Lucent Technologies
Bell Labs Innovations

CentreVu® Messenger

Customer Assist Dial Plan Administration

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Comcode 108118258
Issue 1
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- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

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Acknowledgment
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About This Document

This chapter introduces you to Dial Plan and provides an overview of the document. It also directs you to additional related documentation.

Intended Audiences

This document is written for personnel who have the responsibility for installing and maintaining Dial Plan, or supporting customers. As a secondary audience, telecom administrators who are responsible for maintaining or updating Dial Plan at customer sites may consult this document when performing administrative procedures.

How to Use This Document

Before you begin to read this document, determine which category best describes your responsibility relative to Dial Plan:

- Are you responsible for installing or configuring Dial Plan?
- Are you responsible for helping customers who are having difficulty with their system?
- Are you responsible for on-site customer administration, such as changing an area or prefix code?

If you are just starting off with Dial Plan, read Chapter 1, "Product Introduction", to familiarize yourself with the product. Each chapter ends with a summary that directs you to the next chapter you should read based on your responsibilities. If you are not directed to a particular chapter, read the next chapter in the document.

Organization of This Document

This document is divided into 12 chapters including the appendices, glossary and index.

- Chapter 1, "Product Introduction", provides an overview of Dial Plan and describes how it interacts with the switch and network.
- Chapter 2, "Getting Started", describes how to access Dial Plan and navigate the administration interface. It also shows you what type of parameters needs to be configured for your particular site.
- Chapter 3, "System Administration", describes how to administer Dial Plan. It also describes each menu, form and field from the administrative interface in detail.
- Chapter 4, "Release Notes", provides basic information about the current version of the product and its packages, including any changes such as features added, changed, or removed.
- Chapter 5, "Installation and Removal", describes the requirements and procedures for installing, upgrading, restoring, and removing Dial Plan.
- Chapter 6, "Technical Package Information", describes the file and directory structure of Dial Plan.
- Chapter 7, "Troubleshooting", describes problems and solutions to help troubleshoot Dial Plan.
- Chapter 8, "Logs and Error Codes", describes where and how to find error messages if there is a problem.
- Appendix A, "Planning Forms", describes how to plan for an installation. Use these forms in conjunction with Chapter 2, "Getting Started".
- Appendix B, "Switch Configuration", describes how to configure Dial Plan depending on the type of switch you have.
- The glossary contains terms commonly used in Dial Plan and switches.
- The index contains a detailed list of key terms along with the pages where they can be found.

Conventions

This section describes the conventions used in this document.

Terminology

- The word “type” means to press the key or sequence of keys specified. For example, an instruction to type the letter “y” is shown as

  Type y to continue.

- The word “enter” means to type a value and then press ENTER. For example, an instruction to type the letter “y” and press ENTER is shown as

  Enter y to continue.

- The word “select” means to move the cursor to the desired menu item and then press ENTER. For example, an instruction to move the cursor to the start test option on the Network Loop-Around Test screen and then press ENTER is shown as

  Select `Start Test`.

- The INTUITY AUDIX system displays *screens* and *menus*. Large screens both show and request system information. Smaller screens, sometimes called windows, may only request information. Menus provide a list of available selections.

- Keys that you press on your terminal or PC are represented as rounded boxes. For example, an instruction to press the enter key is shown as

  Press ENTER.

- Two or three keys that you press at the same time on your terminal or PC (that is, you hold down the first key while pressing the second and/or third key) are represented as a series of separate rounded boxes. For example, an instruction to press and hold ALT while typing the letter “d” is shown as

  Press ALT D

- Function keys on your terminal, PC, or system screens, also known as soft keys, are represented as round boxes followed by the function or value of that key enclosed in parentheses. For example, an instruction to press function key 3 is shown as

  Press F3 (Choices)

- Keys that you press on your telephone keypad are represented as square boxes. For example, an instruction to press the first key on your telephone keypad is shown as

  Press 1 to record a message.

Screen Displays

- Values, system messages, field names, and prompts that appear on the screen are shown in typewriter-style `constant-width` type, as shown in the following examples:

  Example 1:

  > Enter the number of ports to be dedicated to outbound traffic in the `Maximum Simultaneous Ports` field.

  Example 2:

  ```
  Alarm Form Update was successful.

  Press <Enter> to continue.
  ```

- The sequence of menu options that you must select to display a specific screen or submenu is shown as follows:

  > Start at the INTUITY AUDIX Main Menu and select:
  >
  > ```
  > > Voice System Administration
  > ```
  >
  > In this example, you would access the Main Menu and select Voice System Administration menu.

- Screens show in this document are examples only. The screens you see on your machine will be similar, but not exactly the same.

Other Typography

- Commands and text you type in or enter appear in bold type, as in the following examples:

  Example 1:

  > Enter change-switch-time-zone at the `enter command:` prompt.

  Example 2:

  > Type high or low in the `Speed:` field.

- Command variables, arguments, and return values are shown in ***bold italic*** type when they are part of what you must type in and *regular italic* type when they are not, for example

  > Enter ***ch ma machine_name***, where *machine_name* is the name of the call delivery machine you created.

Safety and Security Alert Labels

This document uses the following symbols to call your attention to helpful hints, potential problems that could cause personal injury, damage to equipment, loss of data, service interruptions, or breaches of toll fraud security.

NOTE:
Information in notes are helpful hints for using Dial Plan. Helpful hints may include basic theory or procedural shortcuts. Notes are indented from the main text.

CAUTION:
Indicates the presence of a hazard that if not avoided can or will cause minor personal injury or property damage, including loss of data.

WARNING:
Indicates the presence of a hazard that if not avoided can cause death or severe personal injury.

DANGER:
Indicates the presence of a danger that if not avoided will cause death or severe personal injury.

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- Ethernet is a trademark of Xerox Corporation.

Related Resources

This section describes additional documentation for you to learn more about the INTUITY AUDIX product.

UnixWare Operating System and AUDIX Documentation

- *SCO UnixWare Documentation Set*, 585-350-908

DEFINITY G3 or ECS R5 Documentation

- *Lucent DEFINITY Communications System Generic 3 Call Vectoring/EAS Guide*, 555-230-520

  or

  Lucent DEFINITY ECS R5 Call Vectoring/EAS Guide, 555-230-521

- *Lucent DEFINITY Communications System Generic 3 Feature Description*, 555-230-204

  or

  Lucent DEFINITY ECS R5 Feature Description, 555-230-301

- *Lucent DEFINITY Communications System Generic 3i Implementation*, 555-230-650,

  Lucent DEFINITY Communications System Generic 3r Implementation, 555-230-651,

  Lucent DEFINITY Communications System Generic 3i-Global Implementation, 555-230-652,

  Lucent DEFINITY Communications System Generic 3 V2 and V3 Implementation, 555-230-653,

  Lucent DEFINITY Communications System Generic 3 V4 Implementation, 555-230-655

  or

  Lucent DEFINITY ECS R5 Implementation, 555-230-302

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Please mention the name and order number of this document, *CentreVu Messenger Customer Assist Dial Plan Administration*, 585-310-507.

Product Introduction

1

This chapter contains a general overview of Dial Plan. You will learn what a dial plan is and develop a basic understanding of its purpose.

Overview

A voice platform application is any software program that runs on AUDIX and sends commands to the switch to perform telephone actions. Dial Plan is a voice platform application that accepts commands from another voice platform application,Customer Assist. Dial Plan makes the application portable to different locations with different network and switch environments. Therefore, the voice platform application that uses Dial Plan is usually not responsible for specific switch and network environment adjustments. If changes in network or switch environment occur, the telecom administrator makes the necessary adjustments through Dial Plan Administration. You do not need to hire a programmer to adjust the code. (See ‘‘Why Dial Plan?’’ on page 1-7 for more information.)

Dial Plan operates as follows:

1. Dial Plan receives a command from the voice platform application. The application requests Dial Plan to perform a telephone action, such as transfer a call or make a call. The application gives Dial Plan a telephone number.
2. Dial Plan takes the telephone number. Depending on how the software is configured, Dial Plan may add access codes and accounting codes to the number. Dial Plan determines whether the number is local or long distance and adjusts the digits accordingly. The number is now a Dial String.
3. Dial Plan then inserts pauses into the Dial String as necessary. These pauses insure that Dial Plan does not start dialing until the switch is ready to accept input.
4. Dial Plan then delivers the commands to the switch and telephone network. The commands instruct the switch to perform a specific telephone action. Dial Plan may also obtain the dialing result from the switch and return the result of the call to Customer Assist.

Some telephone actions, such as placing a call on hold, do not require dialing digits. In these situations Dial Plan delivers the commands to the switch to perform the action.

Figure 1-1 shows how Customer Assist uses Dial Plan.

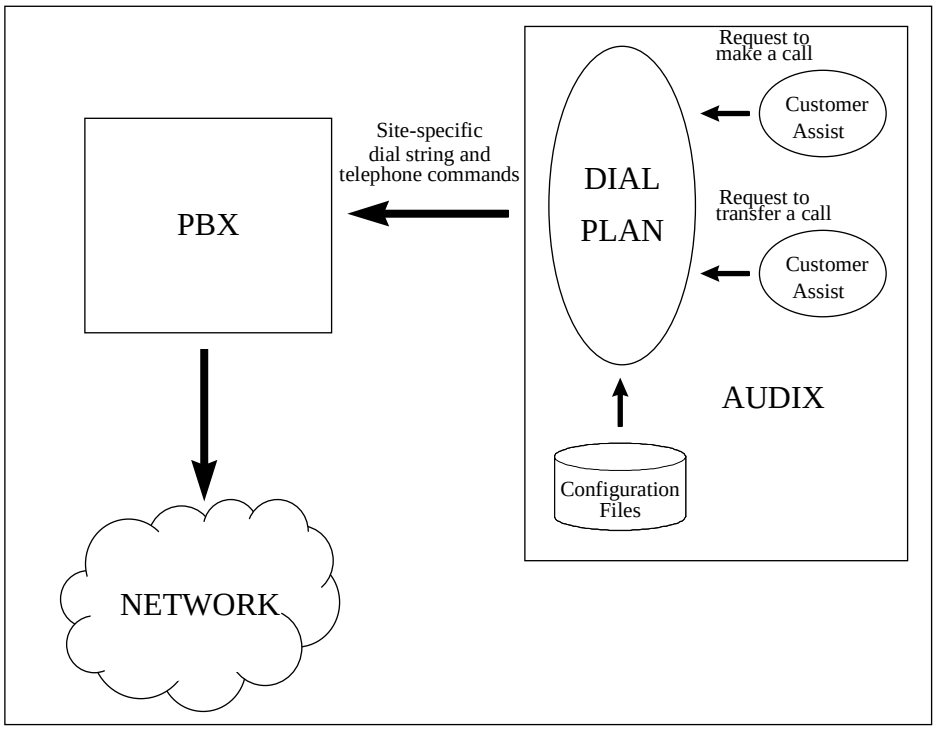


Figure 1-1. Interaction of Dial Plan with the switch and network

Example of Dial Plan Usage

The following example demonstrates how Dial Plan constructs a Dial String and then performs a Make Call in Customer Assist.

Customer Assist Interaction with Dial Plan

For this example, Customer Assist must callback a customer. It must dial in an intelligent mode, that is, detect the result of the call, to insure that the called party answers. Customer Assist uses Dial Plan as its interface to the switch and telephone network.

Scenario

The switch is located in Rochester, Minnesota, with an area code of 507. The customer's telephone number is (612) 971-2101.

Process

Customer Assist passes the customer's telephone number to Dial Plan. It requires that Dial Plan perform a Make Call, or call the customer, in an intelligent mode to detect the result of the call.

Construct the Dial String

Dial Plan analyzes the telephone number passed to it. It uses the information you enter into the Dial Plan Administration to construct a complete telephone number, or Dial String, that can be dialed to reach the customer, as follows (See "Dial String Construction" on page 1-8 for more information on constructing Dial Strings):

- Determines whether the number is local, nearby long distance, or long distance. If the number is nearby long distance or long distance, Customer Assist adds the necessary access code.
- Adds Accounting Codes
- Inserts any pauses the switch may require

Example of Constructing the Dial String

Customer Assist passes the telephone number to Dial Plan. The following list shows where Dial Plan gets each part of the Dial String. Dial Plan constructs the Dial String as follows (See Chapter 3, ‘‘System Administration’’, for field definitions):

- Determines call type

  Customer Assist informs Dial Plan that the telephone number is an external number. Dial Plan compares the customer’s area code to that of the switch. Since the area codes are different, Dial Plan determines the number is Distant Long Distance.

- Adds necessary codes

  — “9” to reach an outside line

  Dial Plan includes the outside access code to signal the switch to make a call outside the switch. The `Outside Access Code` field entry in the Application Specific Settings form is “9.”

  Dial Plan does not include the outside access code in the Dial String unless `Dial Outside Access Code` field entry in the Distant Long Distance Number Format form is set to “Y.”

  — “1” for long distance service

  The call requires long distance service. Dial Plan must include the long distance access code in order to access long distance service. The `Long Distance Access Code` field entry in the Application Specific Settings form is “1.”

  Dial Plan does not include the long distance access code in the Dial String unless `Dial Long Distance Access Code` field entry in the Distant Long Distance Number Format form is set to “Y.”

  — “6129712101”, the customer’s telephone number

  Customer Assist passes this telephone number to Dial Plan. Dial Plan includes the area code in the Dial String because the customer’s area code does not match the area code of the switch.

  Dial Plan does not include the area code in the Dial String unless `Dial Area Code` field entry in the Distant Long Distance Number Format form is set to “Y.”

- Accounting Codes

  — “012117”, the accounting code for Customer Assist calls

  The customer requires an accounting code to track the cost of Customer Assist calls. The `Ending Accounting Code` field entry in Application Specific Settings is “012117.”

Dial Plan does not include the accounting code in the Dial String unless `Dial Ending Accounting Code` field entry in the Distant Long Distance Number Format form is set to "Y."

- Inserts any pauses the switch may require
  - PP, a pause of 2 seconds

    The long-distance accounting service requires a pause between the telephone number and the ending accounting code. Dial Plan includes this pause in the Dial String. It places the pause before the ending accounting code.

    The Pre and Post Codes form under the Switch Specific Settings form tells Dial Plan whether or not pauses need to be entered between the various parts of the Dial String.

Perform the Make Call

Now that the Dial String is complete, Dial Plan can call the customer. It performs the Make Call as follows:

1. Sends commands to the voice platform. The voice platform port goes off hook and detects dial tone. It outpulses the Dial String, as follows: 916129712101PP012117 (the telephone number, a pause of two seconds, and then the accounting code).
2. Dial Plan sends commands requesting the voice platform wait until it detects error, busy, or speech energy, or until a specified number of ring cycles elapse without detecting speech energy.
3. The voice platform detects the result of the call and returns it to Dial Plan.
   a. If the result of the call is error, busy, ring, or no answer, then Dial Plan sends commands to end the call to the customer and provides the result of the call to Customer Assist.
   b. If the result of the call is answer, Dial Plan returns the result to Customer Assist and ends Dial Plan activity. Customer Assist conducts the dialogue with the called party.

Summary of Dial Plan Example

Customer Assist had to determine the 10-digit number of the customer to dial. It also had to instruct Dial Plan to call the number and return the result of the call. Dial Plan made the adjustments for timing and access and accounting codes. Dial Plan issued the commands to the switch and then received and interpreted its responses.

Figure 1-2 on page 1-9 shows the relationship between Dial Plan, Customer Assist that uses Dial Plan, the switch, and the telephone network.

Why Dial Plan?

Dial Plan serves three functions:

- It frees the programmer and the application code from the specific concerns of the switch and telephone network.

  In our example, Customer Assist has only two responsibilities:

  — To invoke the Intelligent Make Call Action

  — To provide the telephone number of the party to dial

  Customer Assist is usually not responsible for specific switch and network environment adjustments. Dial Plan takes on the following responsibilities:

  — Timing considerations

  — Access or accounting code adjustments

  — Long distant versus local dialing

  — Switch-specific commands

  Dial Plan makes the application portable to different locations with different network and switch environments. From a telephone service perspective, Customer Assist in the example can work as well in St. Louis, Phoenix, or Munich, as for Rochester. Dial Plan handles the switch and telephone network differences between these locations.

- If changes in network or switch environment occur, then the adjustments happen in one place.

  Example: The telephone company decides to split your area code into 2 area codes in order to accommodate new telephone numbers. The telecom administrator goes to one place, Dial Plan administration, and quickly makes the necessary adjustments. The adjustments are faster, easier and more reliable.

- If changes in network or switch environment occur, then the telecom administrator makes the necessary adjustments through Dial Plan Administration. You do not need to hire a programmer to adjust the code.

  Example: The accounting practices at your company change. You have a new Accounting Code that you must enter when making outbound calls. If Customer Assist uses Dial Plan, you do not need a developer to make the changes to the application code. The telecom administrator can make the necessary adjustment to Customer Assist through Dial Plan. Dial Plan eliminates the time, expense, and risk of code changes.

Dial String Construction

This section explains how Dial Plan constructs dial strings.

Customer Assist Interaction with Dial Plan

Customer Assist instructs Dial Plan to perform a telephone action, such as one of the following (See “Function Specific Settings” on page 3-20 for more information on telephone actions):

- Conference Actions
- Drop Actions
- Hold Actions
- Intelligent Actions
- Make Call Actions
- Message Waiting Lights
- Transfer Actions

If the telephone action requires dialing, then Customer Assist supplies Dial Plan with the following:

- The telephone number of the party to dial
- Whether the number is an internal number to the switch or an outside number
- If the number is an international number, then the country code for the number

Structure of Dial String

Dial Plan sees the Dial String as a series of parts, as follows:

- Outside Access Code
- Beginning Accounting Code
- Equal Access Code
- Long Distance Access Code
- International Access Code
- Country Code
- Area or City Code
- Prefix of Subscriber Number
- Termination Code
- Ending Accounting Code

Figure 1-2 shows the relationship of the various Dial String parts.

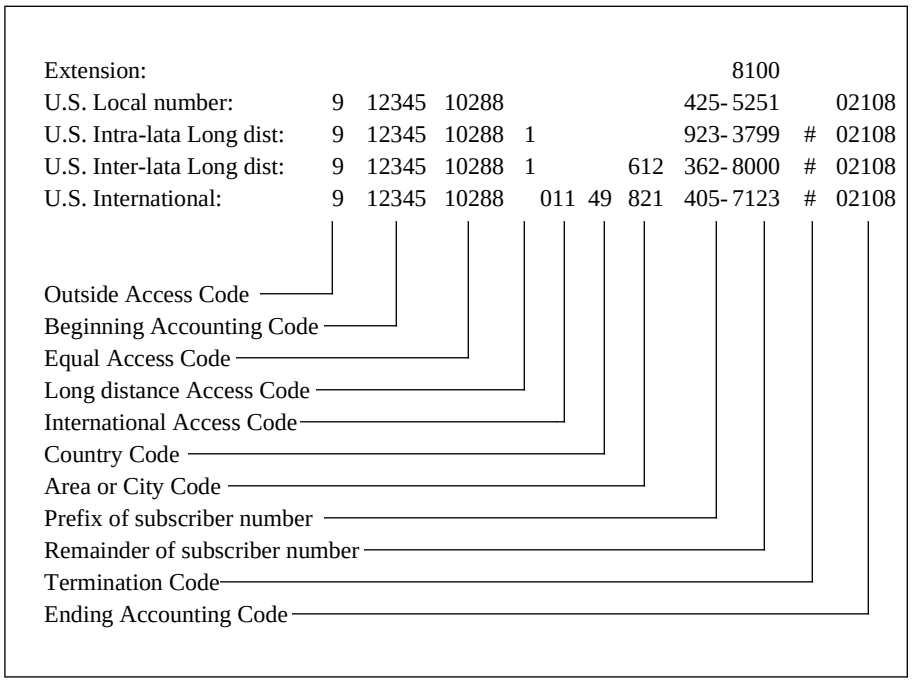


Figure 1-2. Anatomy of a telephone Number

Telephone Number Types

Before it forms the dial string, Dial Plan determines the type of telephone number Customer Assist passed. Possible types include:

- Internal — local station extension on the switch
- Local — outside number in the local city/area code that does not require long distance access
- Nearby Long Distance — outside number in the local city/area code that does require long distance access
- Distant Long Distance — number within the local country code but outside the local city/area code
- International — number outside the local country code

Figure 1-3 on page 1-10, Figure 1-4 on page 1-11, and Figure 1-5 on page 1-12 show the algorithm that Dial Plan uses to determine the type of telephone number.

