return
        End External Action
57.     Goto CONTINUE
     Else

        ###################################################
        ###  If the FAX_Send was NOT successful, tell    ##
        ###  the caller to try again later.              ##
        ###################################################

58.     Announce
           Speak With Interrupt
              Phrase: “We’re sorry.”
              Phrase: “We are experiencing technical problems.”
              Phrase: “You will not be receiving the FAX requested.”
              Phrase: “Please call back later.”
59.     Goto CONTINUE
     End Evaluate

     AUTODIAL_FAX_CALLER:
60.  Goto DO_FAX_GET


     ###################################################
     ###  The Caller Wants to Leave a FAX            ###
     ###################################################


     LEAVE_FAX:
61.  Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: “To leave FAX you must be calling from FAX machine.”
              Phrase: “To continue...”
              Phrase: “...enter 1.”
              Phrase: “To return to the main menu...”
              Phrase: “...enter star.”
        Input
           Max Number Of Digits: 01
        Checklist
           Case: “1”
              Continue
           Case: “*”
              Goto MAIN_MENU
           Case: “9”
              Goto GOODBYE
           Case: “0”
              Goto ATTENDANT
           Case: “Not On List”
              Reprompt
           Case: “Initial Timeout”
              Reprompt
           Case: “Too Few Digits”
              Reprompt
           Case: “No More Tries”
              Quit
     End Prompt & Collect
```

```
62.  Announce
        Speak With Interrupt
           Phrase: “At the tone, leave a short description of FAX.”
           Phrase: “When finished, press 1.”
63.  External Action: Msg_Code
        Code_Rate:  “ADPCM 32”
        Max_Phr_Len_Sec:  20
        Phrase_Type:  “Phrase Number”
        Phrase_Id:  -1
        Talkfile_Number:  -1
        Initial_Timeout:  5
        Completion_Timeout:  5
        Tone_On:  “Yes”
        Hangup_Action:  “Exit”
        Actual_Phrase_Len_Field:  Phrase_Length
        Talkfile_Phrase_Field:  Phrase_Number
     End External Action
     DO_FAX_GET:
64.  External Action: Concat5
        Destination:  FAX_Get_file
        String1:  MAILBOX
        String2:  $UNIX_TIME
        String3:  “-”
        String4:  $CHANNEL_NUMBER
        String5:  “”
        Max_Destination_Length:  255
     End External Action
65.  External Action: FAX_Get
        FAX_File:  FAX_Get_file
        FAX_Channel_Extension:  FAX_extension
        FAX_Channel_Key:  FAX_key
        Return Field:  FAX_Action_return
     End External Action
66.  Evaluate
     If FAX_Action_return   >= 0
67.     Modify Table
           Table Name: FAX_MBOX Operation: Add
              Field: FAX_MBOX_DATETIME = $UNIX_TIME
              Field: FAX_MBOX_FILE = FAX_Get_file
              Field: FAX_MBOX_PHRASE = Phrase_Number
68.     Announce
           Speak With Interrupt
              Phrase: “With your FAX placed in your FAX machine...”
              Phrase: “Press the start button on your FAX machine now.”
69.     Transfer To FAX_extension Type: Intelligent
           Maximum Number of Rings: 1
           Case: “Answer”
              Complete
              Goto QUIT
           Case: “Busy”
              Reconnect
              Goto TRY_TRANSFER_AGAIN
           Case: “No Answer”
              Reconnect
              Goto TRY_TRANSFER_AGAIN
           Case: “Error”
              Reconnect
              Goto TRY_TRANSFER_AGAIN
        End Transfer
70.     Goto QUIT
     Else
71.     Prompt & Collect
           Prompt
              Speak With Interrupt
                 Phrase: “We’re sorry, their are no FAX channels available.”
                 Phrase: “Call back later to leave your FAX.”
```

```
                Phrase: “To quit...”
                Phrase: “...enter 1.”
                Phrase: “To return to the main menu...”
                Phrase: “...enter star.”
          Input
             Max Number Of Digits: 01
          Checklist
             Case: “1”
                Goto GOODBYE
             Case: “*”
                Goto MAIN_MENU
             Case: “0”
                Goto ATTENDANT
             Case: “9”
                Goto GOODBYE
             Case: “Not On List”
                Reprompt
             Case: “Initial Timeout”
                Reprompt
             Case: “Too Few Digits”
                Reprompt
             Case: “No More Tries”
                Quit
       End Prompt & Collect
    End Evaluate


    ###################################################
    ####  Transfer to an extension entered by caller ##
    ###################################################

    TRANSFER_2_EXTENSION:
72. Prompt & Collect
       Prompt
          Speak With Interrupt
             Phrase: “Enter ext of person you want to speak to and #”
       Input
          Max Number Of Digits: 06
          TT Terminator Code Value: “#”
       Checklist
          Case: “Input Ok”
             Speak With Interrupt
                Phrase: “Your call will now be transferred to extension...”
                Field: $CI_VALUE As Crmf
                Phrase: “Please wait.”
             Transfer To $CI_VALUE
          Case: “Initial Timeout”
             Reprompt
          Case: “Too Few Digits”
             Reprompt
          Case: “No More Tries”
             Quit
    End Prompt & Collect


    ###################################################
    ####  Play the pre-recorded information          ##
    ####  announcement                               ##
    ###################################################

    ANNOUNCE_INFORMATION:
73. Announce
       Speak With Interrupt
          Phrase: “PHR.INFORMATION_ANNOUNCEMENT”
74. Goto CONTINUE
```

```
     ##################################################
     ####  Administer the FAX_Zapper                ###
     ##################################################


     ENTER_SECURITY_CODE:
75.  Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: “Please enter the FAX Zapper admin password and #.”
        Input
           TT Terminator Code Value: “#”
        Checklist
           Case: “Input Ok”
              Continue
           Case: “Initial Timeout”
              Reprompt
           Case: “Too Few Digits”
              Reprompt
           Case: “No More Tries”
              Quit
     End Prompt & Collect
76.  Evaluate
     If $CI_VALUE   != ADMIN_SECURITY_CODE
77.     Evaluate
     If ADMIN_SECURITY_CODE   != “NOT_DEFINED”
78.        Announce
              Speak With Interrupt
                 Phrase: “Sorry.  That was not the correct password.”
                 Phrase: “Access denied.”
79.        Goto CONTINUE
        End Evaluate
     End Evaluate
     ADMIN_FAX_ZAPPER:
80.  Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: “To administer system prompts...”
              Phrase: “...enter 1.”
              Phrase: “To put FAXes into the FAX_Zapper...”
              Phrase: “...enter 2.”
              Phrase: “To retrieve FAXes from the system mailbox...”
              Phrase: “...enter 3.”
              Phrase: “To broadcast a FAX...”
              Phrase: “...enter 4.”
        Input
           Max Number Of Digits: 01
        Checklist
           Case: “1”
              Goto RECORD_PROMPTS
           Case: “2”
              Goto PUT_IN_FAXES
           Case: “3”
              Goto RETRIEVE_MBOX_FAXES
           Case: “4”
              Goto BROADCAST
           Case: “*”
              Goto MAIN_MENU
           Case: “9”
              Goto GOODBYE
           Case: “0”
              Goto ATTENDANT
           Case: “Not On List”
              Reprompt
           Case: “Initial Timeout”
              Reprompt
```

```
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect


      ##################################################
      ####  Administer the System Prompts            ###
      ##################################################


      RECORD_PROMPTS:
81.   Prompt & Collect
         Prompt
            Speak With Interrupt
               Phrase: “To administer the hello prompt...”
               Phrase: “...enter 1.”
               Phrase: “To administer the main menu...”
               Phrase: “...enter 2.”
               Phrase: “To administer the fax menu...”
               Phrase: “...enter 3.”
               Phrase: “To administer the goodbye prompt...”
               Phrase: “...enter 4.”
               Phrase: “To administer the information announcement...”
               Phrase: “...enter 5.”
         Input
            Max Number Of Digits: 01
         Checklist
            Case: “1”
               Continue
            Case: “2”
               Continue
            Case: “3”
               Continue
            Case: “4”
               Continue
            Case: “*”
               Goto MAIN_MENU
            Case: “9”
               Goto GOODBYE
            Case: “0”
               Goto ATTENDANT
            Case: “5”
               Continue
            Case: “Not On List”
               Reprompt
            Case: “Initial Timeout”
               Reprompt
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect
82.   Evaluate
      If $CI_VALUE   = 1
83.      Set Field Value
               Field: ADMIN_PHRASE_TYPE = “HELLO”
      Elseif $CI_VALUE   = 2
84.      Set Field Value
               Field: ADMIN_PHRASE_TYPE = “MAIN_MENU”
      Elseif $CI_VALUE   = 3
85.      Set Field Value
               Field: ADMIN_PHRASE_TYPE = “FAX_MENU”
      Elseif $CI_VALUE   = 4
```

```
86.     Set Field Value
              Field: ADMIN_PHRASE_TYPE = “GOODBYE”
     Elseif $CI_VALUE   = 5
87.     Set Field Value
              Field: ADMIN_PHRASE_TYPE = “INFORMATION”
     Else
88.     Goto RECORD_PROMPTS
     End Evaluate
     ADMIN_PROMPTS:
89.  Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: “To listen to the phrase...”
              Phrase: “...enter 1.”
              Phrase: “To record the phrase...”
              Phrase: “...enter 2.”
              Phrase: “To select another phrase...”
              Phrase: “...enter 3.”
              Phrase: “To return to the FAX_Zapper admin menu...”
              Phrase: “...enter 4.”
        Input
           Max Number Of Digits: 01
        Checklist
           Case: “Not On List”
              Reprompt
           Case: “Initial Timeout”
              Reprompt
           Case: “Too Few Digits”
              Reprompt
           Case: “No More Tries”
              Quit
     End Prompt & Collect
90.  Evaluate
     If $CI_VALUE   = 1

        ###################################################
        ###  Listen to the Prompt                       ##
        ###################################################

91.     Evaluate
     If ADMIN_PHRASE_TYPE   = “HELLO”
92.        Announce
              Speak With Interrupt
                 Phrase: “PHR.HELLO”
93.        Goto ADMIN_PROMPTS
     Elseif ADMIN_PHRASE_TYPE   = “MAIN_MENU”
94.        Announce
              Speak With Interrupt
                 Phrase: “PHR.MAIN_MENU”
95.        Goto ADMIN_PROMPTS
     Elseif ADMIN_PHRASE_TYPE   = “FAX_MENU”
96.        Announce
              Speak With Interrupt
                 Phrase: “PHR.FAX_MENU”
97.        Goto ADMIN_PROMPTS
     Elseif ADMIN_PHRASE_TYPE   = “GOODBYE”
98.        Announce
              Speak With Interrupt
                 Phrase: “PHR.GOODBYE”
99.        Goto ADMIN_PROMPTS
     Elseif ADMIN_PHRASE_TYPE   = “INFORMATION”
100.       Announce
              Speak With Interrupt
                 Phrase: “PHR.INFORMATION_ANNOUNCEMENT”
```