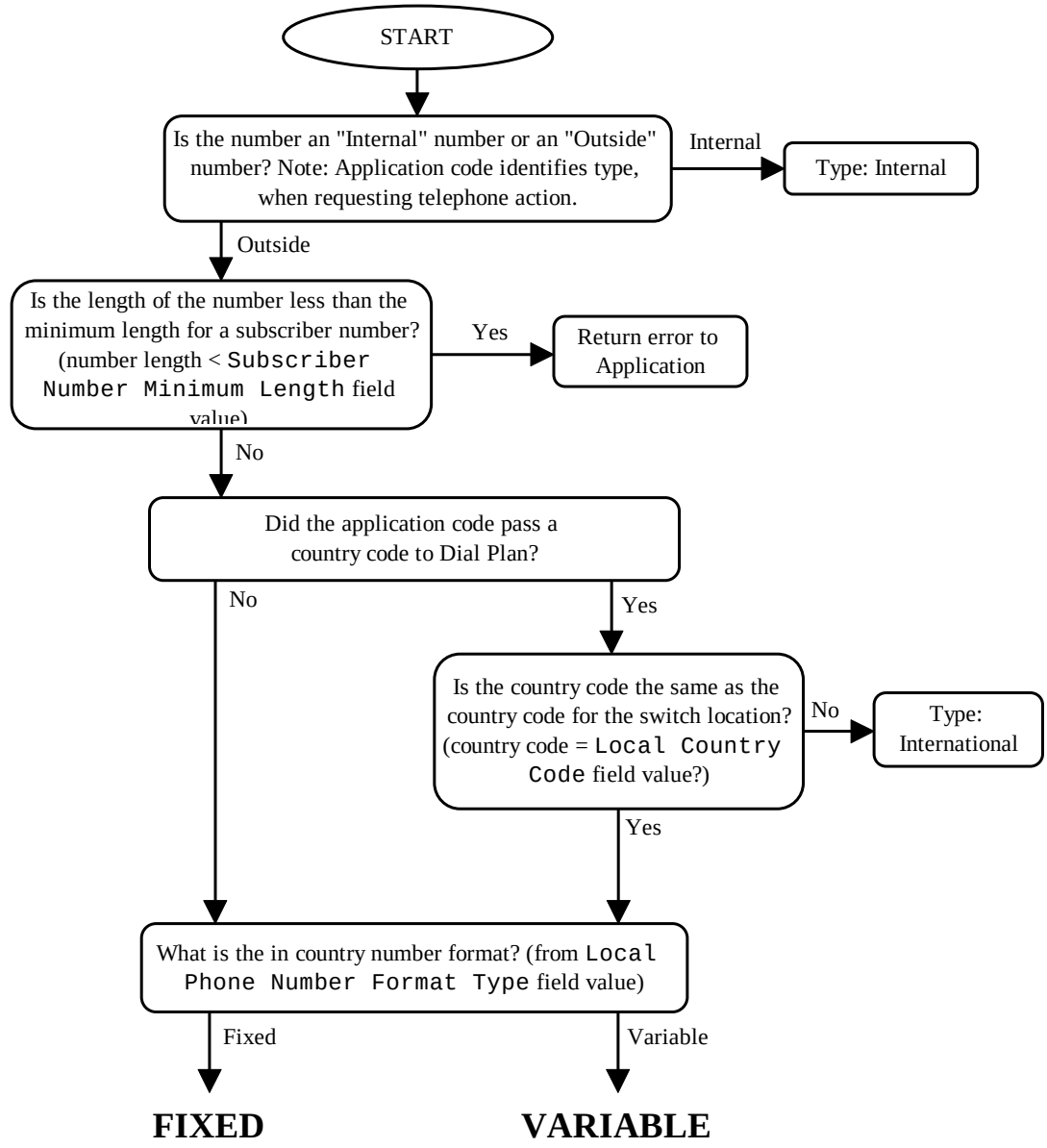


Figure 1-3. Application Code uses Dial Plan to create a Dial String

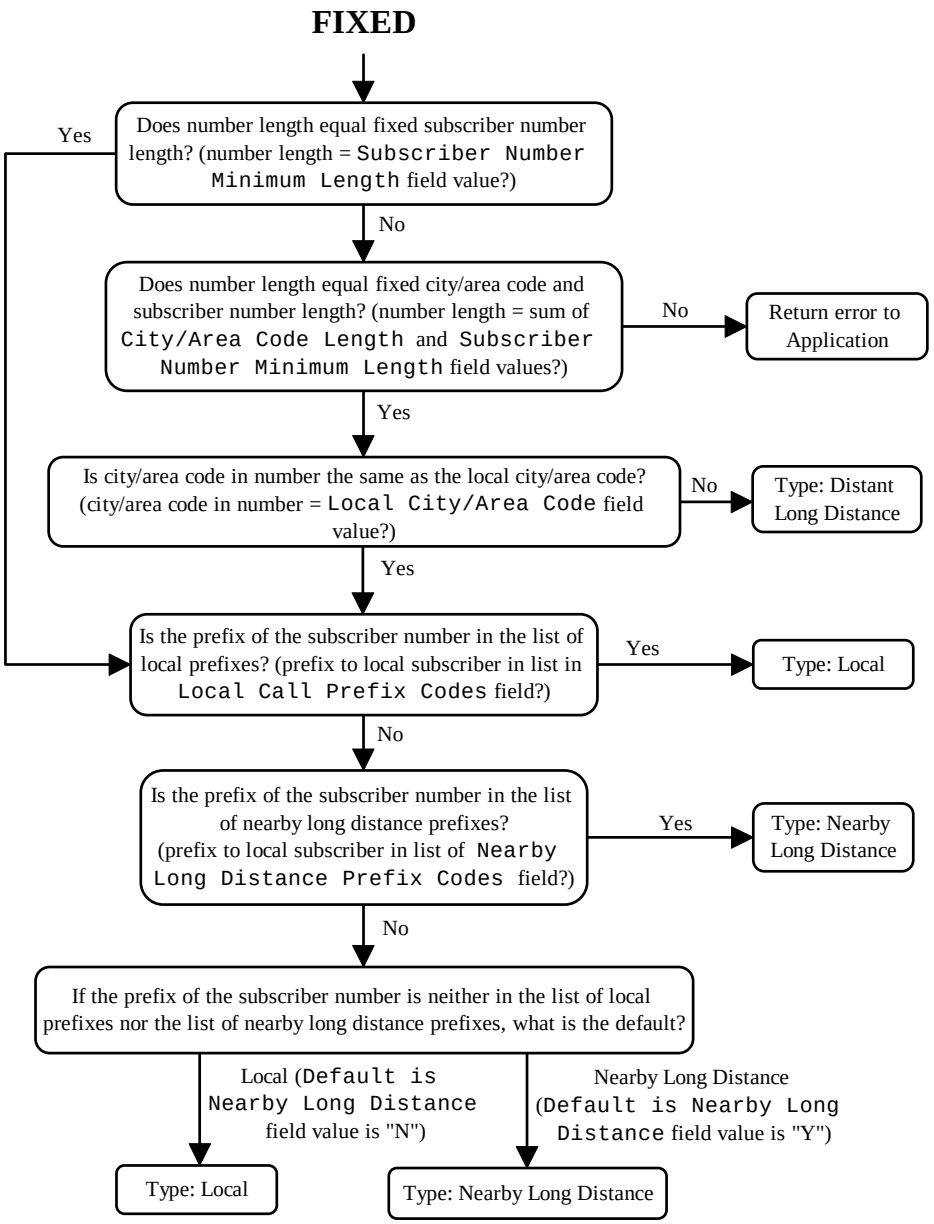


Figure 1-4. Fixed Format

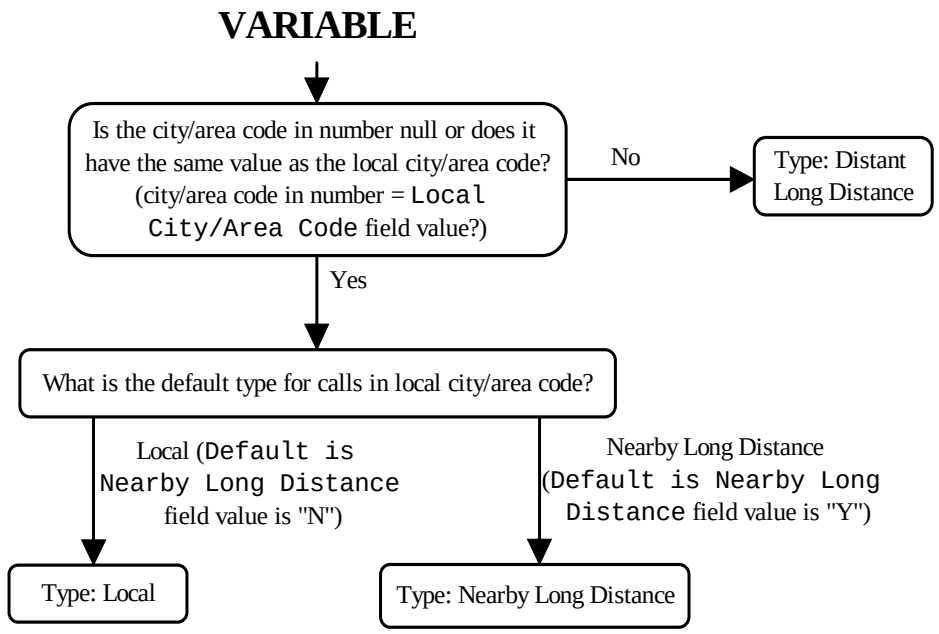


Figure 1-5. Variable Format

Dial String Formation

After Dial Plan determines the type of telephone number, it creates the Dial String. It decides the fields to include according to the following rules (See ‘‘Application Specific Settings’’ on page 3-2 for field definitions):

Internal Extension

- As is, without any additions or changes to the digits in the Dial String provided by Customer Assist

Local Number

- `Outside Access Code` field value
- `Beginning Accounting Code` field value, if:
  - — The field has an entry, and:
  - — The `Dial Beginning Accounting Code` field in the Local Number form is set to “Y”
- Local subscriber number, which Customer Assist provides
- `Ending Accounting Code` field value, if:
  - — The field has an entry, and:
  - — The `Dial Ending Accounting Code` field in the Local Number form is set to “Y”

Nearby Long Distance Number (Intra-lata)

- `Outside Access Code` field value
- `Beginning Accounting Code` field value, if:
  - — The field has an entry, and:
  - — The `Dial Beginning Accounting Code` field in the Nearby Long Distance Format form is set to “Y”
- `Equal Access Code` field value, if:
  - — The field has an entry
- `Long Distance Access Code` field value, if:
  - — The field has an entry, and:
  - — The `Dial Long Distance Access Code` field in the Nearby Long Distance Format form is set to “Y”
- City/area code, which Customer Assist provides, if:
  - — The `Dial Area Code` field in the Nearby Long Distance Format form is set to “Y”

- Local subscriber number, which Customer Assist provides
- Termination Code field value, if:
  - The field has an entry
- Ending Accounting Code field value, if:
  - The field has an entry, and:
  - The Dial Ending Accounting Code field in the Nearby Long Distance Format form is set to "Y"

Even though a long distance access code is used, the city/area code does not need to be dialed. Currently, this type of telephone number is only used in the US.

Long Distance Number (Inter-lata)

- Outside Access Code field value
- Beginning Accounting Code field value, if:
  - The field has an entry, and:
  - The Dial Beginning Accounting Code field in the Distant Long Distance Format form is set to "Y"
- Equal Access Code field value, if:
  - The field has an entry
- Long Distance Access Code field value, if:
  - The field has an entry, and:
  - The Dial Long Distance Access Code field in the Distant Long Distance Format form is set to "Y"
- City/area code, which Customer Assist provides, if:
  - The Dial Area Code field in the Distant Long Distance Format form is set to "Y"
- Local subscriber number, which Customer Assist provides
- Termination Code field value, if:
  - The field has an entry
- Ending Accounting Code field value, if:
  - The field has an entry, and:
  - The Dial Ending Accounting Code field in the Distant Long Distance Format form is set to "Y"

International Number

- `Outside Access Code` field value
- `Beginning Accounting Code` field value, if:
  - — The field has an entry
- `Equal Access Code` field value, if:
  - — The field has an entry
- `International Access Code` field value
- Country code, which Customer Assist provides
- City/area code, which Customer Assist provides
- Local subscriber number, which Customer Assist provides
- `Termination Code` field value, if:
  - — The field has an entry
- `Ending Accounting Code`, if:
  - — The field has an entry

Summary

This chapter provided an overview of the features and services of Dial Plan.

- See Chapter 2, ‘‘Getting Started’’, for instructions on how to log into the system and set it up for your needs.
- See Chapter 4, ‘‘Release Notes’’, for basic information about the current version and its packages, as well as information about changes such as features added, changed, or removed.
- See Chapter 5, ‘‘Installation and Removal’’, for instructions on how to install and remove Dial Plan.
- See Chapter 7, ‘‘Troubleshooting’’, to learn how to troubleshoot for Dial Plan.

Getting Started

2

This chapter describes how to log in to Dial Plan and navigate screens. It also includes instructions for customer system administrators who must make changes to the city/area code or prefixes.

Accessing the Dial Plan Administration Menus

Dial Plan Administration can be reached through AUDIX Administration.

To log in to Dial Plan through AUDIX Administration:

1. Enter **Vex** at the system prompt.
2. Select Application Package Administration.
3. Select Dial Plan.

   The system displays the Dial Plan Administration menu (Figure 2-1).

User Interface Conventions

You begin all system activities by highlighting a menu option and pressing ENTER.

Dial Plan uses function and arrow keys to select options and save changes. Use the Up ▲ arrow key to highlight the option above the highlighted area on the screen. Use the Down ▼ arrow key to highlight the option below the highlighted area on the screen.

Function Keys

At the bottom of each screen are function keys. Dial Plan assigns specific tasks to function keys F1 to F8. The task may change with each screen. Function keys correspond with the function keys on your keyboard. The following tasks are assigned to the function keys:

- HELP [F1]; context sensitive information about using the highlighted feature
- CHOICES [F2]; shows values available for entry into selected fields
- MARK [F2]; selects the highlighted option
- ENTER [F3]; executes the highlighted option, moves to the next field, or moves to the highlighted menu
- CLOSE [F3]; closes the screen and saves your changes
- DEFAULTS [F4]; returns the form settings to the default settings
- PREV-FRM [F4]; displays the previous screen
- NEXT-FRM [F5]; displays the next screen
- CANCEL [F6]; cancels the selected action or closes the current menu or form and returns to the previous screen without saving your changes
- CMD-MENU [F7]; displays the Command menu

On-line Help

This option allows you to view menu, form and field definitions on screen. Press [F1] to access on-line help.

Dial Plan Administration

NOTE:
The Dial Plan Administration menu is the starting point for all Dial Plan Administration. Any changes made to the Administration take effect as soon as you exit Dial Plan Administration.

NOTE:
Selecting an option brings up that menu in addition to any other menus currently displayed. This means there can be several menus visible at the same time.

After you start Dial Plan Administration, the Dial Plan Administration menu appears (Figure 2-1):

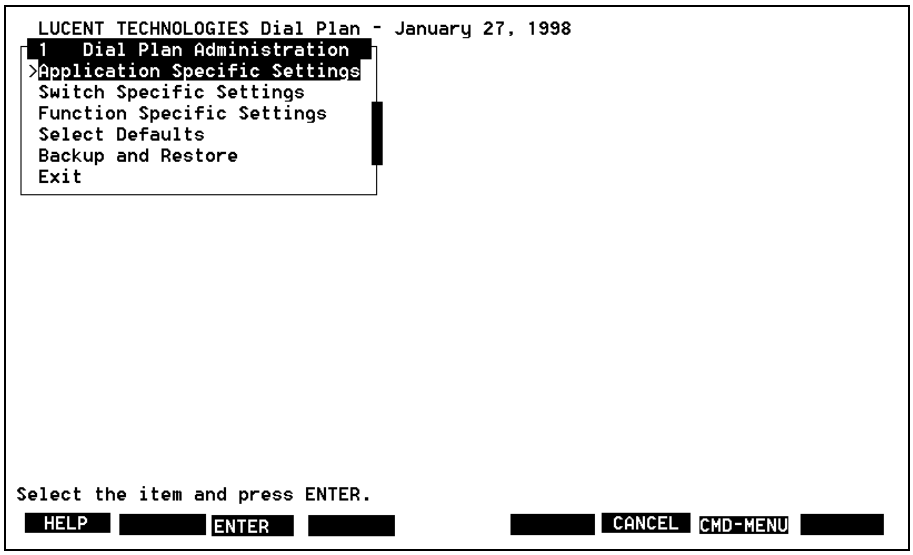


Figure 2-1. Dial Plan Administration menu

The following sections provide an overview for each of the menu items in the Dial Plan Administration menu.

Application Specific Settings

This menu option includes settings that relate to the content of the Dial String, such as country codes, city/area codes, prefixes, long distant service access code, and accounting codes. It also includes settings that determine whether Dial Plan performs blind or intelligent dialing in cases where the voice platform application submits a request to dial without specifying the mode.

Select the Application Specific Settings screen from the Dial Plan Administration screen (Figure 2-2):

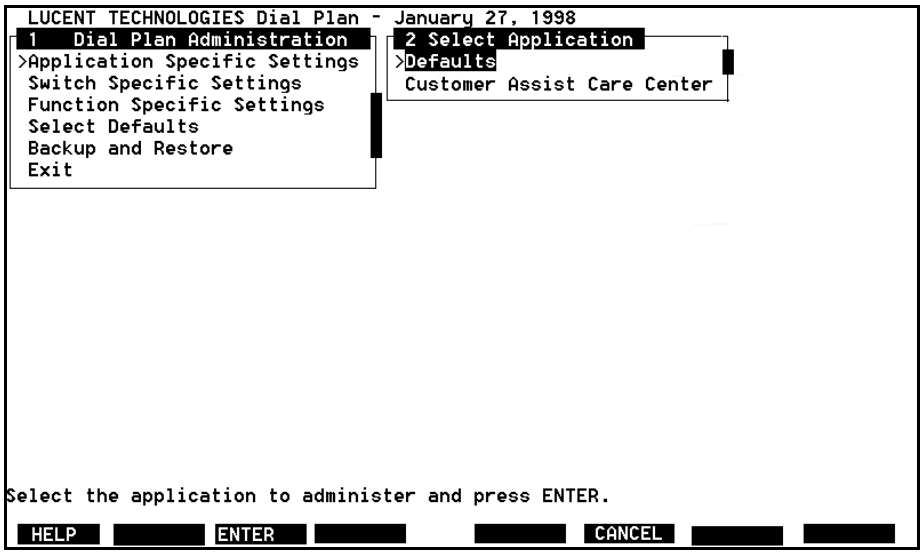


Figure 2-2. Application Specific Settings menu

This menu lets you perform two types of administration:

- Change the individual field settings for your system default settings. For example, you could change the City/Area Code or Accounting Code default value.
- Administer the field settings for your voice platform application that uses that use Dial Plan.

Switch Specific Settings

This menu option allows you to insert pauses to insure Dial Plan does not dial before the switch is ready to accept the input into the Dial String. It also allows you to identify what parts of the telephone number Dial Plan should dial for each type of call. For example, should it dial an equal access code or the city/area code for a given long distance number?

Select the Switch Specific Settings screen from the Dial Plan Administration screen (Figure 2-3):

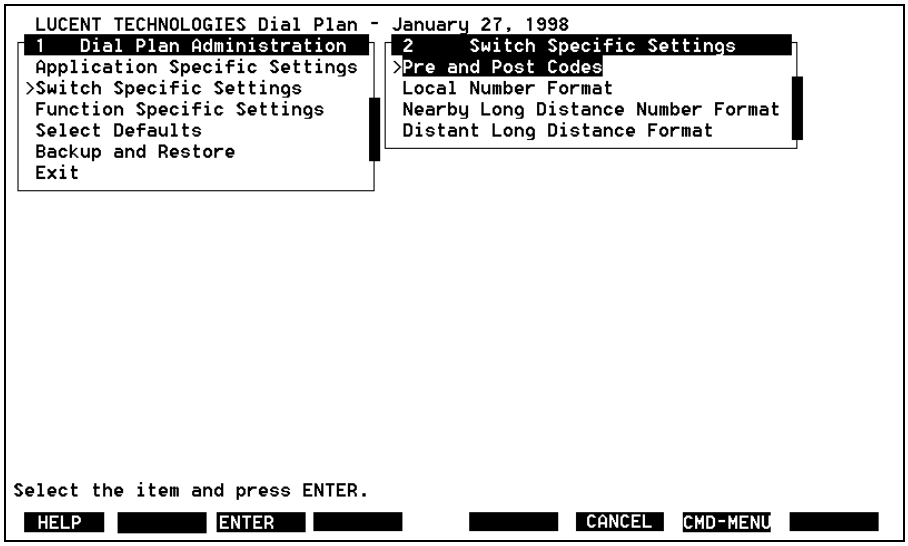


Figure 2-3. Switch Specific Settings menu

This menu lets you perform two types of administration:

- Instruct Dial Plan where to insert pauses in the Dial String. (See "Switch Specific Settings" on page 3-13 for more information.)
- Designate what telephone number parts and codes Dial Plan should include in the Dial String for each type of call. Select the option that corresponds to the type of call you want to administer:
  - Local Number Format
  - Nearby Long Distance Number Format
  - Distant Long Distance Number Format

Function Specific Settings

This menu option allows you to define the internal sequence of the switch-dependent field values Dial Plan requires to carry out basic telephone actions. Field values are actions such as pauses, flashes, and feature access codes. Telephone actions are actions such as Transfer, Conference, Make Call, and illuminating and extinguishing Message Waiting Lights.

Select the Function Specific Settings screen from the Dial Plan Administration screen (Figure 2-4):

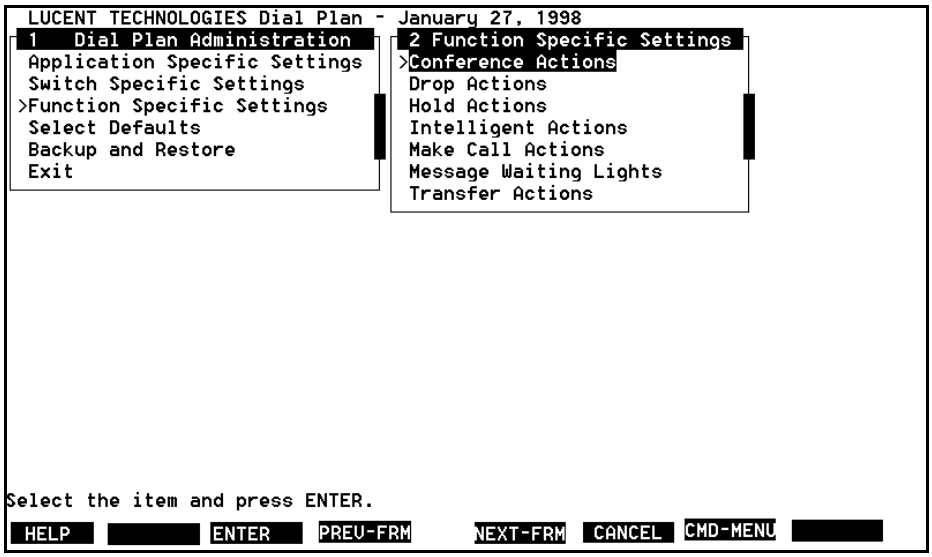


Figure 2-4. Function Specific Settings screen

This menu allows you to administer the following telephone actions:

- Conference Action
- Drop Actions
- Hold Actions
- Intelligent Actions
- Make Call Actions
- Message Waiting Lights
- Transfer Actions

See "Function Specific Settings" on page 2-5 for more information.

Select Defaults

This menu option allows you to select a Default Settings package based on switch and country, and change the default settings for your application. Your options for Default Settings packages depend on what is installed on your system.

NOTE:
At any time you can press DEFAULTS F4 to return all field values to the default package settings.

Backup and Restore

This menu option allows you to back up and restore the configuration. This should be done as a safety precaution whenever the configuration changes or when upgrading to a new version of Dial Plan.

Exit

This menu option closes Dial Plan Administration and returns you to the Application Package Administration window.

Configuration Planning

This section shows you how to collect the information you need to configure Dial Plan using the planning forms in Appendix A, ‘‘Planning Forms’’. It requires you ask the customer telecom administrator questions about the particular switch and network services.

Types of Information to Gather

The planning forms divide the information you must gather into five categories:

- Switch and telephone network information
- Components of the Dial String
- Questions for fixed and variable format phone numbers
- Application specific information
- How the switch performs telephone actions

Each category has an associated planning form in Appendix A, ‘‘Planning Forms’’. Figure 2-5 shows part of the planning form, “General Dialing Related Questions Planning Form: Digits Related.”

What is your local country code?		**Form:** Application Specific Settings **Field:** `Local Country Code`
What is your local city or area code?		**Form:** Application Specific Settings **Field:** `Local City/Area Code`
Is the length of the local subscriber numbers and city/area codes always fixed, or sometimes variable?	Circle one: Fixed (F) Variable (V)	**Form:** Application Specific Settings **Field:** `Local Phone Number Format Type`

Figure 2-5. General Dialing Related Questions Planning Form: Digits Related

- The left-hand column shows the questions you must ask the customer telecom administrator or person knowledgeable about the switch and network environment.
- The center column provides space for you to record their answers.
- The right-hand column shows the relationship between the questions and the Dial Plan settings.

Switch and Telephone Network Information

This planning form contains basic questions about the characters and digits Dial Plan needs to construct the Dial String. It includes switch and telephone network-specific information such as the city/area code, country code, local subscriber number prefixes, and pre and post codes. Dial Plan attaches some of these characters and digits to the telephone number passed by the voice platform application in order to construct the Dial String.

- Use the “General Dialing Related Questions Planning Form: Digits Related” on page A-2 for this type of information.

Components of the Dial String

This planning form contains basic questions about how a particular telephone number type is dialed from the customer’s site. It determines the characters and digits that should be attached to each type of phone number.

- Use Table A-4, “General Dialing Related Questions Planning Form: Format Related” for this type of information.

Questions for Fixed and Variable Format Phone Numbers

These planning forms contain questions that are specific to fixed format or variable format telephone numbers. These planning forms determine whether Dial Plan dials a long distance access code for numbers within the same city/area code as the switch. Use one of the following forms:

- Use the "General Dialing Related Questions Planning Form for Fixed Format" on page A-6 for sites with fixed format numbers.
  - — Fixed format telephone numbers have a fixed length subscriber number and fixed length city/area code. The US, Canada, and Mexico are among the countries that use fixed format.
- Use Table A-4, "General Dialing Related Questions Planning Form for Variable Format" for sites with variable format numbers.
  - — Variable format telephone numbers do not have a fixed length subscriber number and/or fixed length city/area code. The United Kingdom, Germany, and Japan are among the countries that have variable formats.

Application Specific Information

This planning form contains basic questions that are specific to a particular voice platform application. For example, the form determines the accounting code Dial Plan uses for a particular application.

- Use Table A-5, "Application Specific Planning Form" for this type of information.

How the Switch Performs Telephone Actions

This planning form contains questions that determine the commands Dial Plan must deliver to the switch in order to perform telephone actions.

- Use the "Telephone Functions Planning Form" on page A-10 for this type of information.

Summary

This chapter introduced you to the screen-based administration and showed you how to navigate the system. It also gave you an overview of the types of questions you must ask the customer telecom administrator in order to configure Dial Plan correctly. Use this chapter in conjunction with Appendix A, ‘‘Planning Forms’’.

- See Chapter 3, ‘‘System Administration’’, for more information on configuring Dial Plan or performing on-site administration, and for the specific parameter values.
- See Appendix A, ‘‘Planning Forms’’, for planning forms that are designed to help you configure Dial Plan.
- See Appendix B, ‘‘Switch Configuration’’, for default settings for your switch.

System Administration

3

This chapter describes each menu, form and field in detail. It assumes Dial Plan has been installed on your system. See Chapter 5, ‘‘Installation and Removal’’, for information on how to install Dial Plan.

System Administration Overview

After you install Dial Plan, you must configure it so that it can perform the following tasks for the switch, network, and application environment:

- Construct a Dial String
- Insert pauses into the Dial String to insure Dial Plan does not dial until the switch is ready to accept the input
- Issue commands to execute basic telephone actions, such as hold or transfer

Parameter Settings and Field Descriptions

The Dial Plan Administration menu has an option for each of the following system administration tasks:

- Application Specific Settings allows you to enter the parameters Dial Plan must construct a Dial String.
- Switch Specific Settings allows you to insert pauses into the Dial String. It also allows you to specify the components of the telephone number that Dial Plan must dial for different types of calls.
- Function Specific Settings allows you to enter the commands Dial Plan must pass to the switch to execute basic telephone actions.

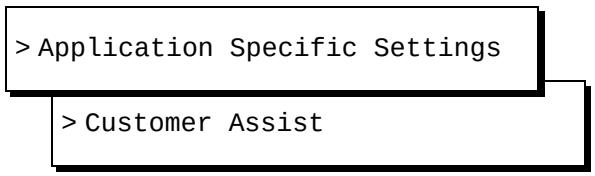
Application Specific Settings

This menu provides two options. You can administer either the default settings or the Customer Assist settings.

Access Application Specific Settings

Use the following steps to access the Application Specific Settings menu:

1. Start at the Dial Plan Administration menu and select



The system displays the Application Specific Settings Configuration Defaults form (Figure 3-1 and Figure 3-2):

NOTE:
Please consult the manual for the application you want to administer for specific field settings.

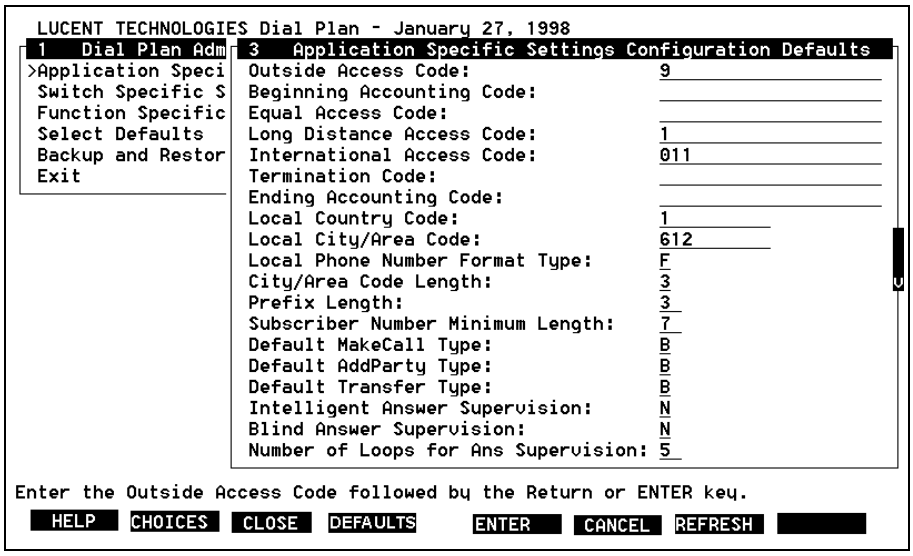


Figure 3-1. Application Specific Settings Configuration Defaults, screen 1

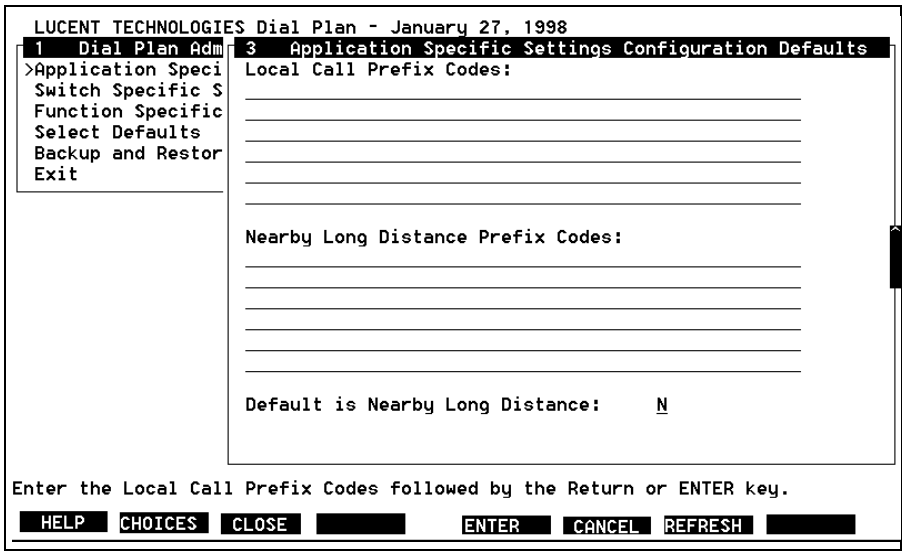


Figure 3-2. Application Specific Settings Configuration Defaults, screen 2

The following table describes each field that appears in the Application Specific Settings form. Use these descriptions to determine what to enter into each field.

Table 3-1. Field Descriptions for Application Specific Settings

Field	Description
Outside Access Code	The digit or digits you dial to get an outside line.
Beginning Accounting Code	A code used for billing, accounting, and determining who placed the call. Consult the telecom administrator to make sure the switch is configured for beginning accounting codes. This field is optional based on the application. Leave blank if it is not used.
Equal Access Code	The sequence of digits needed to specify a long-distance carrier, such as Sprint, MCI, or AT&T.
Long Distance Access Code	The sequence of digits needed to indicate that this is an in-country, long distance call. For North America use “1”.

Continued on next page

Table 3-1. Field Descriptions for Application Specific Settings — *Continued*

Field	Description
International Access Code	The sequence of digits that indicates an international call. For North America use “011”.
Termination Code	The sequence of digits that mark the end of a telephone number. Not all switches support or require this field. The value for this field is determined by the switch. Any digits after this code, such as an accounting code, are not part of the telephone number and need to be separated from it.
Ending Accounting Code	A code used for billing, accounting, and determining who placed the call. It is dialed after Dial Plan dials all digits of a telephone number and termination code, if any. Consult the telecom administrator to make sure the switch is configured for ending accounting codes. This field is optional based on the application. Leave blank if not used.
Local Country Code	The country code for the site. Use “1” in the United States. Dial Plan checks the Local Country Code field to determine whether or not an outbound call is international. If the outbound call country code, which is provided by Customer Assist, is different than the Local Country Code field, Dial Plan determines the call is international.
Local City/Area Code	The city/area code of the site. The term area code is used in North America. In other countries it may be known as city code. If the city/area code on an outbound call does not match this entry, then Dial Plan determines the telephone number is a long-distance number.
Local Phone Number Format Type	Local telephone numbers and city/area codes are either fixed in length, such as in the United States, or variable in length, such as in Europe. Use “F” for fixed or “V” for variable length.
City/Area Code Length	The number of digits in the city/area code part of a telephone number. In North America, an area code is three digits in length. If the length is variable, enter the minimum number of digits in a city/area code.

Continued on next page

Table 3-1. Field Descriptions for Application Specific Settings — *Continued*

Field	Description
`Prefix Length`	The number of digits in the prefix part of the subscriber number. For instance, the subscriber number 971-2000 has the prefix 971. Dial Plan parses the prefix from the subscriber number. It compares the prefix to the digits in the prefix lists, either the `Local Call Prefix Codes` list or the `Nearby Long Distance Prefix Codes` list, to determine if the outbound call is local or nearby long distance. In North America, the prefix length is three. This field is used only in the US to distinguish whether a telephone number is local or nearby long distance. Fixed format telephone numbers require an entry in this field. Leave this field blank for variable format telephone numbers.
`Subscriber Number Minimum Length`	The minimum number of digits in a subscriber number in your local city/area code, excluding any access codes. An outbound call is any call outside your switch but within your local network or numbering area. Dial Plan treats any number shorter than this size as an error unless it has been specified as an internal extension. In North America, the subscriber number length is fixed at seven. You must dial seven digits to make a local outbound call.
`Default Make Call Type`	A Make Call occurs when Dial Plan tells the voice platform to dial a number; that is, to make a call. To perform a Make Call, Dial Plan must format the number; that is, create the Dial String, and then dial the number. This field determines whether or not Dial Plan checks for speech energy during a Make Call. If this field is set to "I" for Intelligent and the voice platform hears a non-answer call-progress tone, such as a busy signal, or if it does not detect speech energy, then the call to the new party is considered a failure and dropped. If this field is set to "B" for blind, then Dial Plan does not check for speech energy. In order to perform intelligent actions, you must have IVC analog ports. Please see your switch manual for specific field settings.

Continued on next page

Table 3-1. Field Descriptions for Application Specific Settings — *Continued*

Field	Description
`Default AddParty Type`	AddParty occurs when the voice platform adds a new party to the conference call. This field determines whether or not the voice platform checks for speech energy and call progress tones before adding a new party to a conference call. This field determines whether or not the voice platform checks for speech energy during an AddParty. If this field is set to “I” for Intelligent and the voice platform hears a non-answer call-progress tone, such as a busy signal, or if it does not detect speech energy, then the call to the new party is considered a failure and dropped. If this field is set to “B” for blind, then the voice platform does not check for speech energy. In order to perform intelligent actions, you must have IVC analog ports. Please see your switch manual for specific field settings.
`Default Transfer Type`	During a transfer, the voice platform moves a call from one extension to another. This field determines whether or not Dial Plan checks for speech energy and call progress tones before transferring a call. If this field is set to “I” for Intelligent and Dial Plan hears a non-answer call-progress tone, such as a busy signal, or if it does not detect speech energy, then the call to the new party is considered a failure and dropped. If this field is set to “B” for blind, then Dial Plan transfers the call without checking for speech energy or call progress tones. In order to perform intelligent actions, you must have IVC analog ports. Please see your switch manual for specific field settings.
`Intelligent Answer Supervision`	Enter “Y” if Dial Plan should wait for speech energy before prompting the called party to enter a touch-tone response during a conference call. The default value is “N.”

Continued on next page

Table 3-1. Field Descriptions for Application Specific Settings — *Continued*

Field	Description
`Blind Answer Supervision`	Enter "Y" if Dial Plan should not wait for speech energy before prompting the called party to enter a touch-tone response during a conference call. If this field is set to "Y," then Dial Plan prompts continuously. The default value is "N."
`Number of Loops for Ans Supervision`	This field applies to conference calls and allows you to set the number of times Dial Plan will prompt the person receiving the call for a touch-tone response before Dial Plan considers the call a failure.
`Local Call Prefix Codes`	A list of prefix codes for local telephone numbers (Leave this list blank for variable length format telephone numbers). Dial Plan uses this list to determine whether the prefix of the telephone number passed by Customer Assist is local. This field is used only for determining the type of call. If Dial Plan determines the number is local, it will not dial a city/area code. If you set the `Default is Nearby Long Distance` field to "N," you do not need to enter prefixes into this list (For fixed format telephone numbers, the `Default is Nearby Long Distance` field requires an entry). Dial Plan assumes that any number that does not appear in either list should be dialed as a local number. However, you must complete the `Nearby Long Distance Prefix Codes` field. Delimit each entry with a space.

Continued on next page

Table 3-1. Field Descriptions for Application Specific Settings — *Continued*

Field	Description
Nearby Long Distance Prefix Codes	A list of prefix codes for nearby long-distance telephone numbers (Leave this list blank for variable length format telephone numbers). Dial Plan uses this list to determine whether the prefix of the telephone number passed by Customer Assist is nearby long distance. This field is used only for determining the type of call. If Dial Plan determines the number is nearby long distance, it will dial the city/area code. If you set the Default is Nearby Long Distance field to "N," you do not need to enter prefixes into this field (For fixed format telephone numbers, the Default is Nearby Long Distance field requires an entry). Dial Plan assumes that any number that does not appear in either list should be dialed as a nearby long distance number. However, you must complete the Local Call Prefix Codes field. Delimit each entry with a space.
Default is Nearby Long Distance	Dial Plan compares the prefix of the telephone number Customer Assist provides to the prefix numbers in the Local Call Prefix Codes and Nearby Long Distance Prefix Codes fields. If the prefix does not appear in either list, then Dial Plan cannot determine whether the number is local or nearby long distance. If the site has fixed format telephone numbers and the Default is Nearby Long Distance field is set to "Y," then Dial Plan considers the number nearby long distance. Dial Plan inserts the City/Area Code and Long Distance Access Code field values in the Dial String. If the site has fixed format telephone numbers and the Default is Nearby Long Distance field is set to "N," then Dial Plan considers the number local. It does not include the City/Area Code or Long Distance Access Code field values in the Dial String. This field defaults to "N."

Maintaining City/Area Codes and Prefixes

If you have an area code split or a new prefix in your area, you may need to make changes to Customer Assist. You can do this using Dial Plan Administration.