```
101.       Goto ADMIN_PROMPTS
        Else
        End Evaluate
102.    Goto ADMIN_PROMPTS
     Elseif $CI_VALUE   = 2

        ##################################################
        ###  Record the Prompt                         ##
        ##################################################

        RECORD_HELLO:
103.    Announce
           Speak With Interrupt
              Phrase: “Record at the tone.”
104.    Evaluate
     If ADMIN_PHRASE_TYPE   = “HELLO”
105.       External Action: Msg_Code
              Code_Rate:  “ADPCM 32”
              Max_Phr_Len_Sec:  240
              Phrase_Type:  “Tag”
              Phrase_Id:  “PHR.HELLO”
              Talkfile_Number:  0
              Initial_Timeout:  5
              Completion_Timeout:  5
              Tone_On:  “Yes”
              Hangup_Action:  “Exit”
              Actual_Phrase_Len_Field:  Phrase_Length
              Talkfile_Phrase_Field:  ADMIN_PHRASENUM
           End External Action
106.       Announce
              Speak With Interrupt
                 Phrase: “The phrase just recorded will now be played.”
                 Phrase: “PHR.HELLO”
107.       Prompt & Collect
              Prompt
                 Speak With Interrupt
                    Phrase: “To administer another prompt...”
                    Phrase: “...enter 1.”
                    Phrase: “To re-record...”
                    Phrase: “...enter 2.”
                    Phrase: “To return to the FAX_Zapper admin menu...”
                    Phrase: “...enter 3.”
              Input
                 Max Number Of Digits: 01
              Checklist
                 Case: “1”
                    Speak With Interrupt
                       Phrase: “Prompt changed.”
                    Continue
                 Case: “2”
                    Goto RECORD_HELLO
                 Case: “*”
                    Goto MAIN_MENU
                 Case: “9”
                    Goto GOODBYE
                 Case: “0”
                    Goto ATTENDANT
                 Case: “3”
                    Goto ADMIN_FAX_ZAPPER
                 Case: “Not On List”
                    Reprompt
                 Case: “Initial Timeout”
                    Reprompt
                 Case: “Too Few Digits”
                    Reprompt
```

```
                Case: “No More Tries”
                   Quit
          End Prompt & Collect
108.      Goto ADMIN_PROMPTS
     Elseif ADMIN_PHRASE_TYPE   = “MAIN_MENU”
          RECORD_MAIN_MENU:
109.      Announce
             Speak With Interrupt
                Phrase: “Record at the tone.”
110.      External Action: Msg_Code
             Code_Rate:  “ADPCM 32”
             Max_Phr_Len_Sec:  240
             Phrase_Type:  “Tag”
             Phrase_Id:  “PHR.MAIN_MENU”
             Talkfile_Number:  0
             Initial_Timeout:  5
             Completion_Timeout:  5
             Tone_On:  “Yes”
             Hangup_Action:  “Exit”
             Actual_Phrase_Len_Field:  Phrase_Length
             Talkfile_Phrase_Field:  ADMIN_PHRASENUM
          End External Action
111.      Announce
             Speak With Interrupt
                Phrase: “The phrase just recorded will now be played.”
                Phrase: “PHR.MAIN_MENU”
112.      Prompt & Collect
             Prompt
                Speak With Interrupt
                   Phrase: “To administer another prompt...”
                   Phrase: “...enter 1.”
                   Phrase: “To re-record...”
                   Phrase: “...enter 2.”
                   Phrase: “To return to the FAX_Zapper admin menu...”
                   Phrase: “...enter 3.”
             Input
                Max Number Of Digits: 01
             Checklist
                Case: “1”
                   Speak With Interrupt
                      Phrase: “Prompt changed.”
                   Continue
                Case: “2”
                   Goto RECORD_HELLO
                Case: “*”
                   Goto MAIN_MENU
                Case: “9”
                   Goto GOODBYE
                Case: “0”
                   Goto ATTENDANT
                Case: “3”
                   Goto ADMIN_FAX_ZAPPER
                Case: “Not On List”
                   Reprompt
                Case: “Initial Timeout”
                   Reprompt
                Case: “Too Few Digits”
                   Reprompt
                Case: “No More Tries”
                   Quit
          End Prompt & Collect
113.      Goto ADMIN_PROMPTS
     Elseif ADMIN_PHRASE_TYPE   = “FAX_MENU”
          RECORD_FAX_MENU:
```

```
114.       Announce
              Speak With Interrupt
                 Phrase: “Record at the tone.”
115.       External Action: Msg_Code
              Code_Rate:  “ADPCM 32”
              Max_Phr_Len_Sec:  240
              Phrase_Type:  “Tag”
              Phrase_Id:  “PHR.FAX_MENU”
              Talkfile_Number:  0
              Initial_Timeout:  5
              Completion_Timeout:  5
              Tone_On:  “Yes”
              Hangup_Action:  “Exit”
              Actual_Phrase_Len_Field:  Phrase_Length
              Talkfile_Phrase_Field:  ADMIN_PHRASENUM
           End External Action
116.       Announce
              Speak With Interrupt
                 Phrase: “The phrase just recorded will now be played.”
                 Phrase: “PHR.FAX_MENU”
117.       Prompt & Collect
              Prompt
                 Speak With Interrupt
                    Phrase: “To administer another prompt...”
                    Phrase: “...enter 1.”
                    Phrase: “To re-record...”
                    Phrase: “...enter 2.”
                    Phrase: “To return to the FAX_Zapper admin menu...”
                    Phrase: “...enter 3.”
              Input
                 Max Number Of Digits: 01
              Checklist
                 Case: “1”
                    Speak With Interrupt
                       Phrase: “Prompt changed.”
                    Continue
                 Case: “2”
                    Goto RECORD_HELLO
                 Case: “*”
                    Goto MAIN_MENU
                 Case: “9”
                    Goto GOODBYE
                 Case: “0”
                    Goto ATTENDANT
                 Case: “3”
                    Goto ADMIN_FAX_ZAPPER
                 Case: “Not On List”
                    Reprompt
                 Case: “Initial Timeout”
                    Reprompt
                 Case: “Too Few Digits”
                    Reprompt
                 Case: “No More Tries”
                    Quit
           End Prompt & Collect
118.       Goto ADMIN_PROMPTS
     Elseif ADMIN_PHRASE_TYPE   = “GOODBYE”
           RECORD_GOODBYE:
119.       Announce
              Speak With Interrupt
                 Phrase: “Record at the tone.”
120.       External Action: Msg_Code
              Code_Rate:  “ADPCM 32”
              Max_Phr_Len_Sec:  240
              Phrase_Type:  “Tag”
              Phrase_Id:  “PHR.GOODBYE”
```

```
            Talkfile_Number:  0
            Initial_Timeout:  5
            Completion_Timeout:  5
            Tone_On:  “Yes”
            Hangup_Action:  “Exit”
            Actual_Phrase_Len_Field:  Phrase_Length
            Talkfile_Phrase_Field:  ADMIN_PHRASENUM
         End External Action
121.     Announce
            Speak With Interrupt
               Phrase: “The phrase just recorded will now be played.”
               Phrase: “PHR.GOODBYE”
122.     Prompt & Collect
            Prompt
               Speak With Interrupt
                  Phrase: “To administer another prompt...”
                  Phrase: “...enter 1.”
                  Phrase: “To re-record...”
                  Phrase: “...enter 2.”
                  Phrase: “To return to the FAX_Zapper admin menu...”
                  Phrase: “...enter 3.”
            Input
               Max Number Of Digits: 01
            Checklist
               Case: “1”
                  Speak With Interrupt
                     Phrase: “Prompt changed.”
                  Continue
               Case: “2”
                  Goto RECORD_HELLO
               Case: “*”
                  Goto MAIN_MENU
               Case: “9”
                  Goto GOODBYE
               Case: “0”
                  Goto ATTENDANT
               Case: “3”
                  Goto ADMIN_FAX_ZAPPER
               Case: “Not On List”
                  Reprompt
               Case: “Initial Timeout”
                  Reprompt
               Case: “Too Few Digits”
                  Reprompt
               Case: “No More Tries”
                  Quit
         End Prompt & Collect
123.     Goto ADMIN_PROMPTS
   Elseif ADMIN_PHRASE_TYPE   = “INFORMATION”
         RECORD_INFORMATION:
124.     Announce
            Speak With Interrupt
               Phrase: “Record at the tone.”
125.     External Action: Msg_Code
            Code_Rate:  “ADPCM 32”
            Max_Phr_Len_Sec:  240
            Phrase_Type:  “Tag”
            Phrase_Id:  “PHR.INFORMATION_ANNOUNCEMENT”
            Talkfile_Number:  0
            Initial_Timeout:  5
            Completion_Timeout:  5
            Tone_On:  “Yes”
            Hangup_Action:  “Exit”
            Actual_Phrase_Len_Field:  Phrase_Length
            Talkfile_Phrase_Field:  ADMIN_PHRASENUM
         End External Action
```

```
126.       Announce
              Speak With Interrupt
                 Phrase: “The phrase just recorded will now be played.”
                 Phrase: “PHR.INFORMATION_ANNOUNCEMENT”
127.       Prompt & Collect
              Prompt
                 Speak With Interrupt
                    Phrase: “To administer another prompt...”
                    Phrase: “...enter 1.”
                    Phrase: “To re-record...”
                    Phrase: “...enter 2.”
                    Phrase: “To return to the FAX_Zapper admin menu...”
                    Phrase: “...enter 3.”
              Input
                 Max Number Of Digits: 01
              Checklist
                 Case: “1”
                    Speak With Interrupt
                       Phrase: “Prompt changed.”
                    Continue
                 Case: “2”
                    Goto RECORD_HELLO
                 Case: “*”
                    Goto MAIN_MENU
                 Case: “9”
                    Goto GOODBYE
                 Case: “0”
                    Goto ATTENDANT
                 Case: “3”
                    Goto ADMIN_FAX_ZAPPER
                 Case: “Not On List”
                    Reprompt
                 Case: “Initial Timeout”
                    Reprompt
                 Case: “Too Few Digits”
                    Reprompt
                 Case: “No More Tries”
                    Quit
           End Prompt & Collect
128.       Goto ADMIN_PROMPTS
        Else
        End Evaluate
     Elseif $CI_VALUE   = 3
129.    Goto RECORD_PROMPTS
     Elseif $CI_VALUE   = 4
130.    Goto ADMIN_FAX_ZAPPER
     Elseif $CI_VALUE   = “*”
131.    Goto MAIN_MENU
     Elseif $CI_VALUE   = 9
132.    Goto GOODBYE
     Elseif $CI_VALUE   = 0
133.    Goto ATTENDANT
     End Evaluate