Use the following steps to make changes to Customer Assist:

1. Start at the Application Specific Settings menu and do one of the following:
   - Select Defaults

     You can change the area code in the default settings. Then, when you select Customer Assist, you need only press DEFAULTS F4 to apply the default settings to it. This method works only when you want to return all field values to the default settings (See Chapter B, ''Switch Configuration'', for the default settings.)
   - Select Customer Assist

     You can adjust Customer Assist using this menu option.

To Change an Area Codes

Use the following steps to change an area code:

1. Enter the new area code into the `Local City/Area Code` field.
2. Close the form.

   Your changes are saved automatically.

To Add, Delete, or Change a Prefix

The prefix lists apply to two types of telephone number formats: Fixed and Variable. Depending on the type of telephone number format your site uses, do one of the following:

- Fixed length — See ''Fixed Length City/Area Code and Local Subscriber Number''.
- Variable length — See ''Variable Length City/Area Codes and Local Subscriber Number''.

Fixed Length City/Area Code and Local Subscriber Number

The Application Specific Settings form enables you to maintain two local subscriber number prefix lists for prefixes within your area code. Dial Plan uses these lists to determine whether or not it must dial the long distance access code for a number within your local city/area code. Dial Plan checks to see whether the prefix of the telephone number passed by Customer Assist matches the prefixes that appear in either list. Prefixes are categorized as follows:

- Prefixes that require the long distance access code
- Prefixes that do not require the long distance access code

If the prefix does not appear in either list, Dial Plan checks the `Default to Nearby Long Distance` field to determine what type of call to make.

- If the field is set to "Y," Dial Plan uses long distance access for this number.
- If the field is set to "N," Dial Plan does not use long distance access for this number.

Add or Delete Prefixes or Change Default Setting

Use the following steps to add or delete prefixes, or change the `Default to Nearby Long Distance` field:

1. Start at the Application Specific Settings menu and select

   ```
   > Customer Assist
   ```

2. Press PAGE DOWN (PgDn).
3. Enter your changes.
4. Press CLOSE (F3).

   Dial Plan saves your changes automatically.

5. To exit Dial Plan, select `Exit` from the main menu.

   You return to the Application Package Administration.

Variable Length City/Area Codes and Local Subscriber Number

Dial Plan does not check the prefix lists for variable format telephone numbers. For variable format, answer the following question before setting the `Default is Nearby Long Distance` field:

- Do some numbers within your Local City/Area Code require long distance service?
  - — If no, then set the `Default is Nearby Long Distance` field to "N."
  - — If yes, then set the `Default is Nearby Long Distance` field to "Y."

Applying Default Settings

This option enables you to return the Customer Assist settings to the default settings. For example, you have changed the prefix lists. Use the following steps to apply the default settings to Customer Assist:

1. Start at the Application Specific Settings menu and select

```
> Customer Assist
```

   The system displays the Application Specific Settings Configuration Defaults form (Figure 3-1 and Figure 3-2).

   CAUTION:
   Do not proceed with the next step unless you want to change all the fields to the default settings.

2. Press DEFAULTS F4.
3. Close the form.

   Your changes are saved automatically.

Switch Specific Settings

This menu allows you to perform two types of administration:

- Pre and Post Codes that determine the pauses between the parts of the Dial String
- Format settings that determine the parts of the Dial String for Local, Nearby Long Distance, and Distant Long Distance numbers

Access Switch Specific Settings

Use the following steps to access the Switch Specific Settings screen:

1. Start at the Dial Plan Administration menu and select

```
> Switch Specific Settings
```

   The system displays the Switch Specific Settings (Figure 3-3).

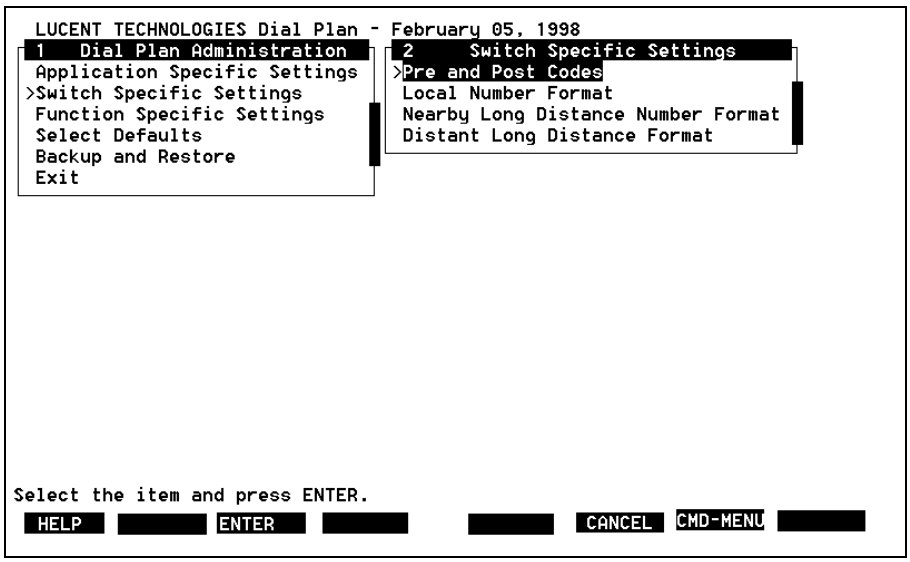


Figure 3-3. Switch Specific Settings screen

Pre and Post Codes

The Pre and Post Codes allow you to specify timing within the Dial String. Use the following steps to access the Pre and Post Codes screen:

1. Start at the Switch Specific Settings menu and select

```
> Pre and Post Codes
```

   The system displays the Pre and Post Codes screen (Figure 3-4 and Figure 3-5):

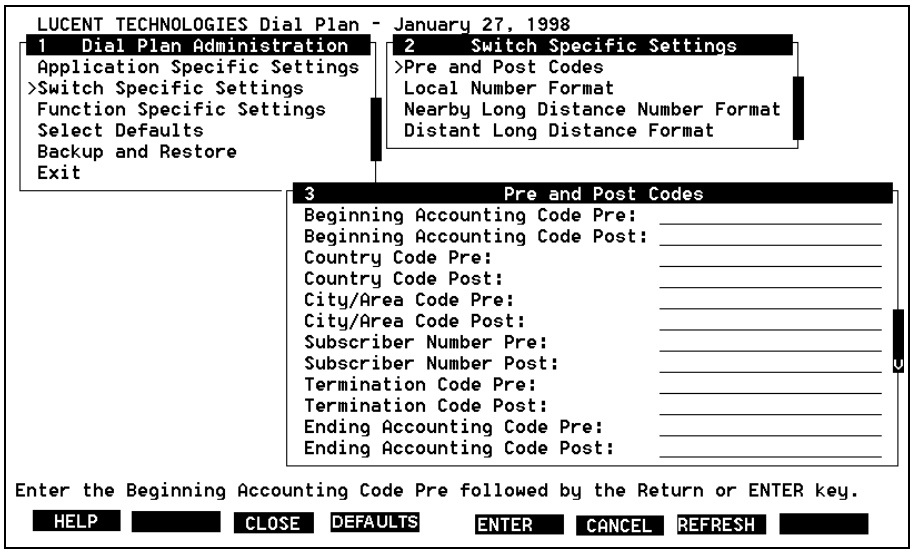


Figure 3-4. Pre and Post Codes Screen, screen 1

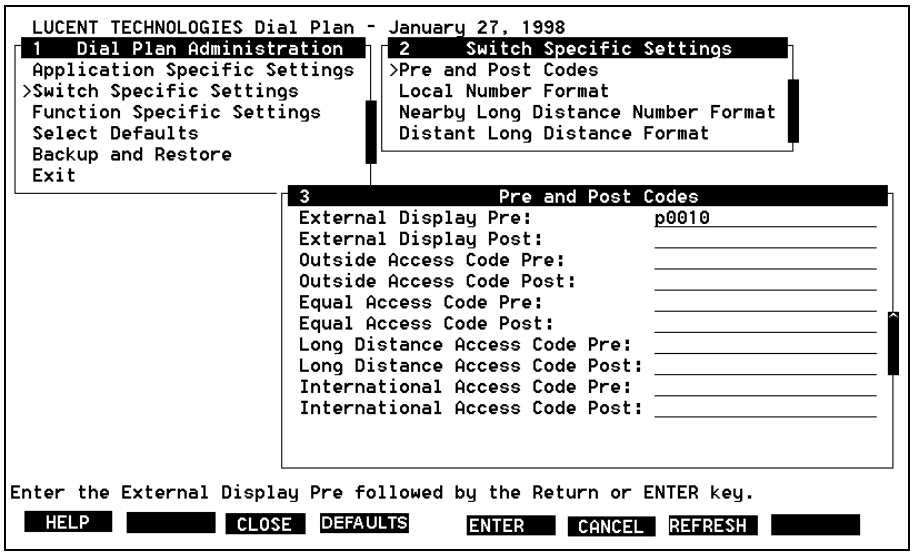


Figure 3-5. Pre and Post Codes, screen 2

Pre and Post Code Values

Each Pre and Post field specifies the pauses surrounding a given part of the Dial String. Table 3-2 shows the possible entries for the Pre and Post fields. Leave Pre and Post fields blank if Dial Plan should not enter a pause at that point.

Table 3-2. Field Values for Pre and Post Pause Code

Field Value	Constructing Value	Length of Pause
P	Pause	**P** is equal to one second
pxxxx	Replace **xxxx** with 0001 to 9999	**pxxxx** represents pause for xxxx seconds
Nxxxx	Replace **xxxx** with 0001 to 9999	**Nxxxx** represents pause for xxxx hundredths of a second

You can use several field values to come up with a specific amount of time. For example, **PPPp0020N0010P** means pause for 24.1 seconds.

Table 3-3 is designed to help you understand each field that appears in the Switch Specific Settings form. Use the field descriptions in conjunction with ‘‘Dial Plan Field Values’’ on page 3-20 to determine what to enter into each field.

Table 3-3. Field Descriptions for Pre and Post Codes

Field	Description
Beginning Accounting Code Pre	Inserts pause before Dial Plan dials the beginning accounting code.
Beginning Accounting Code Post	Inserts pause after Dial Plan dials the beginning accounting code.
Country Code Pre	Inserts a pause before Dial Plan dials the country code.
Country Code Post	Inserts a pause after Dial Plan dials the country code.
City/Area Code Pre	Inserts a pause before Dial Plan dials the city/area code.
City/Area Code Post	Inserts a pause after Dial Plan dials the city/area code.
Subscriber Number Pre	Inserts a pause before Dial Plan dials the subscriber number.
Subscriber Number Post	Inserts a pause after Dial Plan dials the subscriber number.
Termination Code Pre	Inserts a pause before Dial Plan dials the termination code.
Termination Code Post	Inserts a pause after Dial Plan dials the termination code.
Ending Accounting Code Pre	Pre inserts a pause before Dial Plan dials the ending accounting code.
Ending Accounting Code Post	Inserts a pause after Dial Plan dials the ending accounting code.
External Display Pre	Inserts a pause before Dial Plan dials the external display.
External Display Post	Inserts a pause after Dial Plan dials the external display.
Outside Access Code Pre	Inserts a pause before Dial Plan dials the outside access code.

Continued on next page

Table 3-3. Field Descriptions for Pre and Post Codes — *Continued*

Field	Description
Outside Access Code Post	Inserts a pause after Dial Plan dials the outside access code.
Equal Access Code Pre	Inserts a pause before Dial Plan dials the equal access code.
Equal Access Code Post	Inserts a pause after Dial Plan dials the equal access code.
Long Distance Access Code Pre	Inserts a pause before Dial Plan dials the long distance access code.
Long Distance Access Code Post	Inserts a pause after Dial Plan dials the long distance access code.
International Access Code Pre	Inserts a pause before Dial Plan dials the international access code.
International Access Code Post	Inserts a pause after Dial Plan dials the international access code.

Dial String Formats

Dial Plan allows you to specify the format of the Dial String for each type of call:

- Local Number Format
- Nearby Long Distance
- Distant Long Distance Format

Access Dial String Formats

Use the following steps to access the Dial String formats:

1. Start at the Switch Specific Settings menu and do one of the following:
   - Select Local Number Format to instruct Dial Plan what to include in the Dial String for this type of number
   - Select Nearby Long Distance Number Format to instruct Dial Plan what to include in the Dial String for this type of number
   - Select Distant Long Distance Format to instruct Dial Plan what to include in the Dial String for this type of number

   If you select Local Number Format, the system displays the Local Number Format screen (Figure 3-6):

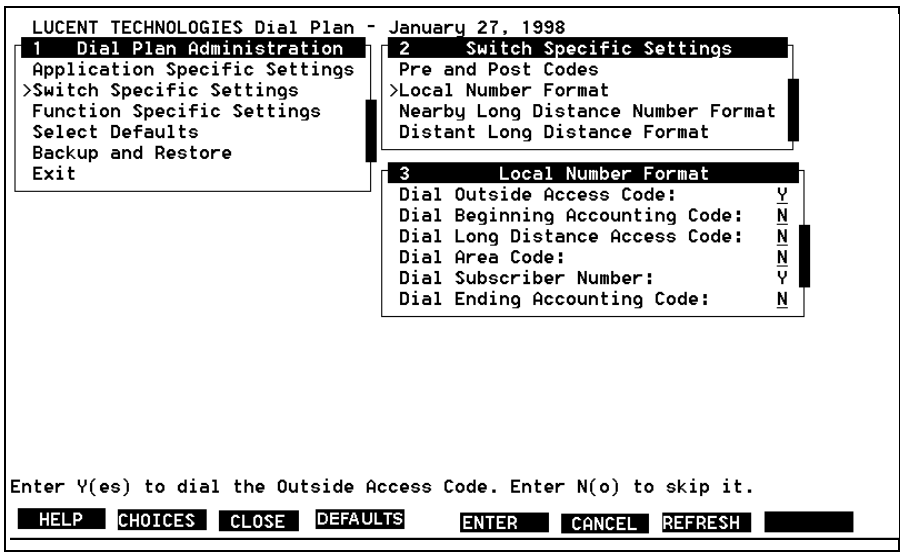


Figure 3-6. Local Number Format screen

Dial Plan uses your entries to determine the telephone number parts it should dial for each type of call. For example, you can configure Dial Plan so that it includes an accounting code whenever it dials a nearby long distance telephone number.

Field Descriptions

The following table describes each field that appears in the three Switch Specific Settings forms. Use the field descriptions to determine what to enter into each field. The field descriptions are the same for Local, Nearby Long Distance, and Distant Long Distance formats.

Table 3-4. Field Description for Dial String Formats

Field	Description
Dial Outside Access Code	Determines whether or not Dial Plan includes the Outside Access Code field value in the Dial String. Enter "Y" or "N."
Dial Beginning Accounting Code	Determines whether or not Dial Plan includes the Beginning Accounting Code field value in the Dial String. Enter "Y" or "N."
Dial Long Distance Access Code	Determines whether or not Dial Plan includes the Long Distance Access Code field value in the Dial String. Enter "Y" or "N."
Dial Area Code	Determines whether or not Dial Plan includes the City/Area Code field value in the Dial String. Enter "Y" or "N."
Dial Subscriber Number	Determines whether or not Dial Plan includes the subscriber number in the Dial String. This field is always set to "Y."
Dial Ending Accounting Code	Determines whether or not Dial Plan includes the Ending Accounting Code field value in the Dial String. Enter "Y" or "N."

Function Specific Settings

Use the Function Specific Settings screen to configure Dial Plan so that it can perform six types of telephone actions:

- Conference Actions
- Drop Actions
- Intelligent Actions
- Make Call Actions
- Message Waiting Lights
- Transfer Actions

Dial Plan Field Values

In order to perform telephone actions, Dial Plan must pass signals and special instructions to the switch. You must enter these signals and instructions for each telephone action that Dial Plan performs.

Table 3-5 shows the symbol for each signal and instruction. Some switches may require more than one symbol in order to perform a given telephone action. The sequence of the signals and the set of instructions differs for each switch. Appendix B, ‘‘Switch Configuration’’, describes the default settings for each type of switch.

Table 3-5. Dial Plan Field Values

Field Values	Explanation
0-9, #, *	Dial the digits.
D	Wait for dial tone or stutter dial tone; any other call progress reports an error.
F	Flash hook, wait for dial tone.
f	Flash hook.
Wxxxx	W means pause. xxxx means number of rings. Appropriate xxxx values are 0001 to 9999. The xxxx value must consist of four digits. For example, W0005 means wait for call progress tones for 5 rings.

Continued on next page

Table 3-5. Dial Plan Field Values — *Continued*

Field Values	Explanation
wnnnn	Wait n rings for answer, or no answer, (four digits are required, nnnn must be 0001 to 9999).
P	Pause for 1 second.
pnnnn	Pause for nnnn seconds, (four digits are required, nnnn must be 0001 to 9999).
Nnnnn	N means pause. nnnn means for hundredths of a second. Appropriate nnnn values are 0001 to 9999. The nnnn value must consist of four digits. For example, N0050 means a delay of.5 second.
h	Hang up.
O	Go off hook, wait for dial tone, and dial the next sequence of 0-9, #, *.
o	Go off hook, and dial the next sequence of 0-9, #, *.

Access Function Specific Settings

Use the following steps to access the Function Specific Settings screen:

1. Start at the Dial Plan Administration menu and select

```
> Function Specific Settings
```

The system displays the Function Specific Settings screen (Figure 3-7):

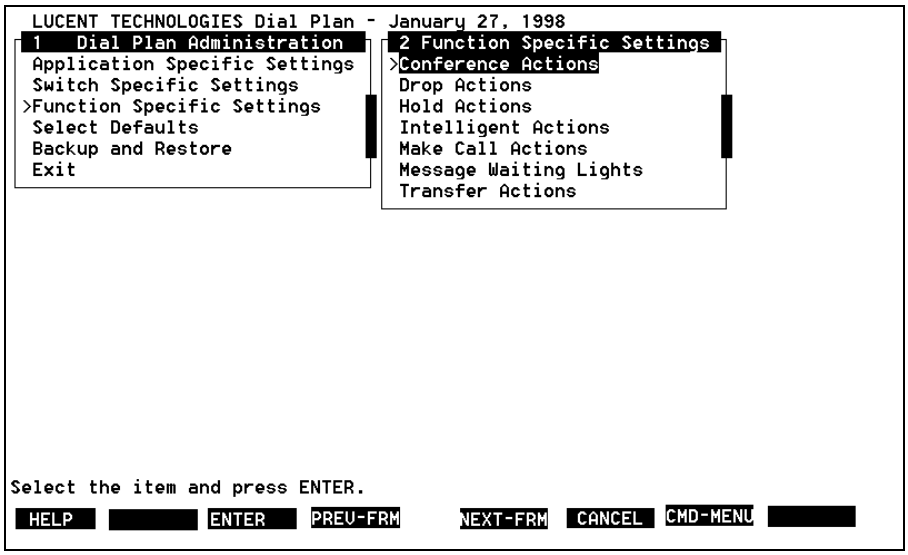


Figure 3-7. Function Specific Settings screen

Conference Actions

Customer Assist uses the Conference Action when it has a connection to one party and wants to add a second party to the call. This creates a conference call that includes the AUDIX port, the first party, and the second party.