     ##################################################
     ####  Put FAXes into system for callers to get  ###
     ##################################################

     PUT_IN_FAXES:
134. Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: “Enter the number of the FAX you want to change.”
              Phrase: “To cancel this operation and return to main menu..”
              Phrase: “...enter star.”
```

```
        Input
           Max Number Of Digits: 01
        Checklist
           Case: "*"
              Goto MAIN_MENU
           Case: "Not On List"
              Continue
           Case: "Initial Timeout"
              Reprompt
           Case: "Too Few Digits"
              Reprompt
           Case: "No More Tries"
              Quit
     End Prompt & Collect
135. External Action: Concat5
        Destination:  FAX_Get_file
        String1:  FAXES
        String2:  $CI_VALUE
        String3:  ""
        String4:  ""
        String5:  ""
        Max_Destination_Length:  255
     End External Action
136. External Action: FAX_Get
        FAX_File:  FAX_Get_file
        FAX_Channel_Extension:  FAX_extension
        FAX_Channel_Key:  FAX_key
        Return Field:  FAX_Action_return
     End External Action
137. Evaluate
     If FAX_Action_return   >= 0
138.    Announce
           Speak With Interrupt
              Phrase: "Press the start button on your FAX machine now."
139.    Transfer To FAX_extension Type: Intelligent
           Maximum Number of Rings: 1
           Case: "Answer"
              Complete
              Goto QUIT
           Case: "Busy"
              Reconnect
              Goto TRY_TRANSFER_AGAIN
           Case: "No Answer"
              Reconnect
              Goto TRY_TRANSFER_AGAIN
           Case: "Error"
              Reconnect
              Goto TRY_TRANSFER_AGAIN
        End Transfer
140.    Goto QUIT
     Else
141.    Prompt & Collect
           Prompt
              Speak With Interrupt
                 Phrase: "We're sorry, their are no FAX channels available."
                 Phrase: "Call back later to leave your FAX."
                 Phrase: "To quit..."
                 Phrase: "...enter 1."
                 Phrase: "To return to the main menu..."
                 Phrase: "...enter star."
           Input
              Max Number Of Digits: 01
           Checklist
              Case: "1"
                 Goto GOODBYE
```

```
            Case: "*"
               Goto MAIN_MENU
            Case: "0"
               Goto ATTENDANT
            Case: "9"
               Goto GOODBYE
            Case: "Not On List"
               Reprompt
            Case: "Initial Timeout"
               Reprompt
            Case: "Too Few Digits"
               Reprompt
            Case: "No More Tries"
               Quit
      End Prompt & Collect
   End Evaluate



   ##################################################
   ####  Retrieve FAXes Left By Callers          ###
   ##################################################


   RETRIEVE_MBOX_FAXES:
142. External Action: Concat5
      Destination:  combine_FAX
      String1:  "/tmp/combine_FAX"
      String2:  $CHANNEL_NUMBER
      String3:  ""
      String4:  ""
      String5:  ""
      Max_Destination_Length:  255
   End External Action
143. Set Field Value
         Field: FIRST_FAX = "YES"
   #Count the number of records in the database
144. Read Table
      Table Name:  FAX_MBOX     Search From Beginning
   get_another_record:
145. Evaluate
   If $MATCH_FOUND   = 0
146.    Announce
           Speak With Interrupt
              Phrase: "There are no FAXes in the mailbox."
   Else
      get_next_record:
147.    Set Field Value
              Field: NUMBER_OF_MBOX_FAXES = $MATCH_FOUND
148.    Read Table
           Table Name:  FAX_MBOX
149.    Evaluate
   If $MATCH_FOUND   != 0
150.       Goto get_next_record
      Else
151.       Evaluate
   If NUMBER_OF_MBOX_FAXES   = 1
152.          Announce
                 Speak With Interrupt
                    Phrase: "There is 1 FAX in the mailbox."
           Else
153.          Announce
                 Speak With Interrupt
                    Phrase: "There are..."
                    Field: NUMBER_OF_MBOX_FAXES As N
                    Phrase: "...FAXes in the mailbox."
```

```
          End Evaluate
       End Evaluate
    End Evaluate
    NEXT_FAX:
154. Read Table
       Table Name:  FAX_MBOX
155. Evaluate
    If $MATCH_FOUND   = 0
156.    Announce
          Speak With Interrupt
             Phrase: “No more FAXes.”
157.    Evaluate
    If FIRST_FAX   = “NO”
158.       Goto GET_PHONE_NUMBER
       Else
159.       Goto ADMIN_FAX_ZAPPER
       End Evaluate
    End Evaluate
160. External Function
       Function Name: u_datetime
       Use Arguments: FAX_DELIVERY_DATE  FAX_DELIVERY_TIME  FAX_MBOX_DATETIME
    PLAY_HEADER:
161. Announce
       Speak With Interrupt
          Phrase: “FAX delivered at”
          Field: FAX_DELIVERY_TIME As T
          Phrase: “on”
          Field: FAX_DELIVERY_DATE As DMSPDYY
          Phrase: “Voice annotation follows.”
          Field: FAX_MBOX_PHRASE As NX
162. Prompt & Collect
       Prompt
          Speak With Interrupt
             Phrase: “To retrieve this FAX...”
             Phrase: “...enter 1.”
             Phrase: “To skip this FAX...”
             Phrase: “...enter 2.”
             Phrase: “To delete this FAX...”
             Phrase: “...enter 3.”
             Phrase: “If finished selecting FAXes...”
             Phrase: “...enter 4.”
             Phrase: “To replay received time, date and voice annot...”
             Phrase: “...enter 5.”
       Input
          Max Number Of Digits: 01
       Checklist
    End Prompt & Collect
163. Evaluate
    If $CI_VALUE   = 1
164.    Evaluate
    If FIRST_FAX   = “YES”
165.       External Action: Concat5
             Destination:  command_line
             String1:  “cp “
             String2:  FAX_MBOX_FILE
             String3:  “ “
             String4:  combine_FAX
             String5:  “”
             Max_Destination_Length:  255
          End External Action
166.       External Action: Exec_UNIX
             Command_String:  command_line
             Return Field:  FAX_Action_return
          End External Action
167.       Set Field Value
                Field: FIRST_FAX = “NO”
```

```
        Else
168.       External Action: FAX_Combine
              File_1_Name:  combine_FAX
              File_2_Name:  FAX_MBOX_FILE
              File_3_Name:  "NONE"
              Resulting_File:  combine_FAX
              Return Field:  FAX_Action_return
           End External Action
169.       Evaluate
     If FAX_Action_return   < 0
170.          Goto FAX_Action_error
           End Evaluate
        End Evaluate
171.    Announce
           Speak With Interrupt
              Phrase: "Retrieved."
172.    Goto NEXT_FAX
     Elseif $CI_VALUE   = 2
173.    Goto NEXT_FAX
     Elseif $CI_VALUE   = 3
174.    Modify Table
           Table Name: FAX_MBOX Operation: Remove
175.    Announce
           Speak With Interrupt
              Phrase: "Deleted."
176.    Goto NEXT_FAX
     Elseif $CI_VALUE   = 4
177.    Evaluate
     If FIRST_FAX   = "NO"
178.       Goto GET_PHONE_NUMBER
        Else
179.       Goto ADMIN_FAX_ZAPPER
        End Evaluate
     Elseif $CI_VALUE   = 5
180.    Goto PLAY_HEADER
     Elseif $CI_VALUE   = "*"
181.    Goto MAIN_MENU
     Elseif $CI_VALUE   = 9
182.    Goto GOODBYE
     Elseif $CI_VALUE   = 0
183.    Goto ATTENDANT
     Else
     End Evaluate


     ##################################################
     ####  Broadcast FAXes                         ###
     ##################################################


     BROADCAST:
184. Prompt & Collect
        Prompt
           Speak With Interrupt
              Phrase: "To administer your broadcast mailing list..."
              Phrase: "...enter 1."
              Phrase: "To send the current broadcast FAX to mail list..."
              Phrase: "...enter 2."
              Phrase: "To change the current broadcast FAX..."
              Phrase: "...enter 3."
              Phrase: "To return to the FAX_Zapper admin menu..."
              Phrase: "...enter 4."
        Input
           Max Number Of Digits: 01
```

```
        Checklist
           Case: “1”
              Goto ADMIN_BROADCAST_LIST
           Case: “2”
              Goto SEND_BROADCAST
           Case: “3”
              Goto CHNG_BROADCAST_FAX
           Case: “*”
              Goto MAIN_MENU
           Case: “9”
              Goto GOODBYE
           Case: “0”
              Goto ATTENDANT
           Case: “4”
              Goto ADMIN_FAX_ZAPPER
           Case: “Not On List”
              Reprompt
           Case: “Initial Timeout”
              Reprompt
           Case: “Too Few Digits”
              Reprompt
           Case: “No More Tries”
              Quit
     End Prompt & Collect

     ###################################################
     ###  Administer the Broadcast List               ##
     ###################################################

     ADMIN_BROADCAST_LIST:

     ###################################################
     ###  Speak the number of records in the database ##
     ###################################################

185. Set Field Value
           Field: NUM_BROADCAST_ADDRESSES = 0
186. Read Table
        Table Name:  BROADCAST     Search From Beginning
     get_another_address:
187. Evaluate
     If $MATCH_FOUND   = 0
188.    Announce
           Speak With Interrupt
              Phrase: “There are no FAX Broadcast addresses.”
189.    Goto GET_FIRST_ADDRESS
     Else
        get_next_address:
190.    Set Field Value
              Field: NUM_BROADCAST_ADDRESSES = NUM_BROADCAST_ADDRESSES + 1
191.    Read Table
           Table Name:  BROADCAST
192.    Evaluate
     If $MATCH_FOUND   != 0
193.       Goto get_next_address
        Else
194.       Evaluate
     If NUM_BROADCAST_ADDRESSES   = 1
195.          Announce
                 Speak With Interrupt
                    Phrase: “There is one FAX broadcast address.”
           Else
196.          Announce
                 Speak With Interrupt
                    Phrase: “There are...”
                    Field: NUM_BROADCAST_ADDRESSES As N
```

```
                  Phrase: “...addresses in your FAX broadcast list.”
            End Evaluate
         End Evaluate
      End Evaluate
197.  Goto FIRST_ADDRESS

      ##################################################
      ###  Broadcast List Empty                      ##
      ##################################################

      GET_FIRST_ADDRESS:
198.  Read Table
         Table Name:  BROADCAST     Search From Beginning
199.  Evaluate
      If $MATCH_FOUND   = 0
200.     Prompt & Collect
            Prompt
               Speak With Interrupt
                  Phrase: “Your broadcast list is empty.”
                  Phrase: “To add an address to the FAX broadcast list...”
                  Phrase: “...enter 1.”
                  Phrase: “To return to the FAX_Zapper admin menu...”
                  Phrase: “...enter 2.”
            Input
               Max Number Of Digits: 01
            Checklist
               Case: “1”
                  Continue
               Case: “2”
                  Goto ADMIN_FAX_ZAPPER
               Case: “*”
                  Goto MAIN_MENU
               Case: “9”
                  Goto GOODBYE
               Case: “0”
                  Goto ATTENDANT
               Case: “Not On List”
                  Reprompt
               Case: “Initial Timeout”
                  Reprompt
               Case: “Too Few Digits”
                  Reprompt
               Case: “No More Tries”
                  Quit
         End Prompt & Collect

         ADD_ANOTHER:
201.     Prompt & Collect
            Prompt
               Speak With Interrupt
                  Phrase: “Enter the FAX telephone number now.”
                  Phrase: “You may terminate your input with a pound key.”
            Input
               Caller Input Field: telephone_number
               Min Number Of Digits: 03
               Max Number Of Digits: 29
               TT Terminator Code Value: “#”
            Checklist
               Case: “Input Ok”
                  Speak With Interrupt
                     Phrase: “You entered...”
                     Field: telephone_number As C
                     Phrase: “If this is correct, press 1.”
                     Phrase: “If this is not correct, press 2.”
                  Confirm 1
```

```
               Case: “Initial Timeout”
                  Reprompt
               Case: “Too Few Digits”
                  Reprompt
               Case: “No More Tries”
                  Quit
         End Prompt & Collect
202.     Modify Table
            Table Name: BROADCAST Operation: Add
               Field: BROADCAST_ADDRESS = telephone_number
203.     Prompt & Collect
            Prompt
               Speak With Interrupt
                  Phrase: “To add another address to FAX broadcast list...”
                  Phrase: “...enter 1.”
                  Phrase: “To return to administering FAX broadcasting...”
                  Phrase: “...enter 2.”
            Input
               Max Number Of Digits: 01
            Checklist
               Case: “1”
                  Goto ADD_ANOTHER
               Case: “2”
                  Goto BROADCAST
               Case: “*”
                  Goto MAIN_MENU
               Case: “9”
                  Goto GOODBYE
               Case: “0”
                  Goto ATTENDANT
               Case: “Not On List”
                  Reprompt
               Case: “Initial Timeout”
                  Reprompt
               Case: “Too Few Digits”
                  Reprompt
               Case: “No More Tries”
                  Quit
         End Prompt & Collect
      Else
204.     Goto ADMIN_FAX_ZAPPER
      End Evaluate

      ##################################################
      ###  Broadcast List Not Empty                  ##
      ##################################################

      FIRST_ADDRESS:
205.  Set Field Value
            Field: BROADCAST_ADDRESS = 0
206.  Read Table
         Table Name:  BROADCAST     Search From Beginning

      NEXT_ADDRESS:
207.  Announce
         Speak With Interrupt
            Field: BROADCAST_ADDRESS As C
208.  Prompt & Collect
         Prompt
            Speak With Interrupt
               Phrase: “To add an address to the FAX broadcast list...”
               Phrase: “...enter 1.”
               Phrase: “To hear the next address...”
               Phrase: “...enter 2.”
               Phrase: “To delete this address...”
               Phrase: “...enter 3.”
```

```
            Phrase: “If finished reviewing your FAX broadcast list...”
            Phrase: “...enter 4.”
         Input
            Max Number Of Digits: 01
         Checklist
            Case: “*”
               Goto MAIN_MENU
            Case: “9”
               Goto GOODBYE
            Case: “0”
               Goto ATTENDANT
            Case: “Not On List”
               Continue
            Case: “Initial Timeout”
               Reprompt
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect
209.  Evaluate
      If $CI_VALUE   = 1

         ###################################################
         ###  Add a broadcast address                    ##
         ###################################################

         add_another_address:
210.     Prompt & Collect
            Prompt
               Speak With Interrupt
                  Phrase: “Enter the FAX telephone number now.”
                  Phrase: “You may terminate your input with a pound key.”
            Input
               Caller Input Field: telephone_number
               Min Number Of Digits: 03
               Max Number Of Digits: 29
               TT Terminator Code Value: “#”
            Checklist
               Case: “Input Ok”
                  Speak With Interrupt
                     Phrase: “You entered...”
                     Field: telephone_number As C
                     Phrase: “If this is correct, press 1.”
                     Phrase: “If this is not correct, press 2.”
                  Confirm 1
               Case: “Initial Timeout”
                  Reprompt
               Case: “Too Few Digits”
                  Reprompt
               Case: “No More Tries”
                  Quit
         End Prompt & Collect
211.     Modify Table
            Table Name: BROADCAST Operation: Add
               Field: BROADCAST_ADDRESS = telephone_number
212.     Prompt & Collect
            Prompt
               Speak With Interrupt
                  Phrase: “To add another address to FAX broadcast list...”
                  Phrase: “...enter 1.”
                  Phrase: “To continue reviewing your broadcast list...”
                  Phrase: “...enter 2.”
            Input
               Max Number Of Digits: 01
```

```
          Checklist
             Case: “1”
                Goto add_another_address
             Case: “2”
                Goto NEXT_ADDRESS
             Case: “*”
                Goto MAIN_MENU
             Case: “9”
                Goto GOODBYE
             Case: “0”
                Goto ATTENDANT
             Case: “Not On List”
                Reprompt
             Case: “Initial Timeout”
                Reprompt
             Case: “Too Few Digits”
                Reprompt
             Case: “No More Tries”
                Quit
       End Prompt & Collect
    Elseif $CI_VALUE   = 2

       ##################################################
       ###  Get Next broadcast address                ##
       ##################################################

213.   Read Table
          Table Name:  BROADCAST
214.   Evaluate
    If $MATCH_FOUND   = 0
215.      Prompt & Collect
             Prompt
                Speak With Interrupt
                   Phrase: “No more FAX broadcast addresses.”
                   Phrase: “To add an address to the FAX broadcast list...”
                   Phrase: “...enter 1.”
                   Phrase: “To finish and return to the FAX broadcast menu...”
                   Phrase: “...enter 2.”
             Input
                Max Number Of Digits: 01
             Checklist
                Case: “1”
                   Goto ADD_ANOTHER
                Case: “2”
                   Speak With Interrupt
                      Phrase: “Review complete.”
                   Goto BROADCAST
                Case: “Not On List”
                   Reprompt
                Case: “Initial Timeout”
                   Reprompt
                Case: “Too Few Digits”
                   Reprompt
                Case: “No More Tries”
                   Quit
          End Prompt & Collect
       End Evaluate
216.   Goto NEXT_ADDRESS
    Elseif $CI_VALUE   = 3

       ##################################################
       ###  Remove broadcast address                  ##
       ##################################################

217.   Modify Table
          Table Name: BROADCAST Operation: Remove
```

```
218.    Announce
           Speak With Interrupt
              Phrase: “Deleted.”
219.    Read Table
           Table Name:  BROADCAST
220.    Evaluate
     If $MATCH_FOUND   = 0
221.       Prompt & Collect
              Prompt
                 Speak With Interrupt
                    Phrase: “No more FAX broadcast addresses.”
                    Phrase: “To add an address to the FAX broadcast list...”
                    Phrase: “...enter 1.”
                    Phrase: “To finish and return to the FAX broadcast menu...”
                    Phrase: “...enter 2.”
              Input
                 Max Number Of Digits: 01
              Checklist
                 Case: “1”
                    Goto ADD_ANOTHER
                 Case: “2”
                    Speak With Interrupt
                       Phrase: “Review complete.”
                    Goto BROADCAST
                 Case: “Not On List”
                    Reprompt
                 Case: “Initial Timeout”
                    Reprompt
                 Case: “Too Few Digits”
                    Reprompt
                 Case: “No More Tries”
                    Quit
           End Prompt & Collect
        End Evaluate
222.    Goto NEXT_ADDRESS
     Elseif $CI_VALUE   = 4
223.    Goto BROADCAST
     Else
     End Evaluate

     ###################################################
     ###  Send a FAX to everyone in Broadcast List    ##
     ###################################################

     SEND_BROADCAST:
224. Announce
        Speak With Interrupt
           Phrase: “Please wait while the FAXes are q’ed.”
225. Read Table
        Table Name:  BROADCAST     Search From Beginning
226. Evaluate
     If $MATCH_FOUND   != 0
        #Attach PBX dialstring to delivery number.
227.    External Action: Concat5
           Destination:  FAX_delivery_number
           String1:  PBX_DIALSTRING
           String2:  BROADCAST_ADDRESS
           String3:  “”
           String4:  “”
           String5:  “”
           Max_Destination_Length:  255
        End External Action
228.    External Action: FAX_Send
           FAX_File_1:  BROADCAST_FAX
           FAX_File_2:  “NONE”
           FAX_Delivery_Number:  FAX_delivery_number
```

```
           Economy_Time_Delivery:  “no”
           Return Field:  FAX_Action_return
        End External Action
        SEND_NEXT_FAX:
229.    Read Table
           Table Name:  BROADCAST
230.    Evaluate
     If $MATCH_FOUND   != 0
           #Attach PBX dialstring to delivery number.
231.       External Action: Concat5
              Destination:  FAX_delivery_number
              String1:  PBX_DIALSTRING
              String2:  BROADCAST_ADDRESS
              String3:  “”
              String4:  “”
              String5:  “”
              Max_Destination_Length:  255
           End External Action
232.       External Action: FAX_Send
              FAX_File_1:  BROADCAST_FAX
              FAX_File_2:  “NONE”
              FAX_Delivery_Number:  FAX_delivery_number
              Economy_Time_Delivery:  “no”
              Return Field:  FAX_Action_return
           End External Action
233.       Goto SEND_NEXT_FAX
        Else
234.       Announce
              Speak With Interrupt
                 Phrase: “FAXes q’ed for delivery.”
                 Phrase: “No more FAX broadcast addresses.”
                 Phrase: “Returning to FAX_Zapper administration.”
        End Evaluate
     Else
235.    Announce
           Speak With Interrupt
              Phrase: “The broadcast list is empty.  No FAXes sent.”
              Phrase: “Returning to FAX_Zapper administration.”
     End Evaluate
236. Goto ADMIN_FAX_ZAPPER

     ###################################################
     ###  Enter the FAX to be broadcast               ##
     ###################################################

     CHNG_BROADCAST_FAX:
237. External Action: FAX_Get
        FAX_File:  BROADCAST_FAX
        FAX_Channel_Extension:  FAX_extension
        FAX_Channel_Key:  FAX_key
        Return Field:  FAX_Action_return
     End External Action
238. Evaluate
     If FAX_Action_return   >= 0
239.    Modify Table
           Table Name: FAX_MBOX Operation: Add
              Field: FAX_MBOX_DATETIME = $UNIX_TIME
              Field: FAX_MBOX_FILE = FAX_Get_file
              Field: FAX_MBOX_PHRASE = Phrase_Number
240.    Announce
           Speak With Interrupt
              Phrase: “Press the start button on your FAX machine now.”
241.    Transfer To FAX_extension Type: Intelligent
           Maximum Number of Rings: 1
           Case: “Answer”
              Complete
```