Access Conference Actions

Use the following steps to access the Conference Actions screen:

1. Start at the Function Specific Settings menu and select

```
> Conference Actions
```

   The system displays the Conference Actions Configuration screen (Figure 3-8):

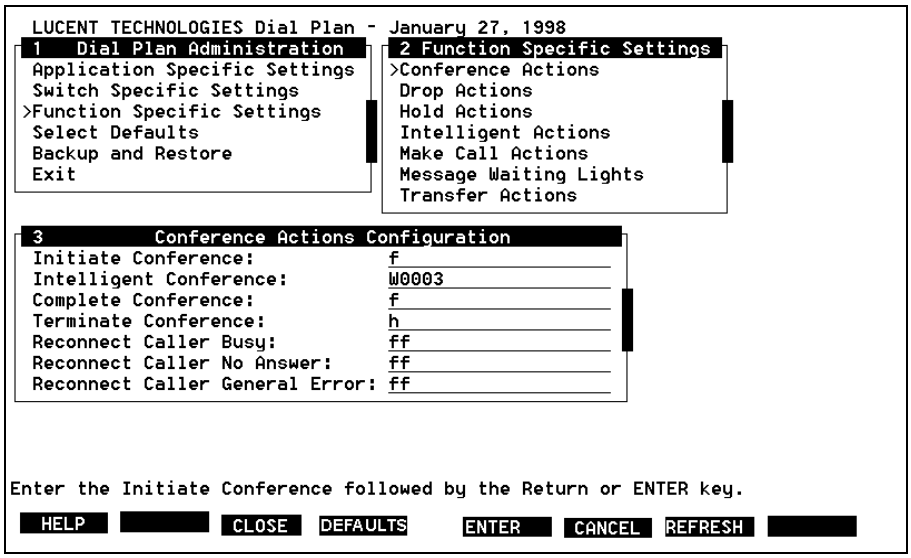


Figure 3-8. Conference Actions Configuration screen

How Conference Actions Work

Dial Plan executes the Conference Action as follows:

- Places the first party on hold through the `Initiate Conference` command.
- For analog ports, Dial Plan waits for tones from the switch.
- Dial Plan then outpulses the Dial String. (See ‘‘Dial String Construction’’ on page 1-8 for more information.)
- If the `Intelligent Conference` field is blank, Dial Plan executes the `Complete Conference` field value immediately after dialing the telephone number. This takes the first party off hold so that all three parties are active members of the call. In this case Dial Plan dials in a blind mode. It does not attempt to detect the result of the dialing.
- If the `Intelligent Conference` field has an entry, Dial Plan waits the specified number of ring cycles for the result of the dialing before accepting the status as "ring, no answer". In this case Dial Plan dials in an intelligent mode, that is, it detects the result of the call.
  - — If the result is a busy signal, Dial Plan classifies the call as busy and executes the `Reconnect Caller Busy` command. This drops the dialing attempt and takes the first party off hold. The first party becomes an active member of the call again.

— If ringing occurs for the number of cycles specified in the `Intelligent Conference` field without answer, Dial Plan classifies the call as "ring, no answer" and executes the `Reconnect Caller No Answer` command. This drops the dialing attempt and takes the first party off hold. The first party becomes an active member of the call again.

— If the result of the call is any error tone, Dial Plan classifies the call as an error condition and executes the `Reconnect Caller General Error` command. This drops the dialing attempt and takes the first party off hold. The first party becomes an active member of the call again.

— If Dial Plan detects speech energy, it recognizes an answer condition and executes the `Complete Conference` command. It takes the first party off hold.

— If Customer Assist requires that Dial Plan drops from the conference call, then Dial Plan executes the `Terminate Conference` command. This drops the AUDIX port from the call. If at least one of the remaining call parties in a conference call is an internal number, then the current members of the conference remain connected after AUDIX drops from the conference.

Field Descriptions

The following table describes each field that appears in the Conference Actions screen. Use these descriptions in conjunction with Table 3-5 to determine what to enter into each field.

Table 3-6. Field Descriptions for Conference Actions

Field	Description
`Initiate Conference`	Enter the commands AUDIX must deliver to the switch to place the first party on hold. See Table 3-5.
`Intelligent Conference`	Enter the number of rings Dial Plan should wait for call progress tones when dialing a telephone number during a conference call. The command is entered as **Wnnnn**. See Table 3-5. If the field is left blank, the conference is blind. Dial Plan will not check for call progress tones.
`Complete Conference`	Enter the commands AUDIX must deliver to the switch to take the first party off hold. See Table 3-5.

Continued on next page

Table 3-6. Field Descriptions for Conference Actions — *Continued*

Field	Description
`Terminate Conference`	Enter the commands AUDIX must deliver to the switch in order to drop from the conference call. See Table 3-5.
`Reconnect Caller Busy`	Enter the commands AUDIX must deliver to the switch in order to terminate the call to the second party because of a busy signal. This command takes the first party off hold. The first party becomes an active member of the call again. See Table 3-5.
`Reconnect Caller No Answer`	Enter the commands AUDIX must deliver to the switch in order to terminate the call to the called party when the called party does not answer within the specified number of ring cycles. This command takes the first party off hold. The first party becomes an active member of the call again. See Table 3-5.
`Reconnect Caller General Error`	Enter the commands AUDIX must deliver to the switch in order to terminate the call to the second party because of an error tone. This command takes the first party off hold. The first party becomes an active member of the call again. See Table 3-5.

Drop Actions

Customer Assist uses the Drop Action to drop the last party added to the conference call. If the AUDIX port is connected to only one party, see your switch manual to find out what happens to that party.

Access Drop Actions

Use the following steps to access the Drop Actions screen:

1. Start at the Function Specific Settings menu and select

```
> Drop Actions
```

The system displays the Drop Actions Configuration screen (Figure 3-7):

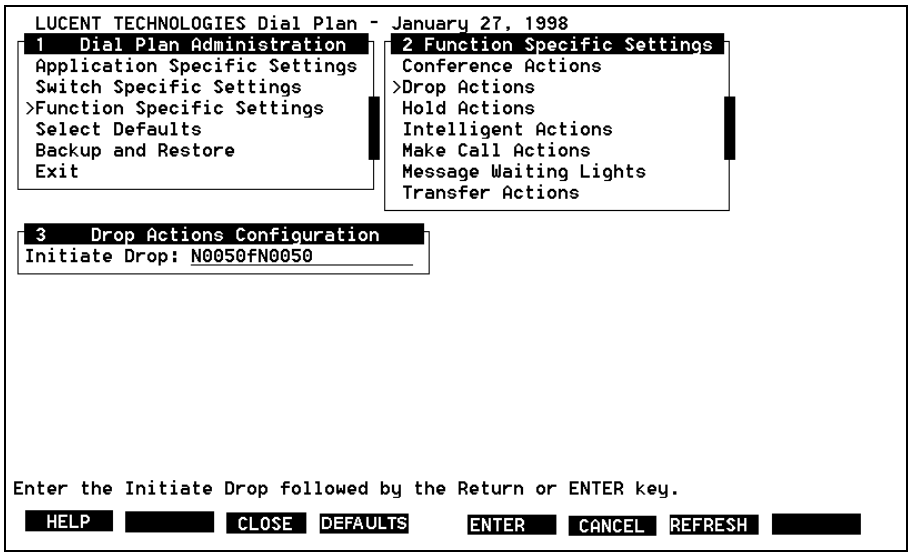


Figure 3-9. Drop Actions Configuration screen

How Drop Actions Work

Dial Plan executes the Drop Action as follows:

- Executes the `Initiate Drop` command to drop the last party added to the conference.

Field Descriptions

Table 3-7 describes each field that appears in the Drop Actions screen. Use these descriptions in conjunction with Table 3-5 to determine what to enter into each field.

Table 3-7. Field Descriptions for Drop Actions

Field	Description
`Initiate Drop`	Enter the command AUDIX must deliver to the switch to drop the last caller from conference. Include 1/2 second pauses before and after the flash to insure the switch recognizes the command. The command is entered as NxxxxfNxxxx. See Table 3-5.

Hold Actions

The voice platform uses the Hold Action to:

- Put the caller connected to the port on hold. A conference call can only connect three parties (including AUDIX). If you attempt to add another party to a three-party conference call, AUDIX drops the last party added to the conference call.
- Retrieve a caller from hold. It returns the party on hold to an active state.

Access Hold Actions

Use the following steps to access the Hold Actions screen:

1. Start at the Function Specific Settings menu and select

```
> Hold Actions
```

   The system displays the Hold Actions Configuration screen (Figure 3-10):

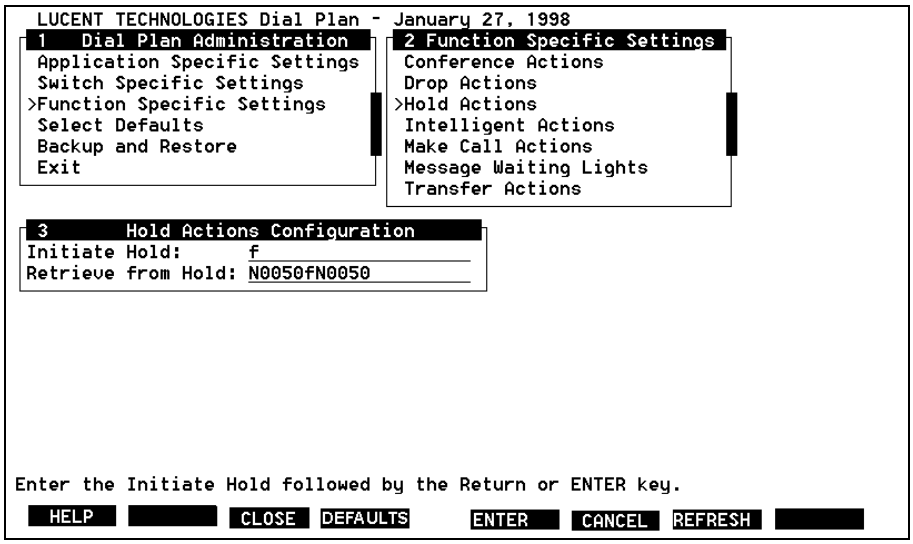


Figure 3-10. Hold Actions Configuration screen

How Hold Actions Work

Dial Plan executes the Hold Action as follows:

- Places a party on hold using the `Initiate Hold` command.
- Removes a party from hold using the `Retrieve from Hold` command. This makes the party an active participant in the call again.

Field Descriptions

The following table describes each field that appears in the Hold Actions screen. Use these descriptions in conjunction with Table 3-5 to determine what to enter into each field.

Table 3-8. Field Descriptions for Hold Actions

Field	Description
`Initiate Hold`	Enter the command(s) AUDIX must deliver to the switch to place a caller on hold. See Table 3-5.
`Retrieve from Hold`	Enter the command(s) AUDIX must deliver to the switch to retrieve a caller from hold. See Table 3-5.

Intelligent Actions

Customer Assist uses the Intelligent Action to detect the result of a call placed by Dial Plan. The Intelligent Action returns the result to Customer Assist. This action applies to conference calls. It must detect speech energy before it connects the original party to the called party.

Access Intelligent Actions

Use the following steps to access the Intelligent Actions screen:

1. Start at the Function Specific Settings menu and select

```
> Intelligent Actions
```

The system displays the Intelligent Actions screen (Figure 3-11):

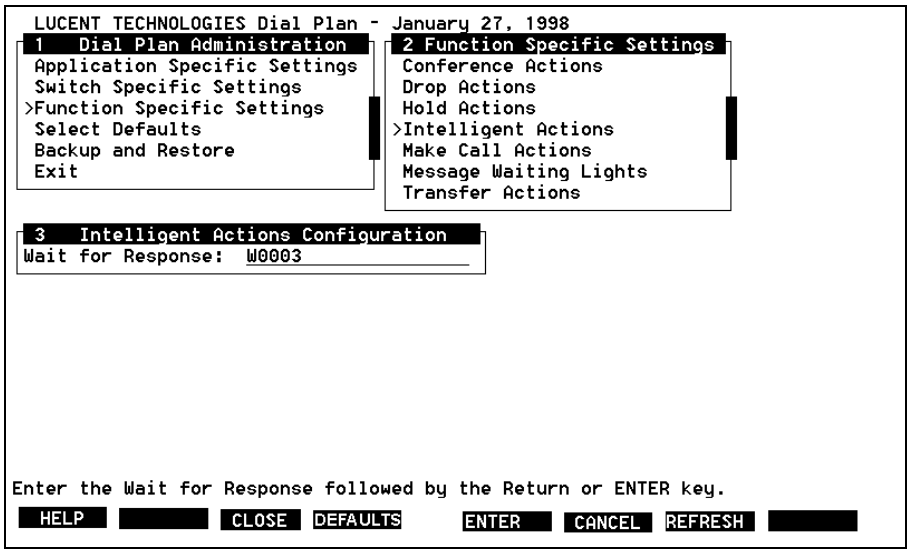


Figure 3-11. Intelligent Actions Configuration screen

How Intelligent Actions Work

Dial Plan executes the Intelligent Action as follows:

- The Intelligent Action begins to operate as soon as dialing is finished.
- If the `Wait for Response` field is blank, Dial Plan acts in a blind mode. It does not check for speech energy or call progress tones and returns a successful result immediately, regardless of the outcome of the dialing.
- If the `Wait for Response` field has an entry, Dial Plan detects and returns one of the following results (See "Conference Actions" on page 3-22 for more information):
  - — busy, if it detects busy tone
  - — error, if it detects any sort of error tone
  - — "ring, no answer", if it detects ringing for the number of ring cycles specified in the `Wait for Response` field
  - — answer, if it detects speech energy before the number of ring cycles specified in the `Wait for Response` field elapse

Field Descriptions

Table 3-9 describes each field that appears in the Intelligent Actions screen. Use these descriptions in conjunction with Table 3-5 to determine what to enter into each field.

Table 3-9. Field Descriptions for Intelligent Actions

Field	Description
`Wait for Response`	Enter the number of rings Dial Plan should wait for speech energy and call progress tones. The command is entered as Wxxxx. See Table 3-5.

Make Call Actions

Customer Assist uses the Make Call Action to dial a number. It provides the number of the party to dial and instructs Dial Plan whether or not to determine the result of the dialing, that is, whether the dialing is blind or intelligent.

During a Make Call, Customer Assist can pass Dial Plan information digits, or call information, that Dial Plan enters immediately after dialing the extension number. DEFINITY can deliver caller information to the agent's display or make it available for screen pop solutions. For such situations, Customer Assist also provides Dial Plan with the call information digits. Dial Plan dials these digits immediately after entering the party's extension number.

Access Make Call Actions

Use the following steps to access the Make Call Actions screen:

1. Start at the Function Specific Settings menu and select

```
> Make Call Actions
```

The system displays the Make Call Configuration screen (Figure 3-12):

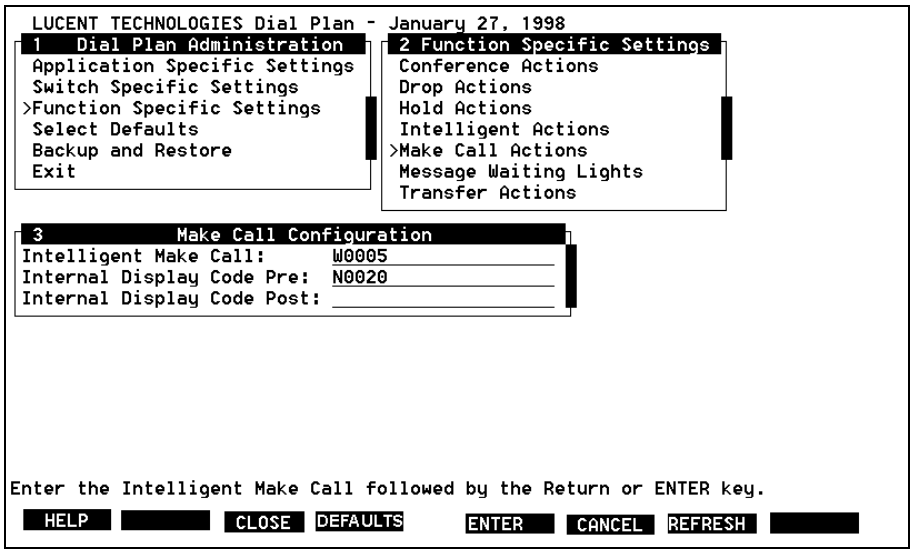


Figure 3-12. Make Call Configuration screen

How Make Call Actions Work

Dial Plan executes the Make Call Action as follows:

- Dial Plan dials the adjusted Dial String. (See "Dial String Construction" on page 1-8 for more information.) If Customer Assist provides call information digits, Dial Plan dials these digits. The `Internal Display Code Pre` and `Internal Display Code Post` fields determine whether Dial Plan inserts a pause between the adjusted Dial String and these digits.
- If the `Intelligent Make Call` field is blank, Dial Plan acts in a blind mode. It does not check for speech energy or call progress tones and returns a successful result immediately, regardless of the outcome of the dialing.

- If the `Intelligent Make Call` field has an entry, Dial Plan detects and returns one of the following results (See ‘‘Conference Actions’’ on page 3-22 for more information):
  - — busy, if it detects busy tone
  - — error, if it detects any sort of error tone
  - — "ring, no answer", if it detects ringing for the number of ring cycles specified in the `Intelligent Make Call` field
  - — answer, if it detects speech energy before the number of ring cycles specified in the `Intelligent Make Call` field elapse

Field Descriptions

Figure 3-10 describes each field that appears in the Make Call Actions screen. Use these descriptions in conjunction with Table 3-5 to determine what to enter into each field.

Table 3-10. Field Descriptions for Make Call Actions

Field	Description
`Intelligent Make Call`	Enter the number of rings Dial Plan should wait for speech energy and call progress tones. The command is entered as Wxxxx. See Table 3-5. If the field is left blank, then the Make Call is blind. Dial Plan will not check for speech energy or call progress tones.
`Internal Display Code Pre`	Enter the length of the pause Dial Plan must insert into the Dial String before the Internal Display Code, if any. See Table 3-5.
`Internal Display Code Post`	Enter the length of the pause Dial Plan must insert into the Dial String after the Internal Display Code, if any. See Table 3-5.

Message Waiting Lights

Customer Assist uses the Message Waiting Lights Action to illuminate and extinguish message waiting lights. Customer Assist provides the extension number of the message waiting light and tells the Message Waiting Lights Action whether to illuminate or extinguish the message waiting light.

Access Message Waiting Lights Actions

Use the following steps to access the Message Waiting Lights Actions screen:

1. Start at the Function Specific Settings menu and select

```
> Message Waiting Lights
```

   The system displays the Message Waiting Lights Configuration screen (Figure 3-13):

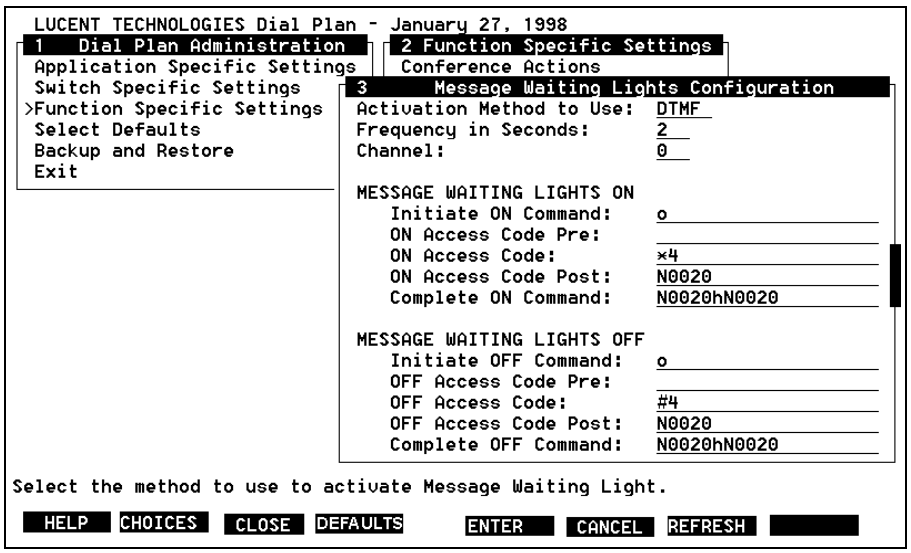


Figure 3-13. Message Waiting Lights Configuration screen

How Message Waiting Lights Actions Work

Dial Plan executes the Message Waiting Light Action as follows:

- Uses the method specified in the `Activation Method to Use` field to illuminate and extinguish method waiting lights. At present, Dial Plan supports one method:
  - — Inband DTMF tone signaling through an AUDIX port
- Dial Plan uses the port specified in the `Channel` field for the signaling activity. If Customer Assist requires a change in message waiting light condition, Dial Plan waits the number of seconds specified in the `Frequency of Seconds` field, as follows:
  - — If another request is not made before the number of seconds expires, Dial Plan makes the change in the message waiting light condition.
  - — If another request is made before the number of seconds expires, Dial Plan waits the number of seconds specified in the `Frequency of Seconds` field to see whether an additional request is made. It continues waiting until the number of `Frequency of Seconds` passes without a request, and then changes the condition.
- Dial Plan illuminates a message waiting light as follows:
  - — Executes the `Initiate ON Command` command to start the message waiting light calling activity on the port. In most cases, this activity is a simple off hook action.
  - — Dial Plan pauses for the `ON Access Code Pre` field interval and then dials the `ON Access Code` field value. It pauses for the `ON Access Code Post` field interval and then dials the extension for the message waiting light.
  - — Finally, Dial Plan executes the `Complete ON Command` field commands. This completes the activity.
- To extinguish message waiting lights, Dial Plan uses a method similar to that for illumination. However, to extinguish message waiting lights, Dial Plan uses the corresponding OFF field values.