```
            Goto QUIT
         Case: “Busy”
            Reconnect
            Goto TRY_TRANSFER_AGAIN
         Case: “No Answer”
            Reconnect
            Goto TRY_TRANSFER_AGAIN
         Case: “Error”
            Reconnect
            Goto TRY_TRANSFER_AGAIN
      End Transfer
242.  Goto QUIT
   Else
243.  Prompt & Collect
         Prompt
            Speak With Interrupt
               Phrase: “We’re sorry, their are no FAX channels available.”
               Phrase: “Call back later to leave your FAX.”
               Phrase: “To quit...”
               Phrase: “...enter 1.”
               Phrase: “To return to the main menu...”
               Phrase: “...enter star.”
         Input
            Max Number Of Digits: 01
         Checklist
            Case: “1”
               Goto GOODBYE
            Case: “*”
               Goto MAIN_MENU
            Case: “9”
               Goto GOODBYE
            Case: “0”
               Goto ATTENDANT
            Case: “Not On List”
               Reprompt
            Case: “Initial Timeout”
               Reprompt
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect
   End Evaluate

   ##################################################
   ###  Send the caller to an Attendant             ##
   ##################################################

   ATTENDANT:
244. Evaluate
   If ATTENDANT_PHONE   = “NOT_DEFINED”
245.  Prompt & Collect
         Prompt
            Speak With Interrupt
               Phrase: “Sorry.  There is no available attendant.”
               Phrase: “Please call back later.”
         Input
            Max Number Of Digits: 01
            No. Of Tries To Get Input: 01
            Initial Timeout: 03
         Checklist
            Case: “*”
               Goto MAIN_MENU
            Case: “Not On List”
               Goto GOODBYE
            Case: “Initial Timeout”
```

```
                Goto GOODBYE
             Case: “Too Few Digits”
                Goto GOODBYE
             Case: “No More Tries”
                Goto GOODBYE
       End Prompt & Collect
     Else
246.    Prompt & Collect
          Prompt
             Speak With Interrupt
                Phrase: “Please hold.”
                Phrase: “Your call will be transferred to an attendant.”
          Input
             Max Number Of Digits: 01
             No. Of Tries To Get Input: 01
             Initial Timeout: 03
          Checklist
             Case: “*”
                Goto MAIN_MENU
             Case: “9”
                Goto QUIT
             Case: “Not On List”
                Transfer To ATTENDANT_PHONE
             Case: “Initial Timeout”
                Transfer To ATTENDANT_PHONE
             Case: “Too Few Digits”
                Transfer To ATTENDANT_PHONE
             Case: “No More Tries”
                Transfer To ATTENDANT_PHONE
       End Prompt & Collect
247.    Transfer To ATTENDANT_PHONE Type: Blind
     End Evaluate


     TRY_TRANSFER_AGAIN:
248. Announce
       Speak With Interrupt
          Phrase: “Transfer failed.  Trying again.”
          Phrase: “If the operation fails, call back later.”
249. Transfer To FAX_extension Type: Blind
250. Goto QUIT

     CONTINUE:
251. Prompt & Collect
       Prompt
          Speak With Interrupt
             Phrase: “To return to the main menu...”
             Phrase: “...enter 1.”
             Phrase: “To quit, press 9.”
       Input
          Max Number Of Digits: 01
       Checklist
          Case: “1”
             Goto MAIN_MENU
          Case: “9”
             Goto GOODBYE
          Case: “*”
             Goto MAIN_MENU
          Case: “0”
             Goto ATTENDANT
          Case: “Not On List”
             Reprompt
          Case: “Initial Timeout”
             Reprompt
          Case: “Too Few Digits”
             Reprompt
```

```
            Case: “No More Tries”
               Quit
      End Prompt & Collect

      FAX_Action_error:
252.  Prompt & Collect
         Prompt
            Speak With Interrupt
               Phrase: “We are experiencing technical problems.”
               Phrase: “To return to the main menu...”
               Phrase: “...enter 1.”
               Phrase: “To quit, press 9.”
         Input
            Max Number Of Digits: 01
         Checklist
            Case: “1”
               Goto MAIN_MENU
            Case: “9”
               Goto GOODBYE
            Case: “*”
               Goto MAIN_MENU
            Case: “0”
               Goto ATTENDANT
            Case: “Not On List”
               Reprompt
            Case: “Initial Timeout”
               Reprompt
            Case: “Too Few Digits”
               Reprompt
            Case: “No More Tries”
               Quit
      End Prompt & Collect

      Trouble:

      ##################################################
      ###  Terminate if we have problems.  Be sure to  ##
      ###  look in the logger and check return values  ##
      ###  to see what problems we had.                ##
      ##################################################

253.  Announce
         Speak With Interrupt
            Phrase: “We’re sorry.”
            Phrase: “We are experiencing technical problems.”
            Phrase: “You will not be receiving the FAX requested.”
            Phrase: “Please call back later.”

      Cleanup:

      ##################################################
      ###  Remove temporary files created by the       ##
      ###  application.                                ##
      ##################################################

254.  External Action: Exec_UNIX
         Command_String:  “rm -rf /tmp/cover* /tmp/combine*”
         Return Field:  FAX_Action_return
      End External Action


      ##################################################
      ####  Say Goodbye                              ###
      ##################################################
```

```
     GOODBYE:
255. Announce
        Speak With Interrupt
           Phrase: “PHR.GOODBYE”