Field Descriptions

Table 3-11 describes each field that appears in the Message Waiting Lights Configuration screen. Use these descriptions in conjunction with Table 3-5 to determine what to enter into each field.

Table 3-11. Field Descriptions for Message Waiting Lights Actions

Field	Description
Activation Method to Use	Enter the method Dial Plan should use to turn on Message Waiting Lights. Dial Plan currently supports one method: DTMF uses inband signaling Feature Access Codes to inform the switch to turn the Message Waiting Lights on and off. Dial Plan uses the port specified in the Channel field to inform the switch of the action it wants to take.
Frequency in Seconds	Enter the number of seconds Dial Plan should pause before sending a request to illuminate or extinguish a message waiting light.
Channel	Enter the number of the port the system uses to turn message lights on or off. If this field is blank, you will not be able to light or extinguish Message Waiting Lights.
MESSAGE WAITING LIGHTS ON	This option tells Dial Plan how to turn on Message Waiting Lights.
Initiate ON Command	Enter the command AUDIX must pass to the switch to start Message Waiting Light activity. This command takes AUDIX off hook. See Table 3-5.
ON Access Code Pre	Enter the number of seconds Dial Plan must pause before dialing the Access Code, if required by the switch. See Table 3-5.
ON Access Code	Enter the touch-tone code specified on the switch that allows you to turn on Message Waiting Lights.
ON Access Code Post	Enter the number of seconds Dial Plan must pause after dialing the Access Code, if required by the switch. See Table 3-5.

Continued on next page

Table 3-11. Field Descriptions for Message Waiting Lights Actions — *Continued*

Field	Description
Complete ON Command	Enter the command AUDIX must pass to the switch to complete the Message Waiting Lights On Action.
MESSAGE WAITING LIGHTS OFF	This option tells Dial Plan how to turn off the Message Waiting Lights.
Initiate OFF Command	Enter the command Dial Plan must pass to instruct AUDIX to go off hook.
OFF Access Code Pre	Enter the number of seconds Dial Plan must pause before dialing the Access Code, if required by the switch. See Table 3-5.
OFF Access Code	Enter the touch-tone code specified on the switch that allows you to turn off Message Waiting Lights.
OFF Access Code Post	Enter the number of seconds Dial Plan must pause after dialing the Access Code, if required by the switch. See Table 3-5.
Complete OFF Command	Enter the command AUDIX must pass the switch in order to complete the Message Waiting Lights Off Action.

Transfer Actions

Customer Assist uses the Transfer Action to transfer a call. Customer Assist provides the transfer number. It then determines whether the Transfer Action should determine the result of the dialing, that is, whether the dialing is blind or intelligent.

Access Transfer Actions

Use the following steps to access the Transfer Actions screen:

1. Start at the Function Specific Settings menu and select

```
> Transfer Actions
```

   The system displays the Transfer Actions Configuration screen (Figure 3-14):

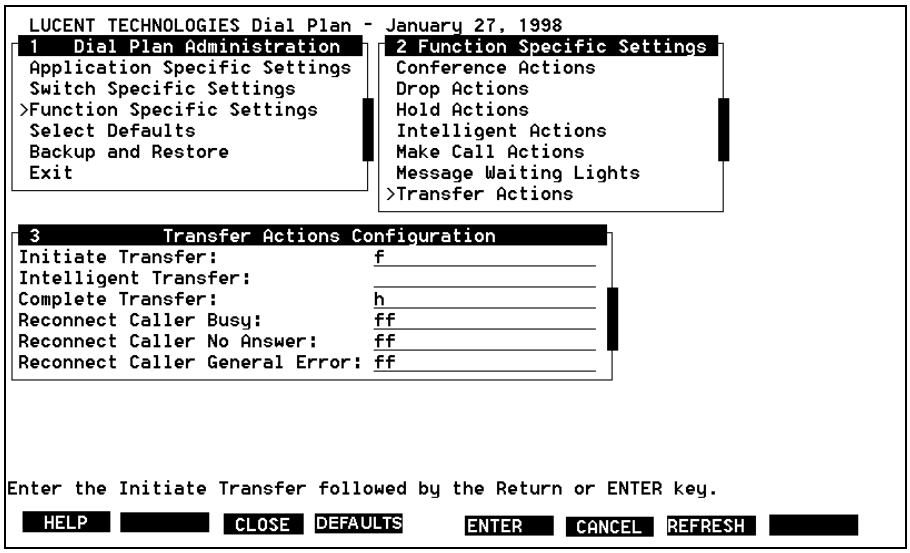


Figure 3-14. Transfer Actions Configuration screen

How Transfer Actions Work

Dial Plan executes the Transfer Action as follows:

- Places the original party on hold through the `Initiate Transfer` command.
- For analog ports, Dial Plan waits for tone from the switch.
- Dial Plan then outpulses the Dial String number. (See “Dial String Construction” on page 1-8 for more information.)

- If the `Intelligent Transfer` field is blank, Dial Plan executes the `Complete Transfer` command immediately after dialing. This drops the AUDIX port from the call and connects the first party to the new party. When the field is left blank, Dial Plan acts in a blind mode. It does not check for speech energy or call progress tones. It returns a successful result immediately, regardless of the outcome of the dialing.
- If the `Intelligent Transfer` field has an entry, Dial Plan waits the specified number of ring cycles before accepting the status as "ring, no answer". When the field contains an entry, Dial Plan acts in an intelligent mode. It detects the result of the dialing.
  - — If the result is busy, then Dial Plan executes the `Reconnect Caller Busy` command. This drops the dialing attempt and takes the first party off hold. The first party becomes an active member of the call again.
  - — If ringing occurs for the number of cycles specified in the `Intelligent Transfer` field without answer, then Dial Plan recognizes a "ring, no answer" condition and execute the `Reconnect Caller No Answer` command, to drop the dialing attempt and take the first party off hold. The first party becomes an active member of the call again.
  - — If the result is error tone, then Dial Plan executes the `Reconnect Caller General Error` command, to drop the dialing attempt and take the first party off hold. The first party becomes an active member of the call again.
  - — If Dial Plan detects speech energy, then it recognizes an answer condition and executes the `Complete Transfer` command to connect the original party on the call to the new party. It then drops the AUDIX port from the call.

Field Descriptions

Table 3-12 describes each field that appears in the Transfer Actions screen. Use these descriptions in conjunction with Table 3-5 on page 3-20 to determine what to enter into each field.

Table 3-12. Field Descriptions for Transfer Actions

Field	Description
`Initiate Transfer`	Enter the command AUDIX must pass to the switch in order to put the first party on hold. See Table 3-5.

Continued on next page

Table 3-12. Field Descriptions for Transfer Actions — *Continued*

Field	Description
`Intelligent Transfer`	Enter the number of ring cycles Dial Plan should wait for speech energy before returning the result of "ring, no answer" to the application. The command is entered as Wxxxx. See Table 3-5. If this field does not contain a value, then Dial Plan dials in a blind mode.
`Complete Transfer`	Enter the command AUDIX must pass to the switch when the call is considered a success. This command connects the first party to the second party. It then drops the AUDIX port from the call. See Table 3-5.
`Reconnect Caller Busy`	Enter the command AUDIX must pass to the switch to drop the dialing attempt because Dial Plan reaches a busy signal. This command takes the first party off hold. The first party becomes an active member of the call again. See Table 3-5
`Reconnect Caller No Answer`	Enter the command AUDIX must pass to the switch to drop the dialing attempt because Dial Plan does not hear speech energy within the specified number of rings. This command drops the dialing attempt and takes the first party off hold. The first party becomes an active member of the call again. See Table 3-5.
`Reconnect Caller General Error`	Enter the command AUDIX must pass to the switch to drop the dialing attempt because Dial Plan detects an error tone. This command drops the dialing attempt and takes the first party off hold. The first party becomes an active member of the call again. See Table 3-5.

Select Defaults

This option allows you to set one of the Default Package(s) installed on your system as the default settings. Once you have selected default settings, you can apply them to your application, instead of having to administer the application separately. See “Applying Default Settings” on page 12. for more information. This option also allows you to mark an application you want to return to the default settings.

Access Select Defaults

Use the following steps to access the Select Defaults screen.

1. Start at the Dial Plan Administration and select

```
> Select Defaults
```

The system displays the Select Application screen (Figure 3-15):

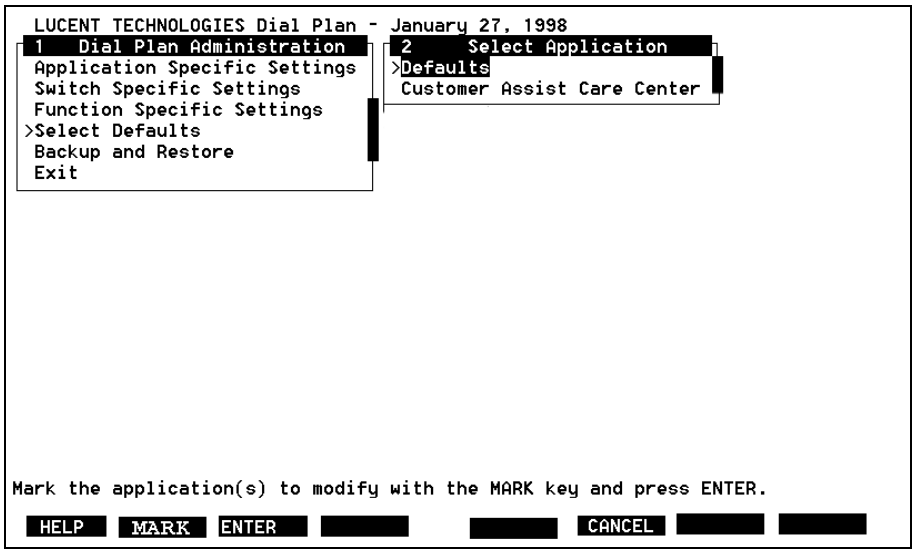


Figure 3-15. Select Application screen

Modify Default Settings

Use the following steps to select the Dial Plan default settings and/or apply the default settings to the application:

1. Start at the Select Defaults screen and do one of the following:

   CAUTION:
   Make sure that current settings in the marked application are not needed before overwriting them.

   - If you want to change the Dial Plan default settings, highlight Defaults and press MARK (F2).
   - If you want to apply the Dial Plan default settings to an individual application, highlight that application and press MARK (F2).

2. When you have marked each application you want to administer, press (ENTER).
3. Select the Dial Plan default settings.

   NOTE:
   Your options depend on what default packages are installed on your system.

4. Press (ENTER).
5. Press CONT (F3) to accept the new settings. Press CANCEL (F6) to abort.

Backup and Restore

Backup and Restore allows you to save the Dial Plan configuration to a floppy disk or restore the Dial Plan configuration to your system.

NOTE:
Backup the Dial Plan configuration whenever you make changes as a disaster recovery precaution.

Access Backup and Restore

Use the following steps to access the Backup and Restore screen.

1. Start at the Dial Plan Administration and select

```
> Backup and Restore
```

The system displays the Backup/Restore Dial Plan Configuration screen (Figure 3-16):

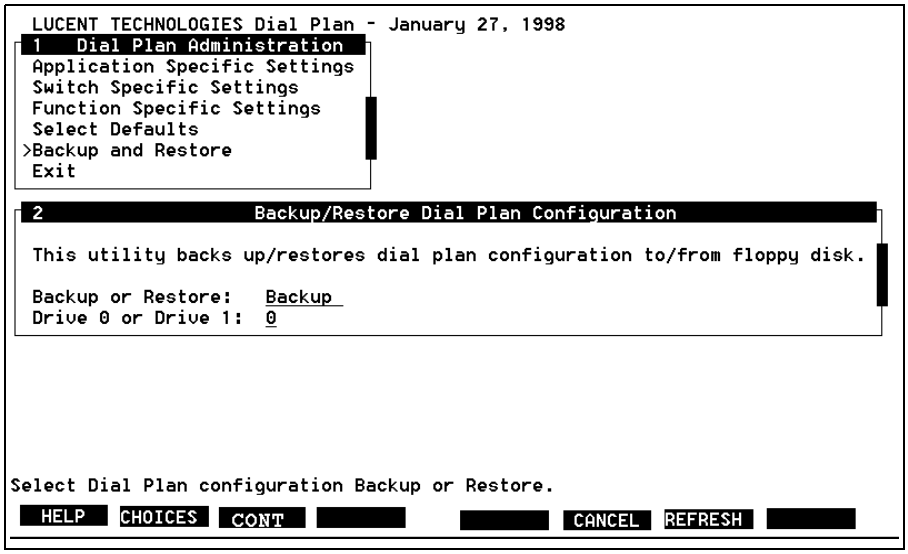


Figure 3-16. Backup/Restore Dial Plan Configuration screen

Field Descriptions

Table 3-13 describes each field that appears in the Backup and Restore screen. Use these descriptions in order to determine what to enter into each field.

Table 3-13. Field Descriptions for Backup and Restore

Field	Description
Backup or Restore	Enter **Backup** to save the Dial Plan configuration to a floppy disk. Enter **Restore** to transfer the Dial Plan configuration from a floppy disk to your hard drive.
Drive 0 or Drive 1	Enter either 0 or 1 to select a disk drive.

Summary

This chapter provides an overview of administering Dial Plan. The following chapters are technical in nature. You do not need to read them if your duties do not extend beyond system administration.

- See Chapter 4, ‘‘Release Notes’’, for basic information about the current version of Dial Plan.
- See Chapter 7, ‘‘Troubleshooting’’, for information on detecting and solving problems.

Release Notes

4

This chapter contains basic information about Dial Plan including the packages available.

Packages in Dial Plan

Dial Plan Version 1.3.1 comes with the following country and switch packages:

- Dial Plan Base Package
- Dial Plan Defaults for DEFINITY – US Package
- Dial Plan Defaults for DEFINITY – UK Package
- Dial Plan Defaults for DEFINITY – Japan Package

General Availability Release Version

The version number for the General Availability is Version 1.3.1. To check whether the correct build is on AUDIX, enter **pkginfo -l DPlnBase** at the UNIX command line and check the `Version` field.

Dial Plan Features

The following list describes the features of Dial Plan:

- You can access Dial Plan through AUDIX Administration
- New menu options give you more control over the Dial String. You can specify the fields that Dial Plan should include when dialing each type of number.
- Answer Supervision allows Dial Plan to determine whether or not the call attempt is successful.
- Backup and Restore allows you to save the configuration to a floppy disk, or transfer a saved configuration from a floppy disk to your hard drive.

Summary

Dial Plan has some new features and improvements to existing features. This chapter gives an overview of Dial Plan Version 1.3.1.

- See Chapter 5, ‘‘Installation and Removal’’, for information on installing and removing Dial Plan.

Installation and Removal

5

This chapter describes the procedures required to install and remove the packages that make up Dial Plan.

This chapter is organized as follows:

- Description of the software packages in Dial Plan
- Installation requirements
- Installing individual packages on the voice platform
- Removing individual packages from the voice platform

Dial Plan Packages

Dial Plan consists of one required package and three optional Default Setting packages. You must install the Dial Plan Base package. At least one optional Default Setting package must also be installed for Dial Plan to function properly.

NOTE:
Any number of Default Setting packages can be installed on the same system. However, only one will be in effect at any time.

Optional packages are available for the following switch and countries:

- DEFINITY default settings are available for US, UK and Japan

  NOTE:
  Dial Plan can be configured for other countries.

Installation Requirements

Installing Dial Plan requires specific hardware and software. Use the list of software and hardware requirements below.

Software Requirements

Dial Plan requires the following software packages:

- UnixWare 1.1.2
- INTUITY AUDIX 4.3
- Spanlink Base package
- PFS

Hardware Requirements

Dial Plan requires the following hardware:

- CPU
  - MAP/5P 133 Mhz CPU
- Analog Voice Card
  - IVP6
  - IVC6
  - NGTR

Tested Switches

Dial Plan operates with the following switches:

- DEFINITY ECS R5, G3V2, G3V3, G3V4

Hard Disk Space Requirements

Dial Plan requires less than 2 Mbytes of hard disk space for software and configuration files.

Installation Instructions

This section details the procedures needed to install Dial Plan. Follow the procedures closely to insure that the software is installed correctly.

NOTE:
Installing and removing Dial Plan should be done by a trained technician.

Install Spanlink Communications Base Package

Use the following procedure to install the Spanlink Communications Base package:

1. Log into the system as root
2. Enter **pkgadd -d diskette1** at the UNIX prompt.
3. Insert Spanlink Communications Base package into the floppy drive.

   ```
   Insert diskette into Floppy Drive 1.
   Type [go] when ready,
     or [q] to quit: (default: go)
   ```

4. Press ENTER to install or **q** to quit.

   The system responds:

   ```
   Installation in progress.  Do not remove the diskette.
   The following packages are available:
     1  SplkBase     SPANLINK COMMUNICATIONS Base
                     (pentium) 1.0
   Select package(s) you wish to process (or 'all' to
   process all packages). (default: all) [?,??,q]:
   ```

5. Press ENTER.

   The system responds:

   ```
   Copyright (c) 1997 SpanLink Communications
   All Rights Reserved.
   ## Processing package information.
   ## Processing system information.
   ## Verifying package dependencies.
   ## Verifying disk space requirements.

   Installing SPANLINK COMMUNICATIONS  Base as <SplkBase>
   ```

```
## Executing preinstall script.
## Installing part 1 of 1.
/usr/spanlink/bin/.exrc
/usr/spanlink/bin/.kshrc
...
/usr/spanlink/bin/where
/usr/spanlink/bin/zcat
[ verifying class <none> ]
Installation of SPANLINK COMMUNICATIONS  Base
(SplkBase) was
successful.

Insert diskette into FloppyDrive 1.
Type [go] when ready,
  or [q] to quit: (default: go)
```

6. Remove the disk from the floppy drive.

   The Spanlink Communications Base package is installed on your system. You must now install the Dial Plan Base package.

Install Dial Plan Base Package

Use the following procedure to install the Dial Plan Base Package:

1. Do one of the following:
   - If your system prompts you to enter a diskette, see Step 2.
   - If your system does not prompt you to enter a diskette, enter **pkgadd -d diskette1** at the UNIX prompt.
2. Insert Dial Plan Base Version 1.3.1 Disk 1 of 2 into the floppy drive.

   ```
   Insert diskette into Floppy Drive 1.
   Type [go] when ready,
     or [q] to quit: (default: go)
   ```

3. Press ENTER to install or **q** to quit.

   The system responds:

   ```
   Installation in progress.  Do not remove the diskette.
   The following packages are available:
   ```

```
  1  DPlnBase     SPANLINK COMMUNICATIONS  Dial Plan
Base

                  (pentium) 1.3.1

Select package(s) you wish to process (or 'all' to
process all packages). (default: all) [?,??,q]:
```

4. Press ENTER.

   The system responds:

```
PROCESSING:

Package: SPANLINK COMMUNICATIONS  Dial Plan  Base
(DPlnBase) from

<diskette1>.

SPANLINK COMMUNICATIONS  Dial Plan  Base

(pentium) 1.3.1

Using </> as the package base directory.

Copyright (c) 1997 SpanLink Communications

All Rights Reserved.

## Processing package information.

## Processing system information.

## Verifying package dependencies.


Installing SPANLINK COMMUNICATIONS  Dial Plan  Base as
<DPlnBase>...


READY TO PROCESS:

  Package: SPANLINK COMMUNICATIONS  Dial Plan  Base
(DPlnBase)

           diskette 2 of 2


Insert diskette 2 of 2 into Floppy Drive 1

Type [go] when ready,

  or [q] to quit: (default: go)
```

5. Remove Disk 1 from the floppy drive.
6. Insert Dial Plan Base Version 1.3.1 Disk 2 of 2 into the floppy drive.

7. Press ENTER.

```
## Installing part 2 of 2.

Installation of SPANLINK COMMUNICATIONS  Dial Plan
Base (DPlnBase) was successful.


Insert diskette into Floppy Drive 1.

Type [go] when ready,

  or [q] to quit: (default: go)
```

8. Remove Disk 2 from the floppy drive.

   The Dial Plan Base package is installed on your system. You must now install the Default Settings package.

Install Default Settings Package

Use the following procedure to install the Default Settings package:

1. Do one of the following:
   - If your system prompts you to enter a diskette, see Step 2.
   - If your system does not prompt you to enter a diskette, enter **pkgadd -d diskette1** at the UNIX prompt.
2. Insert the disk Dial Plan Defaults Disk 1 of 1 into floppy drive 1.