     QUIT:
256. Disconnect
257. Quit
```

# Abbreviations

## A

**AC**
Alternating current

**ACD**
Automatic call distributor

**ADPCM**
Adaptive differential pulse code modulation

**ANI**
Automatic number identification

**ARU**
Alarm relay unit

**ASAI**
Adjunct/Switch Application Interface

**ASCII**
American Standard Code for Information Interchange

**ASI**
Analog switch integration

## B

**BB**
Bulletin board

**bps**
Bits per second

**BSC**
Binary synchronous communication

## C

**CCA**
Call classification analysis

**CDH**
Call data handler

**CICS**
Customer Information Control System

**CMP**
Companion circuit card

**CMS**
Call Management System

**CO**
Central office

**CPE**
Customer provided equipment or customer premise equipment

**CPU**
Central processing unit

**CSU**
Channel service unit

## D

**dB**
Decibels

**DB**
Database

**DBMS**
Database management system

**DC**
Direct current

**DCE**
Data communications equipment

**DCP**
Digital communications protocol

**DIO**
Disk input and output process

**DIP**
Data interface process

**DMA**
Direct memory access

**DNIS**
Dialed number identification service

**DSP**
Digital signal processor

**DTE**
Data terminal equipment

**DTMF**
Dual tone multi-frequency

## E

**EBCDIC**
Extended Binary Coded Decimal Interexchange Code

**EIA**
Electronic Industries Association

**EISA**
Extended Industry Standard Architecture

**EMI**
Electromagnetic interference

**ESD**
Electrostatic discharge

**ESDI**
Extended Serial Data Interface

**ESS**
Electronic Switching System

## F

**FACE**
Framed Access Command Environment Interface

**FCC**
Federal Communications Commission

**FDD**
Floppy disk drive

**FIFO**
First-in-first-out processing order

**foos**
Facility out-of-service state

## G

**GSE**
Graphical Speech Editor

**GUI**
Graphical user interface

## H

**HDD**
Hard disk drive

**hwoos**
Hardware out-of-service state

**Hz**
Hertz

## I

**IBM**
International Business Machines

**ICK**
Integrity checking process message class

**ID**
Identification

**IE**
Information element

**inserv**
In-service state

**IPC**
Interprocess communication

**IPC**
Intelligent Ports Card (IPC-900)

**IPCI**
Integrated personal computer interface

**IRQ**
Interrupt request

**ISA**
Industry Standard Architecture

**ISDN**
Integrated Services Digital Network

**ISV**
Independent Software Vendor

**ITAC**
International Technical Assistance Center

**IVP4**
Integrated Voice Processing card with 4 analog channels

**IVP6**
Integrated Voice Processing card with 6 analog channels

**IVPSS**
Integrated Voice Processing System Software

## K

**Kbps**
Kilobites per second

**Kbyte**
Kilobyte

## L

**LAN**
Local area network

**LDB**
Local database

**LED**
Light-emitting diode

**LN**
Load number

**LU**
Logical unit

## M

**manoos**
Manually out-of-service state

**MAP/100**
Multi-Application Platform 100

**MAP/100C**
Multi-Application Platform 100C

**MAP/40**
Multi-Application Platform 40

**Mbps**
Megabits per second

**Mbyte**
Megabyte

**ms**
Millisecond

**msec**
Millisecond

**MHz**
Megahertz

**MTC**
Maintenance process

## N

**NCP**
Network Control Program

**NEBS**
Network Equipment Building Standards

**NEMA**
National Electrical Manufacturers Association

**netoos**
Network out-of-service state

**nonex**
Nonexistent state

**NRZ**
Non Return to Zero

**NRZI**
Non Return to Zero Inverted

## O

**OEM**
Original equipment manufacturer

## P

**PBX**
Private branch exchange

**PC**
Personal computer

**PCB**
Printed circuit board

**PCM**
Pulse code modulation

**PEC**
Price element code

**PRI**
Primary rate interface

**PSTN**
Public switch telephone network

**PS&BM**
Power supply and battery module

## R

**RAM**
Random access memory

**RECOG**
Speech recognition feature message class

**RDBMS**
ORACLE relational database management system

**REN**
Ringer equivalence number

**RFS**
Remote file sharing

**RM**
Resource manager

**RMB**
Remote maintenance board

**RTS**
Request to send

## S

**SBC**
Sub-band coding

**SCCS**
Switching Control Center System

**SCSI**
Small Computer System Interface

**SDLC**
Synchronous Data Link Control

**SIMM**
Single inline memory module

**SNA**
Systems Network Architecture

**SP**
Signal processor circuit card

**SPIP**
Signal processor interface process

**SPPLIB**
Speech processing library

**SQL**
Structured Query Language

**sysgen**
System generation

## T

**TCC**
Technology Control Center

**TCP/IP**
Transmission control protocol/internet protocol

**TDM**
Time division multiplexing

**TE**
Terminal emulator

**TLP**
Transmission level plan

**T/R**
Tip/Ring circuit card

**TRIP**
Tip/Ring interface process

**TSC**
AT&T Technical Services Center

**TSO**
Technical Service Organization

**TSO**
Time Share Operation

**TSM**
Transaction state machine process

**TTS**
Text-to-Speech

**TWIP**
T1 interface process

## U

**UK**
United Kingdom

**USOC**
Universal service ordering code

**UVL**
Unified Voice Library

## V

**VDC**
Video display controller

**VIS**
Intuity CONVERSANT Voice Information System

**VPC**
Voice processing comarketer

**VRU**
Voice response unit

**VROP**
Voice response output process

# Glossary

## Numerics

**3270 interface**
A link between one or more CONVERSANT Voice Information System (VIS) machines and a host mainframe. In CONVERSANT VIS documentation, the 3270 interface means the link between one or more VIS machines and an IBM host mainframe.

**4ESS**
A large AT&T central office switch used to route calls through AT&T's telephone network.

## A

**ACD**
See "automatic call distributor."

**ADPCM**
See "adaptive differential pulse code modulation."

**adaptive differential pulse code modulation**
A means of encoding analog voice signals into digital signals by adaptively predicting future encoded voice signals. This adaptive modulation method reduces the number of bits required to encode voice. See also "pulse code modulation."

**adjunct products**
Products (for example, Adjunct/Switch Application Interface) that the VIS administers via cut-through access to the inherent management capabilities of the product itself; this is in opposition to CONVERSANT VIS's ability to administer the switch directly.

**Adjunct/Switch Application Interface**
An optional feature package that provides an Integrated Services Digital Network-based interface between AT&T PBX's and adjunct processors.

**affiliate**
A business organization that AT&T controls or which with AT&T is in partnership.

**alarm relay unit**
A unit used in central office telecommunication arrangements that transmits warning indicators from telephone communications equipment (like the CONVERSANT VIS) to audio.

**alerter**
A system process that responds to patterns of events logged by the "logdaemon" process.

**analog**
An analog signal, such as voice or music, that varies in a continuous manner. An analog signal may be contrasted with a digital signal, which represents only discrete states.

**application**
Made of several components that provide an automated version of the communication between a caller and an attendant. The CONVERSANT VIS provides several methods for creating applications, including Script Builder and transaction state machine (TSM) script language.

**application administration**
The component of the CONVERSANT VIS that provides access to the applications currently available on your system and helps you to manage and administer them.

**application installation**
A two-step process in which the CONVERSANT VIS invokes the TSM script assembler for the specific application name and files are moved to the appropriate directories.

**application verification**
A process in which the CONVERSANT VIS verifies that all the components needed by an application are complete.

**ASCII**
An acronym for American Standard Code for Information Interchange, a standard for data representation. ASCII code represents alphanumeric characters as binary numbers. The code includes 128 upper- and lowercase letters, numerals, and special characters. Each alphanumeric and special character has an ASCII code (binary) equivalent that is 1 byte long.

**asynchronous communication**
A method of data transmission in which bits or characters are sent at irregular intervals and are spaced by start and stop bits and not by time. See also “synchronous communication.”

**asynchronous data unit**
An electronic communications device that allows computer systems to communicate over asynchronous lines more than 50 feet in length.

**AUDIX Voice Power**
A complete voice-mail messaging system accessed and operated by touch-tone telephones and integrated with a switch or “Private Branch Exchange.”

**automatic call distributor**
A telephone system that recognizes and answers incoming calls and completes these calls based on a set of instructions contained in a database. The Automatic Call Distributor can send the call to an operator or group of operators as soon as the operator has completed a previous call or after the system has played a message to the caller.

**automatic number identification**
A method of identifying the calling party by automatically receiving a string of digits that identifies the calling station of a particular customer.

# B

**back up**
The preservation of the information in a file in a different location, so that the data is not lost in the event of hardware or system failure.

**backing up an application**
A utility that makes an archive copy of a completed application or makes an interim copy of an application in progress. The backup copy can be restored to the VIS if the online version is damaged, or if you make revisions and wish to go back to the previous version.

**barge-in**
A capability provided by WholeWord speech recognition that allow callers to speak their responses to the VIS prompt and have those responses recognized before the prompt has finished playing.

**batch file**
A file containing one or more lines, each of which is a command executable by the UNIX shell.

**binary synchronous communications**
A character-oriented synchronous link protocol.

**blind transfer protocol**
A protocol in which a call is completed as soon as the extension is dialed, without having to wait to see if the telephone is busy or if the caller answered.

**bridging**
The process of connecting one telephone network connection to another telephone network connection over the CONVERSANT VIS TDM bus. Bridging decreases the processing load on the system since an active bridge does not require speech processing, database access, host activity, etc., for the transaction.

**BSC**
See “binary synchronous communication.”

**bundle**
In the context of the Enhanced File Transfer package, this term is used to denote a single file, a group of files (package), or a combination of both.

**byte**
A unit of storage in the computer. On many systems, a byte is 8 bits (binary digits), the equivalent of one character of text.

# C

**call classification analysis**
An optional feature package that allows application developers to classify the disposition of originated and transferred calls.

**call data event**
A parameter that specifies a list of variables that are appended to a call data record at the end of each call.

**call data handler process**
A software process that accumulates generic call statistics and application events.

**called party number**
The number dialed by someone making a telephone call. It can be used by telephone switching equipment to selectively route an incoming call to a particular department or agent.

**caller**
The party that calls for a service, gets connected to the CONVERSANT VIS, and interacts with the system. As the CONVERSANT VIS is also capable of making outbound calls for service, the caller can also be the person who responds to those outbound calls.

**call progress tones**
Standard telephony sounds that indicate the status of the call. These sounds include busy, fast busy, ringback, reorder, etc.

**card cage**
An area within a CONVERSANT VIS platform that contains and secures all of the standard and optional circuit cards used in the system.

**cartridge tape drive**
A high-capacity data storage/retrieval device that can be used to transfer large amounts of information onto high-density magnetic cartridge tape based on a predetermined format. This tape can be removed from the system and stored as a backup, or used on another system.

**caution**
An admonishment used when there is a possibility of a service interruption or a loss of data.

**CCA**
See “call classification analysis.”

**CDH**
See “call data handler process.”

**central office**
An office or location in which large telecommunication machines such as telephone switches and network access facilities are maintained. These locations follow strict installation and operation requirements.

**central processing unit**
A component of the CONVERSANT VIS that is based on either the Multi-Application Platform 100 (MAP/100), MAP/40, or MAP/100C.

**channel**
See “port.”

**CICS**
See "Customer Information Control System."

**circuit card upgrade**
A new circuit card that replaces an existing one in the platform. Usually the replacement is an updated version of the other card, and the replacement is designed to deal with technology made obsolete by industry trends or a new VIS release.

**cluster controller**
A bisynchronous interface that provides a means of handling remote communication processing.

**command**
An instruction or request given by the user to the VIS software to perform a particular function. An entire command consists of the command name and options.

**CompuLert/SCCS interface**
An optional feature that enables remote or console monitoring of error messages generated from the CONVERSANT VIS. CompuLert is a centralized maintenance system for monitoring minicomputers, computer mainframes, etc. The Switching Control Center System (SCCS) is similar to the CompuLert system, but is used to support 4ESS local switching systems.

**configuration**
The arrangement of the software and hardware of a computer system or network. The CONVERSANT VIS configuration includes either a standard or custom processor, peripheral equipment (for example, printers, modems), and software applications. Configuration also refers to the way the switch network is set up; that is, the types of products that are in the network and how those products communicate.

**configuration management**
The component of the VIS that allows you to manage the current configuration of voice channels, host sessions, and database connections, assign scripts to run on specific voice channels or host sessions assign functionality to SP and T1 cards, and perform various maintenance functions.

**Converse Data Return (conv_data)**
A Script Builder action that supports the DEFINITY call vectoring (routing) feature by enabling the switch to retain control of vector processing in the VIS environment. It supports the DEFINITY "converse" vector command to establish a two-way routing mechanism between the switch and the VIS to facilitate data passing and return.

**controller circuit card**
A circuit card used on a computer system that controls its basic functionality and makes the system operational. These cards are used to control magnetic peripherals, video monitors, and basic system communications.

**copying an application**
A utility in which information from a source application is directed into the destination application.

**coresidency**
The ability of two products or services to operate and interact with each other on a single hardware platform. An example of this is the use of AUDIX Voice Power along with CONVERSANT on the same VIS platform.

**CPU**
See "central processing unit."

**crash**
An interactive utility for examining the operating system core and for determining if system parameters are being exceeded.

**custom speech**
Unique words or phrases to be used in CONVERSANT VIS voice prompts that AT&T records for a customer on a custom basis.

**custom vocabulary**
A specialized package of unique words or phrased created on a per-customer basis and used by WholeWord or FlexWord speech recognition.

**Customer Information Control System**
Part of the operating system that manages resources for running applications (for example, IND$FILE). Note that TSO and CMS provide analogous functionality in other host environments.

# D

**danger**
An admonishment used when there is a possibility of personal injury.

**data interface process**
A software process that communicates with Script Builder applications.

**database**
A structured set of files, records, or tables.

**database field**
A field used to extract values from a local database and form the structure upon which a database is built.

**database table**
A structure, made up of columns and rows, that holds information in a database. Database tables provide a means of storing information that changes too often to "hard-code," or permanently store, in the transaction outline.

**debug**
The process of locating and correcting errors in computer programs. This process is also referred to as "troubleshooting."

**default**
The way a computer performs a task in the absence of other instructions.

**default owner**
The owner of a channel when no process takes ownership of that channel. The default owner holds all idle, in-service channels. In terms of the IRAPI, this is typically the Application Dispatch process.

**diagnose**
The process of performing diagnostics on Tip/Ring, T1, or SP circuit cards or a bus.

**dialed number identification service**
A service that allows incoming calls to contain information about the telephone number for which it is destined.

**directory**
A type of file used to group and organize other files or directories.

**DNIS**
See "dialed number identification service."

**DIP**
See “data interface process.”

**display errdata**
A command that displays system errors sent to the logger.

**DSO**
Digital Service Level (64,000 bps).

**DTMF**
See “dual tone multi-frequency.”

**dual 3270 links**
A feature that provides an additional physical unit (PU) to allow a cost-effective means of connecting to two host computers. The customer can connect a VIS to two separate FEPs or to a single FEP shared by one or more host computers. Each link supports a maximum of 32 LUs.

**dual tone multi-frequency**
A touch tone.

**dump space**
An area of the disk that is fixed in size and should equal the amount of RAM on the system. The operating system “dumps” an image of core memory upon system crashes. The dump can be fetched after rebooting for analysis of what may have caused the crash.

## E

**Earth recall**
A method of call transfer used by some PBXs outside of the U.S. Special considerations must be taken when identifying and tuning some communication protocol parameters before attempting to interface another machine to a system that uses this method of call transfer.

**editor system**
A system that allows speech phrases to be displayed and edited by a user. See “Graphical Speech Editor.”

**Enhanced File Transfer**
A feature that allows the transferring of files automatically between the CONVERSANT VIS and a synchronous host processor on a designated logical unit.

**Enhanced Serial Data Interface**
A software- and hardware-controlled method used to store data on magnetic peripherals.

**error message**
A message on the screen indicating that something is wrong and possibly suggesting how to correct it.

**Error Tracker process**
See “etStub.”

**Ethernet**
A name for a local area network that uses 10BASE5 or 10BASE2 coaxial cable and InterLAN signaling techniques.

**etStub**
A system process that processes pre-Version 3.1 error message logging requests. These requests are transformed and passed on to the “logdaemon” process.

**event**
The notification given to an application when some condition occurs.

**external actions**
Specific tasks and interfaces controlled by CONVERSANT VIS software that allow a Script Builder application script to invoke processes and interact with other products or services. For example, a CONVERSANT VIS application script can invoke AUDIX Voice Power functionality through the used of an external action within an application script.

## F

**FACE**
See “Framed Access Command Environment.”

**feature**
A function or capability of a product or an application within the CONVERSANT VIS.

**feature package**
An optionally purchased package that may contain both hardware and software resources, which provides additional functionality to a standard system.

**feature_tst script package**
A standard CONVERSANT VIS software program that allows a VIS user to perform self-tests of critical hardware and software functionality.

**field**
A “slot” in a VIS window that holds one column of information in a row.

**file**
A collection of data treated as a basic unit of storage.

**file transfer**
An option that allows you to transfer files interactively or directly to and from UNIX using the File Transfer System.

**filename**
Alphabetic characters used to identify a particular file.

**FlexWord speech recognition**
A type of speech recognition based on subword technology that recognizes phonemes or parts of words of American English vocabularies. See “subword technology.”

**Form Filler Plus**
An optional feature package that provides the capability for application scripts to record caller’s responses to prompts for later transcription and review.

**Framed Access Command Environment**
An interface that enables you to execute a variety of administrative procedures including disk operations, user login setup, and peripherals setup.

**function key**
A key, labeled F1 through F8, on your keyboard to which the CONVERSANT VIS software gives special properties for manipulating the user interface.

# G

**Graphical Speech Editor**
A window-driven, X Windows/Motif based, graphical user interface (GUI) that can be accessed to perform different functions associated with the creation and editing of speech files to be used by VIS applications.

# H

**hard disk drive**
A high-capacity data storage/retrieval device that is located inside a computer platform. A hard disk drive stores data on nonremovable high-density magnetic media based on a predetermined format for retrieval by the system at a later date.

**hardware**
The physical components of a computer system. The central processing unit, disks, tape and floppy drives, etc., are all hardware.

**hardware upgrade**
Replacement of one or more fundamental platform hardware components (for example, the CPU or hard disk drive), but the existing platform and other existing optional circuit cards remain.

**High Level Language Applications Programming Interface (HLLAPI)**
An application programming interface that allows user to write custom applications that can communicate with the host via an API.

**HLLAPI**
See “High Level Language Applications Programming Interface.”

**host computer**
A computer linked to a network providing a range of services, such as database access and computation. The host computer operates in a time-sharing manner with other computers linked to it via the network.

# I

**iCk**
The system integrity checking process.

**idle channel**
A channel that either has no owner or is owned by its default owner and is onhook.

**IND$FILE**
The standard SNA file transfer utility that runs as an application under CICS, TSO, and CMS. IND$FILE is independent of link-level protocols such as BISYNC and SDLC.

**indexed table**
A table that, unlike a nonindexed table, can be searched via a field name that has been indexed.

**initialize**
To start up the system for the first time.

**Integrated Services Digital Network**
A network that provides end-to-end digital connectivity to support a wide range of voice and data services.

**Integrated Voice Processing circuit card**
The IVP4 or IVP6 circuit card.

**intelligent transfer protocol**
A transfer protocol that monitors the line after dialing is complete to determine whether a busy, reorder (fast busy), or other failure has been encountered. It also recognizes when the extension is answered or if the extension is not answered after a specified number of rings.

**interface**
The access point of a system. With respect to the CONVERSANT VIS, the interface is designed to provide you with easy access to the software's capabilities.

**interrupt**
The termination of voice and/or telephony functions when some condition occurs.

**Intuity Response Application Programming Interface**
A library interface the provides a standard development interface for voice-telephony applications.

**ipcs**
A command that reports interprocess communication facilities status.

**IRAPI**
See "Intuity Response Application Programming Interface."

**ISDN**
See "Integrated Services Digital Network."

# K

**keyboard mapping**
In emulation mode, this feature enables the keyboard to send 3270 keyboard codes to the host according to a configuration table set up during installation.

**keyword spotting**
A capability provided by WholeWord Speech Recognition that allows the VIS to recognize a single word in the middle of an entire phrase spoken by a caller in response to a prompt.

# L

**LAN**
See "local area network."

**library states**
The state information about channel activities maintained by the IRAPI.

**line side T1**
A digital method of interfacing a CONVERSANT VIS to a PBX or switch using T1-related hardware and software.

**listfile**
An ASCII catalog that lists the contents of one or more talkfiles. Each application script is typically associated with a separate listfile. The listfile maps speech phrase strings used by application scripts into speech phrase numbers.

**local area network**
A data communications network in a limited geographical area. The local area network provides communications between computers and peripherals.

**local database**
A database residing on the CONVERSANT VIS.

**logical unit**
A type of SNA Network Addressable Unit.

**logdaemon**
System information and error logging process.

**logger**
See "logdaemon."

**logging on/off**
Entering or exiting the CONVERSANT VIS software.

**LU**
See "logical unit."

# M

**magnetic peripherals**
Data storage devices that use magnetic media to store information. Such devices include hard disk drives, floppy disk drives, and cartridge tape drives.

**main screen**
The CONVERSANT VIS VERSION 4.0 screen from which you are able to enter System Administration or Voice System Administration.

**maintenance process**
A software process that runs temporary diagnostics.

**Manual Configurator Program**
A software program that resolves or blocks the allocation of CPU and memory resources for controlling and optional circuit cards.

**masked event**
An event that an application can ignore (that is, the application can ask not to be informed of the event).

**master**
A board that provides clock information to the TDM bus.

**megabyte**
A unit of memory equal to 1,048,576 bytes (1024 x 1024). It is often rounded to one million.

**Microsoft**
A company that manufactures software products, primarily for IBM-compatible computers.

**mirroring**
A method of data backup that allows all of the data transactions to the primary hard disk drive to be copied and maintained on a second identical drive in near real time. If the primary disk drive crashes or becomes disabled, all of the data stored on it (up to 1.2 billion bytes of information) is accessible on the second mirrored disk drive.

**MS-DOS**
A personal computer disk operating system developed by the Microsoft Corporation.

**MTC**
See “maintenance process.”

**multi-threaded application**
A single process/application that controls several channels. Each thread of the application is managed explicitly. Typically this means state information for each thread is maintained and the state of the application on each channel is tracked.

## N

**NetView**
An optional feature package that transmits high-priority (major or critical) messages to the host as Operator-Generated Alerts (OGAs) over the 3270 host link. The NetView Alarm feature package does not require a dedicated LU.

**new error logging environment**
A more flexible and informative environment for logging errors and status messages (introduced in CONVERSANT VIS Version 3.1). Customer applications created earlier than V3.1 that log messages require conversion to this new environment.

**new operating system**
The UnixWare operating system being introduced in Intuity CONVERSANT VIS V5.0.

**nonindexed table**
A table that may be searched only in a sequential manner and that cannot be searched via a field name.

**nonmasked event**
An event that must be sent to the application. Generally, an event is nonmaskable if the applicaiton would likely encounted state transition errors by trying to ignore the event.

**null value**
An entry containing no value. A field containing a null value is normally displayed as blank and is different from a field containing a value of zero.

# O

**obsolete hardware**
Hardware that is no longer supported on Intuity CONVERSANT VIS V5.0.

**on-line help**
Messages or information that appear on the user's screen when a "function key" (F1 through F8) is pressed.

**Operator Generated Alerts**
System monitoring messages transmitted from the CONVERSANT VIS or other computer system to an IBM host computer that are classified as critical or major.

**option**
An argument used in a command line to modify program output by modifying the execution of a command. When you do not specify any options, the command will execute according to its default options.

**ORACLE**
A company that produces Relational Database Management software. It is also used as a generic term that identifies a database residing on a local or remote system that is created and maintained using an ORACLE RDBMS product.

# P

**PBX**
See "private branch exchange."

**PCM**
See "pulse code modulation."

**peripheral (device)**
Equipment such as printers or terminals that is in addition to the basic processor.

**permanent process**
A process that starts and initializes itself before it is needed by a caller.

**phoneme**
A single basic sound of particular spoken language. The English language contains 40 phonemes that represent all basic sounds used with the language. As an example, the word “one” can be represented with three phonemes, “w” - “uh” - “n.” Phonemes vary between languages because of guttural and nasal inflections and syllable constructs.

**phrase filtering**
The rejection of unrecognized speech. The WholeWord and FlexWord speech recognition packages can be programmed to reprompt the caller if the spoken response was not recognized by the VIS.

**phrase tag**
A string of up to 50 characters that identifies the contents of a speech phrase used by an application script.

**platform migration**
See “platform upgrade.”

**platform upgrade**
The process of replacing the existing platform with a new platform.

**poll**
A message sent from a central controller to an individual station on a multipoint network inviting that station to send if it has any traffic to send.

**polling**
A network arrangement whereby a central computer asks each remote location whether they wish to send information. This arrangement enables each user or remote data terminal to transmit and receive information on shared facilities.

**port**
A connection or link between two devices that allows information to travel to a desired location. See “telephone network connection.”

**Primary Rate Interface**
An optional feature package that provides a digital interface capable both of receiving and originating telephone calls directly from/to an AT&T 4ESS switch.