   Make sure you have the correct defaults settings for your switch. The following example shows the installation for US DEFINITY.
3. Press ENTER. The system responds:

```
Installation in progress.  Do not remove the diskette.

The following packages are available:

  1  DPlnDefUS     SPANLINK COMMUNICATIONS  Dial Plan
Defaults for US Definity

                   (i386) 1.3.1

Select package(s) you wish to process (or 'all' to
process all packages). (default: all) [?,??,q]: ?
```

4. Press ENTER to install. The system responds:

```
PROCESSING:

Package: SPANLINK COMMUNICATIONS  Dial Plan  Defaults
for US Definity

(DPlnDefUS) from <diskette1>.
```

```
SPANLINK COMMUNICATIONS  Dial Plan  Defaults for US
Definity

(i386) 1.3.1

Using </> as the package base directory.

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All Rights Reserved.

## Processing package information.

## Processing system information.

## Verifying package dependencies.

## Verifying disk space requirements.


Installing SPANLINK COMMUNICATIONS  Dial Plan  Defaults
for US Definity as <DPln

DefUS>


## Installing part 1 of 1.

/usr/spanlink/SplkDPlan/defaults/def_us_app.cfg

/usr/spanlink/SplkDPlan/defaults/def_us_switch.cfg

[ verifying class <none> ]

## Executing postinstall script.


Installation of SPANLINK COMMUNICATIONS  Dial Plan
Defaults for US

Definity (DPlnDefUS) was successful.


Insert diskette into Floppy Drive 1.

Type [go] when ready,

  or [q] to quit: (default: go)
```

5. Remove the Dial Plan Defaults Disk 1 of 1 from the floppy drive.
6. Enter **q** to end the installation.

Verifying Installation

Use the following procedure to verify installation:

1. Enter **pkginfo | more** at the UNIX command.
2. Press ENTER.

   System response (the following is an example of the output for US Definity):

   ```
   spanlink    DPlnBase       SPANLINK COMMUNICATIONS  Dial
   Plan  Base

   spanlink    DPlnDefUS      SPANLINK COMMUNICATIONS  Dial
   Plan  Defaults for <Switch>
   ```

3. Insure that the base package and switch default settings are installed.
4. Enter **pkginfo -l <pkgname>** at the UNIX prompt.
5. Insure that each installation was complete.

Removal

In order to remove the Dial Plan packages, you must remove the default settings packages first. Remove packages in the following order:

- Dial Plan Defaults
- Dial Plan Base
- Spanlink Base

NOTE:
Before removing Dial Plan, you must remove all packages that depend on Dial Plan.

Remove Defaults Settings Package

Use the following procedure to remove the Dial Plan Defaults package:

1. Enter **pkgrm <pkgname>** at the UNIX prompt.

   Replace <pkgname> with the appropriate Default Setting package name. The following example is for US DEFINITY.

2. Press ENTER.

   System response:

   ```
   The following package is currently installed:

      DPlnDefUS SPANLINK COMMUNICATIONS  Dial Plan
   Defaults for US Definity

                       (i386) 1.3.1
   ```

```
Do you want to remove this package [y,n,?,q]
Press y to remove the default settings
```

3. Enter **y** to remove the default settings.

```
## Removing installed package instance <DPlnDefUS>
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.
## Removing pathnames in <none> class
/usr/spanlink/SplkDPlan/defaults/def_us_switch.cfg
/usr/spanlink/SplkDPlan/defaults/def_us_app.cfg
## Updating system information.

Removal of <DPlnDefUS> was successful.
```

The package is removed.

Remove Dial Plan Base Package

Use the following procedure to remove the Dial Plan Base package:

1. Enter **pkgrm DPlnBase** at the UNIX prompt.
2. Press ENTER.

   The system responds:

```
The following package is currently installed:
DPlnBase SPANLINK COMMUNICATIONS  Dial Plan  Base(i386)
Version 1.3.1
Do you want to remove this package [y,n,?,q]
```

3. Enter **y** to remove the Dial Plan Base package.

   The system responds with a message similar to the following:

```
## Removing installed package instance <DPlnBase>
## Verifying package dependencies.
## Processing package information.
## Executing preremove script.
Removing the inittab entries...
Inittab successfully rebuilt
## Removing pathnames in <none> class
```

```
/usr/spanlink/SplkDPlan/logs...
.../usr/spanlink/SplkDPlan/admin
## Updating system information.
Removal of <DPlnBase> was successful.
```

The package is removed.

Remove Spanlink Communications Base Package

Use the following procedure to remove the Spanlink Communications Base package:

1. Enter **pkgrm splkbase** at the UNIX prompt.
2. Press ENTER.

   The system responds:

   ```
   The following package is currently installed:
      SplkBase        SPANLINK COMMUNICATIONS  Base
                      (pentium) 1.0
   Do you want to remove this package [y,n,?,q]
   ```

3. Enter **y** to remove the Spanlink Communications Base package.

   The system responds with a message similar to the following:

   ```
   ## Removing installed package instance <SplkBase>
   ## Verifying package dependencies.
   ## Processing package information.
   ## Removing pathnames in <none> class
   /usr/spanlink/tmp
   /usr/spanlink/regdir
   ...
   /usr/spanlink/bin
   /usr/spanlink <shared pathname not removed>
   ## Executing postremove script.
   ## Updating system information.
   Removal of <SplkBase> was successful.
   ```

   The package is removed.

Summary

Installing and removing Dial Plan should be done by a trained technician. Any configuration files you want to keep should be backed up, and then the old version should be removed before installing the new version of Dial Plan.

- See Chapter 6, ‘‘Technical Package Information’’, for information on the file and directory structure of Dial Plan to help troubleshoot.

Technical Package Information

6

This chapter contains technical information such as the directories and files used by Dial Plan. It is designed for personnel who need help troubleshooting Dial Plan after it is installed.

Directories

Table 6-1 shows the major directories used by Dial Plan.

Table 6-1. Directories Used by Dial Plan

Directories	Description
/usr/spanlink/SplkDPlan	Parent directory used by Dial Plan
/usr/spanlink/SplkDPlan/admin	Contains Dial Plan user interface administration
/usr/spanlink/SplkDPlan/bin	Contains Dial Plan executables
/usr/spanlink/SplkDPlan/config	Contains Dial Plan configuration files
/usr/spanlink/SplkDPlan/defaults	Contains Dial Plan default configuration files
/usr/spanlink/SplkDPlan/logs	Contains Dial Plan log files

Log and Debug Files

Log files contain information about significant events or errors that the Dial Plan DIP or script encountered. Debug files contain debugging information for the Dial Plan DIP and script. See Chapter 8, "Logs and Error Codes", for more information about logs.

Log File

The Dial Plan DIP generates a log file that is written to
/usr/spanlink/SplkDPlan/logs/SplkDPlanDip.log

Once this file reaches 300,000 bytes, it is moved to
/usr/spanlink/SplkDPlan/logs/Old/SplkDPlanDip.log

Debug File

The Dial Plan DIP generates a debug file that is written to
/usr/spanlink/SplkDPlan/logs/SplkDPlanDip.dbg

Once this file reaches 300,000 bytes, it is moved to
/usr/spanlink/SplkDPlan/logs/Old/SplkDPlanDip.dbg

Debugging Dial Plan

Use the following steps to turn on debugging for the Dial Plan DIP:

1. Enter **vi /usr/spanlink/SplkDPlan/config/SplkDPlanDip.cfg**
2. Search for a line containing `[Debug Log]`.
3. Change the `Level` entry from 0 to a higher number.

   Acceptable values are 0 to 5, where 0 turns off debugging and 5 is the highest debug level.
4. Save the file.
5. Kill the SplkDPlanDip so that it reads the new configuration.
   a. Enter **ps -ef | grep SplkDPlanDip** at the UNIX prompt.
   b. Look for the process id. The number in the 2nd column is the process id.
   c. To kill the DIP, enter **kill <process id>**.

      For example, if the process id is 534, enter **kill 534**

CAUTION:
Do not kill the DIP when calls are in progress. Otherwise, calls may result in errors.

Configuration Files

Configuration files determine how Dial Plan operates. There are three configuration files used by Dial Plan. These configuration files reside in **/usr/spanlink/SplkDPlan/config** directory. They are:

- **SplkDPlanDip.cfg** is the configuration file used by **SplkDPlanDip**. This configuration file is a combination of the configuration files located in **/usr/spanlink/SplkDPlan/config/AppFiles** and **Switch.cfg**.
- **SplkDPlanRegister.dat** is the list of installed applications registered with Dial Plan.
- **Switch.cfg** is the current default configuration for switch settings.

These configuration files should not be modified directly using an editor since any mistakes could corrupt the configuration and cause problems for Dial Plan. The only time you might modify them directly is if there are explicit instructions either in this document or after consultation with technical support personnel.

Scripts

There is one Script Builder script that comes with Dial Plan. It is called **sbPeriodic**. It is used to light and extinguish Message Waiting Lights on phones for some switches.

Prominent Programs

Prominent programs used by Dial Plan include:

- DPAdmin starts the administration of Dial Plan.
- **SplkDPlanDip** is a DIP that handles all the functions of Dial Plan.
- **SplkDPlanRegister** and **SplkDPlanRegConfig** register packages with Dial Plan.

Summary

In this chapter you learned in which directories you find files that may help you troubleshoot Dial Plan. You also learned how to turn on debugging.

- See Chapter 7, ‘‘Troubleshooting’’, for information on how to resolve problems you encounter.

Troubleshooting

7

This chapter describes the procedures to isolate, diagnose and correct possible problems encountered in Dial Plan. If a problem is not documented in this chapter, please contact the technical support personnel for help.

Isolating and Diagnosing the Problem

The most common problems in Dial Plan are due to configuration errors. Use the sections below to isolate and diagnose the different levels of configuration errors.

General System Checks

Use the following procedure to troubleshoot configuration errors:

1. Enter **who -r** at the UNIX prompt. The number that appears after `run-level` shows the current run level.
    a. Make sure the run level is 4. If the run level is not 4, enter **start_vs** to change it to 4.
2. Verify that all telephone lines to AUDIX are plugged in securely to voice cards. Secure any connections that are loose.
3. Enter **display card** at the UNIX prompt.
    a. Insure all voice cards and ports are in service. If they are not in service, put them in service using AUDIX Administration.
4. Enter **dfspace** at the UNIX prompt. Make sure the system is not out of space in any of the disk partition.

    NOTE:
    Dial Plan uses **/spanlink** partition.

5. Enter **sar** at the UNIX prompt.
6. Check the numbers under the `%idle` column to find out how busy the system is.

   The lower the number, the busier the system. If the system is too busy, it could account for slowness in response and possible time-outs.

General Dial Plan Checks

Use the following procedure to troubleshoot for configuration errors:

1. Enter **pkginfo -l DPlnBase** at the UNIX prompt.
   a. Verify that `completely installed` appears in the `STATUS` field. This insures the Dial Plan Base package was installed correctly. If it does not appear, remove the package and reinstall it.
   b. Make sure the correct version is installed.
2. Enter **pkginfo -l <pkgname>** at the UNIX prompt. Replace <pkgname> with the Default Settings package name.
   a. Check the STATUS field to insure the correct default package is installed. The default configuration must match the switch and country for the site.
3. Enter **ls /vs/trans** at the UNIX prompt.
   a. Verify that the Dial Plan script, **sbPeriodic.T** and **sbPeriodic.D**, exist in the **/vs/trans** directory. If they are not there, reinstall Dial Plan.
4. Enter **ps -ef | grep SplkDPlanDip** at the UNIX prompt.
   a. Check the process table to verify that the **SplkDPlanDip** is running.
   b. Verify that a Dial Plan configuration for Customer Assist exists.

      See Chapter 2, ‘‘Getting Started’’, to find out how to start the Dial Plan administration. Select Application Specific Settings. Select Defaults. Make sure the form has entries.

Isolating the Problem

The following topics address common problems encountered. In addition to the specific steps listed, look at the log file for **SplkDPlnDip** and trace the channel also.

Troubleshooting for Dial Plan Actions

Dial Plan dials telephone numbers when performing a Make Call, transfer, or conference. An action is the act of dialing. It consists of three parts:

- Preparations before dialing the number
- Dialing the number
- After dialing the number

Isolating Problems in Make Call

In a Make Call, Dial Plan goes off hook and dials the number. You should not encounter problems going off hook. In order to determine where the problem occurs, you must isolate the problem.

Use the following procedure to isolate the problem:

1. Enter **sysmon 1** at the UNIX prompt. The System Monitor program starts with a refresh rate of 1 second.
    a. If the telephone did not ring, try dialing that number from a telephone to see if the number is correct. If the line is an analog line, unplug it from the voice card and plug it into an analog telephone. Make the same call to determine whether some restriction on that line that prevents it from making a call.
    b. If it dialed the correct number, then the problem is in the preparations after dialing the number.
    c. If it is an intelligent Make Call, the `Voice Service` column on the System Monitor will have CCA while it is waiting to detect speech energy.
        i. When the telephone was answered, did Dial Plan detect the speech energy from the person answering that telephone immediately? The `Voice Service` column will not be set to CCA once the speech energy was recognized.
2. Did the telephone ring when you dialed the number? Determine whether the number that was dialed was correct.
3. Duplicate the call or events.

4. Watch the channel where the problem script runs. The number dialed appears in the `Dialed Digits` column.
    a. Verify that the number Dial Plan should dial appears in the `Dialed Digits` column. If not, or if no value appears, see "Troubleshooting for Dialing a Number" on page 7-7.

Isolating Problems in Transfers

Use the following procedure to determine the reason transfers fail:

1. Were you placed on hold at all?
    a. If not, then the problem is in the preparation before dialing the number.
    b. If you were placed on hold, did any value appear on the System Monitor?
        i. If values appeared, that means Dial Plan has successfully placed you on hold and attempted to dial the number.
        ii. If values do not appear, then Dial Plan either:
            — operates as though it was unsuccessful in placing you on hold so it did not attempt to dial the number, or:
            — operates as though you have been placed on hold but a value was not passed to it to dial.
2. Did the telephone ring when you dialed the number?
    a. If the telephone did not ring, try dialing that number from a telephone to see if the number is correct. If the line is an analog line, unplug it from the voice card and plug it into an analog telephone. Make the same call to determine whether some restriction on that line that prevents it from making a call.
    b. If it dialed the correct number, then the problem is in the preparations after dialing the number.
    c. If it is an intelligent transfer, the `Voice Service` column on the System Monitor will have CCA while it is waiting to detect speech energy.
        i. When the telephone was answered, did Dial Plan detect the speech energy from the person answering that telephone immediately? The `Voice Service` column will not be set to CCA once the speech energy was recognized.
3. Once the number has been dialed, Dial Plan will reconnect the caller back on to complete the transfer. Were you taken off hold and connected to the dialed person?
    a. If not, determine whether the sequence specified to complete the transfer or reconnect the caller is incorrect.

Isolating Problems in Conferences

The initial steps in a conference are the same as a transfer. However, during a conference, AUDIX remains on the line at the end.

Use the following procedure to troubleshoot for conferences:

1. Follow Steps 1 to 3 under ‘‘Isolating Problems in Transfers’’.
2. Once you are connected to the dialed person, does AUDIX stay on the line?
3. The script should still be active in the `Voice Service` column at the end of the conference action. If not, there is a configuration problem in the `Complete Conference` field.

Isolating Problems in Drop a Caller

Use the following procedure to troubleshoot the Drop Action:

1. Was the caller dropped from conference?
    a. If not, use three telephones to duplicate the Drop Action commands that appear in the Dial Plan Administration. If there is a timing issue, modify the sequence timing until you are successful.

Isolating Problems in Hold

Use the following procedure to troubleshoot the Hold Action:

1. Are you able to place and retrieve a caller on hold?
    a. If not, use two telephones to duplicate the Hold Action commands that appear in the Dial Plan Administration. If there is a timing issue, modify the sequence timing until you are successful.

Isolating Problems in Intelligent Action

Use the following procedure to troubleshoot Intelligent Actions:

1. When the dialed telephone was answered, did Dial Plan detect the speech energy from the person answering that telephone immediately?
    a. An intelligent action is used after dialing a number. The `Voice Service` column on the System Monitor will have CCA while it is waiting to detect speech energy. The `Voice Service` column will not be set to CCA once the speech energy was recognized.

Isolating Problems in Message Waiting Lights

Use the following procedure to troubleshoot Message Waiting Lights:

1. Is the activation method used valid for the switch?
    a. If the activation method is DTMF, is the channel in service? Is it constantly being used by other scripts?
2. After the application request to turn on or off message waiting light, does the script **sbPeriodic** appear in the `Voice Service` column on the System Monitor?
    a. To prevent unnecessary requests, the application sends the message or request to illuminate or extinguish a light only once. Therefore, if the same message light was supposed to be lit earlier, then it will not light it again soon. Use an extension that has not been lit.
3. Does the script appear?
    a. If not, consult technical support personnel.
    b. If so, check the values in `Dialed Digits` column on the System Monitor.
4. Are the access codes and extensions in the `Dialed Digits` column accurate?
    a. If not, replace them with the correct values.
    b. If so, try dialing the same codes and extensions from another telephone or the same line plug into an analog telephone. Sometimes the telephone extensions must be configured on the switch to allow lighting and extinguishing of message waiting lights.
    c. If the activation is VTG and the message waiting light fails to light:
        i. Look in the Dial Plan Log files for any errors generated and logged.
        ii. Trace the **SSIservDip** to see if it lights or extinguishes message waiting lights.

Troubleshooting for Dialing a Number

Dial Plan dials telephone numbers when performing a Make Call, transfer, or conference. It adds or removes numbers from the telephone number given to it when necessary. For example, it will add outside access codes to any outside telephone numbers.

If Dial Plan is not dialing numbers correctly, it may indicate an incorrect dial string configuration.

- Make sure each field is configured correctly.
- Verify the telephone number. Dial the expected Dial String from a telephone to see if it is correct.
- Be careful of timing involved. Use a telephone to give you a rough estimate of the timing. See Chapter 3, "System Administration", for more information about configuration.

Problems and Solutions

The following table describes the basic kinds of problems and their solutions.

Table 7-1. Problems That Affect What Callers Hear

Problem	Cause and Possible Remedy
All commands are tried and fail.	Verify that the Dial Plan DIP is running. Enter **ps -ef | grep SplkDPlanDip** at the UNIX prompt. If `SplkDPlanDip` appears in the output, the DIP is running. If it does not appear in the output, the DIP is not running. If the DIP is not running, please consult "Turning On the DIP" on page 7-8 for instructions.
One or more commands fail, while some commands are successful.	The Dial Plan DIP configuration codes are set incorrectly for the commands that fail, or the related files are corrupted. Use your Dial Plan administration to verify the codes for each setting. Correct any wrong or corrupted settings.

Continued on next page

Table 7-1. Problems That Affect What Callers Hear — *Continued*

Problem	Cause and Possible Remedy
Dial Plan is unable to construct a proper telephone number or execute any common functions.	The Dial Plan DIP does not have a legitimate configuration. Use your Dial Plan Administration to verify and correct the configuration.
Diagnostics show Dial Plan is creating the proper command strings, but some commands or digits are skipped during execution.	Place short delays (pauses) before or after commands to give the Dial Plan extra time to dial. See Chapter 3, ‘‘System Administration’’, for instructions on how to place pauses in the commands.

Turning On the DIP

If the DIP is not running, find out whether the DIP executable exists:

1. Enter **cd /usr/spanlink/SplkDPlan/bin** at the UNIX prompt.
2. Enter **ls** at the UNIX prompt.
3. Look for `SplkDPlanDip` in the output.
4. Do one of the following:
   - If `SplkDPlanDip` does not appear, reinstall Dial Plan.
   - If `SplkDPlanDip` does appear, go to Step 5.
5. Enter **ps -ef | grep SplkDPlanDip**
6. Look for `SplkDPlanDip` in the output.
7. Do one of the following:
   - If `SplkDPlanDip` does not appear, go to Step 7.
   - If `SplkDPlanDip` does appear, your dip is running. You do not need to proceed.
8. If the Dial Plan Base was completely installed and the SplkDPlanDip is not running, enter **vi /etc/inittab** at the UNIX prompt.
9. Look for the line:
   `DPOO:4:respawn:/usr/spanlink/SplkDPlan/bin/SplkDPlanDip > /dev/console 2>&1`

10. Do one of the following:
    - If the line does not appear, enter **mkitab** at the UNIX prompt.
        a. Go to Step 3.
    - If the line appears, look for `respawn` in the 3rd field of the output.
        a. Do one of the following:
            — If `respawn` appears, enter **telinit q**
            The DIP should start running.
            — If `off` appears instead, enter **cd /etc/conf/init.d**
                i. Enter **ls**.
                ii. Look for a file that contains `DPlnBase`.
                For example, `I109DPlnBase`.
                iii. View the file. Enter **vi <file name>**
                iv. Change `off` to `respawn`.
                v. Go back to Step 4.
11. The DIP should restart. If it fails to restart or respawns continuously:
    a. Look at the log file **/usr/spanlink/SplkDPlan/log/SplkDPlanDip.log**. (See "Log Names, Locations, and Viewing" on page 8-1 for more information about the Dial Plan log file.).
    b. Turn on debugging.
    c. Start the DIP.
    d. Look at the log and debug files.