**private branch exchange**
A private switching system, either manual or automatic, usually serving an organization, such as a business or government agency, and usually located on the customer’s premises.

**processor**
In CONVERSANT VIS documentation, the computer on which UNIX and CONVERSANT VIS software runs. In general, the part of the computer system that processes the data. Also known as the “central processing unit.”

**ps**
A command that shows active processes. This command displays the process table and can be used to determine which processes are consuming large amounts of system resources, such as CPU time.

**pseudo driver**
A driver that does not control any hardware.

**pulse code modulation**
A digital modulation method of encoding voice signals into digital signals. See also “adaptive differential pulse code modulation.”

# R

**raw mode**
Conveys data from a terminal to a user without processing the data.

**recovery**
The process of using copies of the VIS software to reconstruct files that have been lost or damaged. See also “restore.”

**remote database**
The component of the VIS that provides access to information not currently on the VIS.

**remote maintenance board**
A CONVERSANT VIS board that is equipped standard on all new MAP/100 and MAP/40 platform purchases. This card, available with a built-in modem, allows remote personnel (for example, field support) to access all CONVERSANT VIS machines with a standard simplified process.

**reports administration**
The component of the VIS that provides access to system reports, including VIS call classification reports, call data detail reports, call data summary reports, message log reports, and traffic reports. In addition, if AUDIX Voice Power R2.1.1 is installed on your system, the reports administration component gives you access to AUDIX Voice Power reports.

**restore**
The process of recovering lost or damaged files by retrieving them from available backup tapes or from another disk device. See also “recovery.”

**restore application**
A utility that replaces a damaged application or restores an older version of an application.

**reuse**
The concept of reusing an existing system component after a software upgrade or platform migration.

**roll back**
To cancel changes to a database since the point at which changes were last committed.

**rollback segment**
A portion of the database that records actions that should be undone under certain circumstances. Rollback segments are used to provide transaction rollback, read consistency, and recovery.

# S

**sar**
A command that is associated with the system activity report package.

**screen pop**
A method of delivering a screen of information to a telephone operator at the same time a telephone call is delivered. This is accomplished by a complex chain of tasks that include identifying the calling party number, using that information to access a local or remote ORACLE database, and pulling a "form" full of information from the database using an ORACLE database utility package.

**script**
The set of instructions for the CONVERSANT VIS to follow during a transaction.

**Script Builder**
An optional software package that provides a menu-oriented interface designed to assist in the development of custom voice response applications on the VIS.

**SCSI**
See "Small Computer System Interface."

**shared database table**
A database table that is used in more than one application.

**shared speech**
Speech that is a part of more than one application.

**shared speech pools**
A parameter that allows the user of a voice application to share speech components with other applications.

**Single Inline Memory Modules**
A method of containing random access memory (RAM) chips on narrow circuit card strips that attach directly to sockets on the CPU circuit card. Multiple SIMMs are sometimes installed on a single CPU circuit card.

**single-threaded application**
An application that runs on a single voice channel.

**slave**
A circuit card that depends on the TDM bus for clock information.

**Small Computer System Interface**
A disk drive control technology in which a single SCSI adapter card plugged into a PC slot is capable of controlling as many as seven different hard disks, optical disks, tape drives, etc.

**software**
The set or sets of programs that instruct the computer hardware to perform a task or series of tasks — for example, UNIX software and the CONVERSANT VIS Version 4.0 software.

**software upgrade**
The installation of a new version of software. The existing platform and circuit cards are kept.

**source system**
The system from which you are upgrading (that is, your system as it exists *before* you upgrade).

**speech energy**
The amount of energy in an audio signal. Literally translated, it is the output level of the sound in every phonetic utterance.

**speech envelope**
The linear representation of voltage on a line. It reflects the sound wave amplitude at different intervals of time. This envelope can be plotted on a graph to represent the oscillation of an audio signal between the positive and negative extremes.

**speech file**
A file containing an encoded speech phrase.

**speech filesystem**
A collection of several talkfiles. The filesystem is organized into 16-Kbyte blocks for efficient management and retrieval of talkfiles. The CONVERSANT VIS speech filesystem is not consistent with standard UNIX filesystems, and can not be referenced with standard UNIX commands such as **ls**, **cat**, etc.

**speech modeling**
Creating WholeWord speech recognition algorithms by collecting thousands of different speech samples of a single word and comparing them all to obtain a statistical average of the word. This average is then used by a WholeWord speech recognition program to recognize a single spoken word.

**speech phrase**
A continuous speech segment encoded into a digital string.

**speech space**
An area that contains all digitized speech used for playback in the applications loaded on the system.

**standard speech**
The speech package containing simple words and phrases produced by AT&T for use with an CONVERSANT VIS. This package includes digits, numbers, days of the week, and months, each spoken with initial, medial, and falling inflection. The speech is in digitized files stored on the hard disk to be used in the voice prompts played by the VIS.

**standard vocabulary**
A standard package of simple word speech models provided by AT&T and used for WholeWord speech recognition purposes. These phrases include the digits “zero” through “nine,” “yes,” “no,” and “oh.”

**string**
A contiguous sequence of characters treated as a unit. Strings are normally bounded by white spaces, tabs, or a character designated as a separator. A string value is a specified group of characters symbolized by a variable.

**Structured Query Language**
A standard data programming language used with data storage and data query applications.

**subword technology**
A method of speech recognition that recognizes phonemes or parts of words of American English vocabularies. See “whole-word technology.”

**switch**
A software and hardware device that controls and directs voice and data traffic. A customer-based switch is known as a “private branch exchange.”

**switch hook**
The device at the top of most telephones that is depressed when the handset is resting in the cradle (on hook). The device is raised when the handset is picked up (the telephone is off hook).

**switch hook flash**
A signaling technique in which the signal is originated by momentarily depressing the "switch hook."

**switch interface administration**
The component of the VIS that enables you to define the interaction between the VIS and switches by allowing you to establish and modify switch interface parameters and protocol options for both analog and digital interfaces.

**switch network**
Two or more interconnected switching systems.

**synchronous communication**
A method of data transmission in which bits or characters are sent at regular time intervals, rather than being spaced by start and stop bits. See also "asynchronous communication."

**System 75**
An advanced digital switch supporting up to 800 lines that provides voice and data communications for its users.

**System 85**
An advanced digital switch supporting up to 3000 lines that provides voice and data communications for its users.

**system administrator**
The person assigned the responsibility of monitoring all VIS software processing, performing daily system operations and preventive maintenance, and troubleshooting errors as required.

**system architecture**
The manner in which the CONVERSANT VIS software is structured.

**system message**
An event or alarm generated by either a VIS or end-user process.

**system monitor**
A component of the VIS in which tests are performed to verify that each incoming telephone line and its associated tip/ring or T1 card is functional. Through the "System Monitor" component, you are able to see displays of the Voice Channel and Host Session Monitors.

# T

**T1**
A digital transmission link with a capacity of 1.544 Mbps.

**table**
A collection of records that are logically grouped together.

**talkfile**
An ASCII file that contains the speech phrase tags and phrase tag numbers for all the phrases of a specific application. The speech phrases are organized and stored in groups. Each talkfile can contain up to 65,535 phrases and the speech filesystem can contain multiple talkfiles.

**target system**
The system to which you are upgrading (that is, your system as you expect it to exist *after* you upgrade).

**TDM**
See "time-division multiplex."

**telephone network connection**
The point at which a telephone network connection terminates on a CONVERSANT VIS. Supported telephone connections are Tip/Ring, T1, and E1.

**Terminal Emulator**
Software that allows the VIS to temporarily transform itself into a "look alike" of an IBM 3270 terminal. In addition to providing full 3270 functionality, the Terminal Emulator enables you to transfer files to and from UNIX.

**Text-to-Speech**
An optional feature that allows an application to play speech directly from ASCII text by converting that text to synthesized speech. The text can be used for prompts or for text retrieved from a database or host, and can be spoken in an application with prerecorded speech. Text-to-Speech application development is supported through Script Builder.

**ThickNet**
A 10-millimeter (10BASE5) coaxial cable used to provide InterLAN communications.

**ThinNet**
A 5-millimeter (10BASE2) coaxial cable used to provide InterLAN communications.

**time-division multiplex**
A method of serving a number of simultaneous channels over a common transmission path by assigning the transmission path sequentially to the channels, with each assignment being for a discrete time interval.

**Tip/Ring**
A term used to denote analog telecommunications using four-wire media.

**Token/Ring**
A ring type of local area network that allows any station in the network to communicate with any other station.

**trace**
A command that can be used to monitor the execution of a script.

**traffic**
The flow of information or messages through a communications network for voice, data, or audio services.

**transaction**
Comprised of the exchanges between the caller and the voice system. A transaction can involve one or more telephone network connections and voice responses from the CONVERSANT VIS. It can also involve one or more of the VIS optional features, such as speech recognition, 3270 host interface, FAX response, etc.

**transaction state machine process**
A multi-channel IRAPI application that runs applications driven by script information.

**transient process**
A process that is created dynamically only when needed.

**troubleshoot**
The process of locating and correcting errors in computer programs. This process is also referred to as debugging.

**TSM**
See “transaction state machine process.”

**TTS**
See “Text-to-Speech.”

# U

**UNIX Operating System**
A multiuser, multitasking computer operating system developed by the Bell Telephone Laboratories division of AT&T.

**UNIX shell**
The command language that provides a user interface to the UNIX operating system.

**upgrade image tape**
A tape, optionally provided to you by the Technical Service Organization, containing the new operating system and Intuity CONVERSANT VIS V5.0 base software in a standard configuration which is compatible with your target system.

**upgrade scenario**
The particular combination of current hardware, software, application and target hardware, software, applications, etc.

# V

**vi editor**
A screen editor used by the CONVERSANT VIS to create and change electronic files.

**virtual channel**
A channel that is not associated with an interface to the telephone network (Tip/Ring, T1, or PRI). Virtual channels are intended to run “data only” applications which do not interact with callers but may interact with DIPs. Voice or network functions (for example, coding or playing speech, call answer, origination, or transfer) will not work on a virtual channel. Virtual channel applications may be initiated only by a “virtual seizure” request to TSM from a DIP.

**VIS**
See “Voice Information System.”

**vocabulary**
A collection of words that a VIS is able to recognize using either WholeWord or FlexWord speech recognition.

**vocabulary activation**
The set of active vocabularies that define the words and wordlists known to the FlexWord recognizer.

**vocabulary loading**
The process of copying the vocabulary from the system where it was developed and adding it to the target system.

**voice channel**
A channel that is associated with an interface to the telephone network (Tip/Ring, T1, or PRI). Any CONVERSANT VIS application can run on a voice channel. Voice channel applications may be initiated by being assigned to particular voice channels or dialed numbers to handle incoming calls or by a "soft seizure" request to TSM from a data interface process (DIP) or the **soft_szr** command.

**Voice Information System**
A computer connected to a telephone network that handles touch-tone input, voice response, and line transfer. The Voice Information System uses a screen-based, menu-driven user interface to interact with the system operator or administrator.

**voice processing co-marketer**
A company licensed to purchase voice processing equipment, such as the CONVERSANT VIS, to market and sell based on their own marketing strategies.

**voice response output process**
A software process that transfers digitized speech between system hardware (for example, Tip/Ring and SP cards) and data storage devices (that is, hard disk, etc.)

**Voice System Administration**
The means by which you are able to administer both voice- and nonvoice-related aspects of the system.

**VROP**
See "voice response output process."

## W

**warning**
An admonishment used when there is a possibility of equipment damage.

**WholeWord speech recognition**
An optional feature based on whole-word technology that provides speaker independence, connected digit recognition, key word spotting, prompt interrupt, and DTMF support functionality. See "whole-word technology."

**whole-word technology**
The ability to recognize an entire word, not the phoneme or a part of a word. See "subword technology."

**wink signal**
An interruption of current to a busy lamp indicating that there is a line on hold.

**word**
A unique utterance understood by the recognizer.

**wordlist**
A set of words identified by a wordlist name. If the wordlist is part of an active vocabulary, the wordlist name appears as a recognition type in the Prompt & Collect mode field.

**word spotting**
The ability to search past extraneous speech during a recognition.

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