Running a Trace

To run a trace for a specific channel, enter
trace chan x TSM SplkDPlanDip > /<directory path>/<trace filename>
at the UNIX prompt. Replace "x" with a specific channel number, a range of channel numbers, or **all**.

Optional Commands

To run a more specific trace, use one of the following parameters in the trace above:

- **date** timestamps each line of the trace file
- **TRIP** or **TWIP** adds lower-level trace statements that are helpful when debugging. Use TRIP for analog cards or TWIP for digital cards.

For example, if you want to run a trace using the date and TRIP, and write the output to **/tmp/trace.file**, enter the following sequence at the UNIX prompt:
trace chan 4 TSM date TRIP SplkDPlanDip > /tmp/trace.file

Summary

This chapter showed you how to isolate and diagnose problems that may occur. It also showed you possible solutions to these problems.

- See Chapter 8, ‘‘Logs and Error Codes’’, for more information about how to find error code messages if there is a problem.

Logs and Error Codes

8

This chapter discusses logs maintained by Dial Plan. The logs contain the set of events generated by Dial Plan. These events may represent actions taken by Dial Plan, implications of a user-defined configuration setting, or limitations of the hardware (such as, disk space, ports free, etc.). The error codes are brief descriptions of the events.

This chapter defines each log and describes how to view its contents. For each error code, a detailed definition is given along with possible corrective actions.

Log Names, Locations, and Viewing

The Dial Plan log is stored in **/usr/spanlink/SplkDPlan/logs/SplkDPlanDip.log**.

An older copy of the log file, if it exists, is stored in **/usr/spanlink/SplkDPlan/logs/Old/SplkDPlanDip.log**.

View logs using the **vi** editor.

Error Codes

Error codes are the messages you see in the log and debug files. FATAL error codes are displayed on the console. A detailed message is logged after the error to indicate the actual problem.

- FATAL is displayed on the console. It also appears in the log file. It occurs when the program encounters an unrecoverable error condition. The program will terminate under normal circumstances.
- MAJOR appears in the log file. It indicates a serious error. The program does not terminate.
- INFO appears in the log file. It records important events. It is useful for traces.
- DEBUG1 indicates the debugging level is set at Debug Level 1 or higher. This provides extra information normally not displayed in the log.
- DEBUG2 indicates debugging is set at Debug Level 2 or higher. It provides a more detailed account than DEBUG 1.

Example of Log File

The **SplkDPlanDip.log** appears as follows:

```
14:03:25 10/1/97 SplkDPlanDip INFO  DipInit succeeded
14:03:25 10/1/97 SplkDPlanDip INFO  Added MsgId=100
```

Example of Debug File

The **SplkDPlanDip.dbg** appears as follows:

```
14:03:25 10/1/97 SplkDPlanDip INFO  DipInit succeeded
14:03:25 10/1/97 SplkDPlanDip INFO  Added MsgId=100
14:03:25 10/1/97 SplkDPlanDip DEBUG1 EntryValue=[2]
14:03:25 10/1/97 SplkDPlanDip DEBUG1 Entered DipProc
14:03:25 10/1/97 SplkDPlanDip DEBUG1 DipProc : malloc'ed
Receive buffer 1056 bytes
14:03:25 10/1/97 SplkDPlanDip DEBUG1 DipProc : malloc'ed
Send buffer 596 bytes
14:03:25 10/1/97 SplkDPlanDip DEBUG1 cleared out -1 bytes
from rcv msg queue.
14:03:25 10/1/97 SplkDPlanDip DEBUG1 SplkDPlanDip: in for
loop, waiting to receive a message.
```

Other Problems

Due to the structure of Dial Plan, a single problem can sometimes have many causes and remedies. The following section presents a broad selection of problems that may be addressed by any of the remedies given.

Possible Problems

The system operates improperly or database(s) have become corrupted. Specifically:

- `Cannot open file: file does not exist` error encountered
- System does not write data to fields
- System does not write to fields that it normally populates after the user enters information elsewhere on the form
- Error is encountered when attempting to save, close, or cancel a form or text entry
- The save operation appears to work, but user finds information missing after reentering form
- System will not back up or restore configurations
- DIP dumps core
- Terminal freezes
- Form accepts invalid input or rejects valid input
- System routinely gives warning messages when starting Dial Plan

Cause and Possible Remedy

The system is improperly tuned or configured. Verify:

- Free disk space under **/spanlink**
- Console system messages
- Invalid UnixWare operating system parameters
- Faulty hardware in all key components
- TERM or SMTERM environmental variable is not set to the correct terminal type.

NOTE:
If one of the databases has been corrupted, follow the guidelines under ‘‘Cause and Possible Remedy’’ on page 8-3 to correct the underlying problem, and then restore the configuration from a backup on diskette. If a backup is not available, restore by verifying every field in every form to verify that they are correct. Change the fields to correct them as necessary and save the form. *Do not save a form if you think it may corrupt your configuration.*

Summary

Logs and error codes provide technicians with information about what is happening in Dial Plan. Use them to diagnose possible problems. See Chapter 7, ‘‘Troubleshooting’’, for more information on how to solve the problem.

Planning Forms

A

This appendix includes planning forms to complete before installation. The professional services associate responsible for installing Dial Plan must communicate with the customer telecom administrator to insure the forms are completed correctly. Use these planning forms in conjunction with Chapter 2, "Getting Started".

Planning Forms

Use the following forms to determine how to configure Dial Plan for your specific site, switch, and application.

- "General Dialing Related Questions Planning Form: Digits Related" — includes questions that relate to your overall switch and telephone network configuration.
- "General Dialing Related Questions Planning Form: Format Related" — includes questions that relate to the components of the Dial String.
- "General Dialing Related Questions Planning Form: Fixed Format" — includes questions for sites with fixed length telephone numbers.
- "General Dialing Related Questions Planning Form: Variable Format" — includes questions for sites with variable length telephone numbers.
- "Application Specific Planning Form" — includes questions regarding the Dial Plan settings for Customer Assist.
- "Telephone Functions Planning Form" — includes questions about how your switch performs various telephone actions.

General Dialing Related Questions Planning Form: Digits Related

Table A-1 includes questions related to your overall switch and telephone network configuration.

Table A-1. General Dialing Related Questions Planning Form: Digits Related

Question	Answer	Action
What is your local country code?		**Form:** Application Specific Settings **Field:** `Local Country Code`
What is your local city or area code?		**Form:** Application Specific Settings **Field:** `Local City/Area Code`
Is the length of the local subscriber numbers and city/area codes always fixed, or sometimes variable?	Circle one: Fixed (F) Variable (V)	**Form:** Application Specific Settings **Field:** `Local Phone Number Format Type`
What is the minimum length for a local subscriber number?		**Form:** Application Specific Settings **Field:** `Subscriber Number Minimum Length`
What digit(s) do you dial to obtain access to your domestic long distance network?		**Form:** Application Specific Settings **Field:** `Long Distance Access Code`
What digit(s) do you dial to obtain access to international long distance?		**Form:** Application Specific Settings **Field:** `International Access Code`
What digit(s) do you dial to get an outside line?		**Form:** Application Specific Settings **Field:** `Outside Access Code`

Continued on next page

Table A-1. General Dialing Related Questions Planning Form: Digits Related — *Continued*

Question	Answer	Action
When dialing a long distance number, do you use to enter a special character to terminate the number? If so, what?		**Form:** Application Specific Settings **Field:** `Termination Code`
When making an outbound call as a standard in your call center, how many ring cycles do you wait before considering a call not answered?		**Form:** Application Specific Settings **Field:** `Number of Loops for Ans Supervision`
Do you need to dial special digits to obtain access to your particular long distance provider? If so, what digits?		**Form:** Application Specific Settings **Field:** `Equal Access Code`
When does your switch require you to insert pauses when dialing and what are the lengths of the pauses?		**Form:** Switch Specific Settings **Fields:** `Pre` and `Post` values in appropriate fields. Leave the other fields blank.

General Dialing Related Questions Planning Form: Format Related

Table A-2 includes questions that relate to the components of the Dial String.

Table A-2. General Dialing-Related Questions Planning Form: Format Related

Question	Answer	Action
Which of the following must you dial for local calls: Outside Access Code Beginning Accounting Code Long Distance Access Code Area Code Subscriber Number Ending Accounting Code	Circle one: Y N Y N Y N Y N Y Y N	Form: Local Number Format Fields: `Dial Outside Access Code; Dial Beginning Accounting Code; Dial Long Distance Access Code; Dial Area Code; Dial Subscriber Number; Dial Ending Accounting Code`
Which of the following must you dial when dialing numbers within your city/area code that require long distance service: Outside Access Code Beginning Accounting Code Long Distance Access Code Area Code Subscriber Number Ending Accounting Code	Circle one: Y N Y N Y N Y N Y Y N	Form: Nearby Long Distance Number Format Fields: `Dial Outside Access Code; Dial Beginning Accounting Code; Dial Long Distance Access Code; Dial Area Code; Dial Subscriber Number; Dial Ending Accounting Code`

Continued on next page

Table A-2. General Dialing-Related Questions Planning Form: Format Related — *Continued*

Question	Answer	Action
Which of the following must you dial when dialing long distance numbers outside your city/area code:	Circle one:	Form: Distant Long Distance Format Fields: `Dial Outside Access Code; Dial Beginning Accounting Code; Dial Long Distance Access Code; Dial Area Code; Dial Subscriber Number; Dial Ending Accounting Code`
Outside Access Code	Y N	
Beginning Accounting Code	Y N	
Long Distance Access Code	Y N	
Area Code	Y N	
Subscriber Number	Y	
Ending Accounting Code	Y N	
Which of the following must you dial when dialing long distance numbers outside your city/area code:	Circle one:	Form: Distant Long Distance Format Fields: `Dial Outside Access Code; Dial Beginning Accounting Code; Dial Long Distance Access Code; Dial Area Code; Dial Subscriber Number; Dial Ending Accounting Code`
Outside Access Code	Y N	
Beginning Accounting Code	Y N	
Long Distance Access Code	Y N	
Area Code	Y N	
Subscriber Number	Y	
Ending Accounting Code	Y N	

General Dialing Related Questions Planning Form: Fixed Format

Table A-3 includes questions for sites with fixed length telephone numbers.

Table A-3. General Dialing Related Questions Planning Form: Fixed Format

Question	Answer	Action
How many digits are in your city/area code?		**Form:** Application Specific Settings **Field:** `City/Area Code Length?`
How many digits are in the prefix to your local subscriber numbers?		**Form:** Application Specific Settings **Field:** `Prefix Length`
For numbers within your city/area code: Which local subscriber number prefixes can you dial with just the local subscriber number and not any long distances access?		**Form:** Application Specific Settings **Field:** `Local Call Prefix Codes`
For numbers within your city/area code: Which local subscriber number prefixes must you dial long distances access?		**Form:** Application Specific Settings **Field:** `Nearby Long Distance Prefix Codes`

Table A-3. General Dialing Related Questions Planning Form: Fixed Format — *Continued*

Question	Answer	Action
For numbers within your city/area code: If the prefix to the local subscriber number is in neither of the lists above, what should Dial Plan assume: • That you can dial with just the local subscriber number and not any long distance access. • That you must dial with long distance access.		**Form:** Application Specific Settings **Field:** `Default is Nearby Long Distance` If Dial Plan need not dial any long distance access, then the field value is "N." If Dial Plan must dial long distance access, then the field value is "Y."

General Dialing Related Questions Planing Form: Variable Format

Table A-4 includes questions for sites with variable length telephone numbers.

Table A-4. General Dialing Related Questions Planning Form: Variable Format

Question	Answer	Action
For numbers within your city/area code: If the prefix to the local subscriber number is in neither of the lists above, what should Dial Plan assume: 1. That you can dial with just the local subscriber number and not any long distance access. 2. That you must dial with long distance access.		**Form:** Application Specific Settings **Field:** `Default is Nearby Long Distance` If Dial Plan need not dial any long distance access, then the field value is “N.” If Dial Plan must dial long distance access, then the field value is “Y.”

Application Specific Planning Form

Table A-5 includes questions regarding the Dial Plan settings for Customer Assisty.

Table A-5. Application Specific Planning Form

Question	Answer	Action
What is the name of the application you want to administer?	Customer Assist	**Form:** Select Application. **Field:** Press ENTER F3 to select the application
Should Dial Plan insert an Accounting Code before the telephone number? If so, what is it?		**Form:** Application Specific Settings **Fields:** `Beginning Accounting Code`
Should Dial Plan insert an Accounting Code after the telephone number? If so, what is it?		**Form:** Application Specific Settings **Fields:** `Ending Accounting Code`

Telephone Functions Planing Form

Table A-6 includes questions about how your switch performs various telephone actions.

Table A-6. Telephone Functions Planning Form

Question	Answer	Action
What series of flashes, pauses, and feature access codes do you use to initiate a conference with an analog phone?		**Form:** Conference Actions Configuration **Field:** `Initiate Conference`
Can AUDIX ports provide call progress detection? If so, will the application that uses Dial Plan perform intelligent conference actions?		**Form:** Conference Actions Configuration **Field:** `Intelligent Conference`. If both answers are "yes," then this field should have an entry. Otherwise, leave it blank.
What series of flashes, pauses, and feature access codes do you use with an analog phone to bring the party on hold back into the conference?		**Form:** Conference Actions Configuration **Field:** `Complete Conference`
What series of flashes, pauses, and feature access codes do you use to drop the analog line that initiated the conference from the conference?		**Form:** Conference Actions Configuration **Field:** `Terminate Conference`
What series of flashes, pauses, and feature access codes do you use with an analog line to drop the conference attempt and reconnect the party on hold if the conference attempt results in busy?		**Form:** Conference Actions Configuration **Field:** `Reconnect Caller Busy`

Continued on next page

Table A-6. Telephone Functions Planning Form — *Continued*

Question	Answer	Action
What series of flashes, pauses, and feature access codes do you use with an analog line to drop the conference attempt and reconnect the party on hold if the conference attempt results in no answer?		**Form:** Conference Actions Configuration **Field:** `Reconnect Caller No Answer`
What series of flashes, pauses, and feature access codes do you use with an analog line to drop the conference attempt and reconnect the party on hold if the conference attempt results in an error tone?		**Form:** Conference Actions Configuration **Field:** `Reconnect Caller General Error`
What series of flashes, pauses, and feature access codes would you use with an analog phone to drop a party from a call?		**Form:** Drop Actions Configuration **Field:** `Initiate Drop`
What series of flashes, pauses, and feature access codes would you use with an analog phone to place a party on hold?		**Form:** Hold Actions Configuration **Field:** `Initiate Hold`
What series of flashes, pauses, and feature access codes would you use with an analog line to retrieve a caller from hold?		**Form:** Hold Actions Configuration **Field:** `Retrieve from Hold`
Can AUDIX ports provide call progress detection? If so, will the application that uses Dial Plan perform intelligent actions?		**Form:** Intelligent Actions Configuration **Field:** `Wait for Response.` If both answers are “yes,” then this field should have an entry. Otherwise, leave it blank.

Continued on next page

Table A-6. Telephone Functions Planning Form — *Continued*

Question	Answer	Action
Can AUDIX ports provide call progress detection? If so, will the application that uses Dial Plan perform intelligent make calls?		**Form:** Make Call Actions Configuration **Field:** `Intelligent Make Call.` If both answers are "yes," then this field should have an entry. Otherwise, leave it blank.
Can you dial a number and have the digits appear on the agent's display? If so, do you use to enter a pause between the number and the digits? If so, how long a pause?		**Form:** Make Call Actions Configuration **Field:** `Internal Display Code Pre`
Can you dial a number and then digits such that the digits appear on the agent's display? If so, do you use to enter a pause after the digits? If so, how long a pause?		**Form:** Make Call Actions Configuration **Field:** `Internal Display Code Post`
Will the voice platform application that uses Dial Plan require Message Waiting Light services?		If so, continue with the next question. If not, skip to the questions on Transfer Actions.
How will you set the Message Waiting Lights?	Analog port (DTMF)	**Form:** Message Waiting Lights Configuration **Field:** `Activation Method to Use`
Which port will you use for setting Message Waiting Lights?		**Form:** Message Waiting Lights Configuration **Field:** `Channel`

Continued on next page

Table A-6. Telephone Functions Planning Form — *Continued*

Question	Answer	Action
What series of flashes, pauses, and feature access codes do you use with an analog phone to illuminate Message Waiting Lights?		**Form:** Message Waiting Lights Configuration **Fields:** `Message Waiting Lights ON; Initiate ON Command; ON Access Code Pre; ON Access Code; ON Access Code Post; Complete ON Command`
What series of flashes, pauses, and feature access codes do you use with an analog phone to extinguish Message Waiting Lights?		**Form:** Message Waiting Lights Configuration **Fields:** `Message Waiting Lights OFF; Initiate OFF Command; OFF Access Code Pre; OFF Access Code; OFF Access Code Post; Complete OFF Command`
What series of flashes, pauses, and feature access codes do you use to initiate a transfer with an analog phone?		**Form:** Transfer Actions Configuration **Field:** `Initiate Transfer`
Can AUDIX ports provide call progress detection? If so, will the application that uses Dial Plan perform intelligent transfers?		**Form:** Transfer Actions Configuration **Field:** `Intelligent Transfer.` If both answers are "yes," then this field should have an entry. Otherwise, leave it blank.
What series of flashes, pauses, and feature access codes do you use with an analog phone to bring the party on hold back to the transfer?		**Form:** Transfer Actions Configuration **Field:** `Complete Transfer`

Continued on next page

Table A-6. Telephone Functions Planning Form — *Continued*

Question	Answer	Action
What series of flashes, pauses, and feature access codes do you use with an analog phone to drop the conference attempt and reconnect the party on hold if the transfer attempt results in busy?		**Form:** Transfer Actions Configuration **Field:** `Reconnect Caller Busy`
What series of flashes, pauses, and feature access codes do you use with an analog phone to drop the conference attempt and reconnect the party on hold if the transfer attempt results in no answer?		**Form:** Transfer Actions Configuration **Field:** `Reconnect Caller No Answer`
What series of flashes, pauses, and feature access codes do you use with an analog phone to drop the conference attempt and reconnect the party on hold if the transfer attempt results in an error tone?		**Form:** Transfer Actions Configuration **Field:** `Reconnect Caller General Error`

Switch Configuration

B

This appendix describes the parameters you should enter for each switch. Use this appendix in conjunction with Chapter 2, "Getting Started".

Switch Configuration

Each switch has default settings that either can be installed as a package or entered manually. The following switches support Dial Plan:

- DEFINITY G3 — see "DEFINITY G3 Default Settings" on page B-2.

DEFINITY G3 Default Settings

This section contains tables with the default values for DEFINITY.

Switch Specific Settings

Table B-1 contains the default values for Switch Specific Settings.

Table B-1. Pre and Post Codes

Field	Value
Outside Access Code Pre	
Outside Access Code Post	N0020
Beginning Accounting Code Pre	
Beginning Accounting Code Post	
Equal Access Code Pre	
Equal Access Code Post	
Long Distance Access Code Pre	
Long Distance Access Code Post	
International Access Code Pre	
International Access Code Post	
Country Code Pre	
Country Code Post	
City/Area Code Pre	
City/Area Code Post	
Subscriber Number Pre	
Subscriber Number Post	
Termination Code Pre	
Termination Code Post	
Ending Accounting Code Pre	p0700
Ending Account Code Post	
OutPulse Code Pre	
OutPulse Code Post	

Function Specific Settings

This section contains the default values for Function Specific Settings.

Conference Actions

Table B-2 contains the default values for Conference Actions.

Table B-2. Conference Actions

Field	Value
Initiate Conference	f
Intelligent Conference	W0003
Complete Conference	f
Terminate Conference	h
Reconnect Caller Busy	ff
Reconnect Caller No Answer	ff
Reconnect Caller General Error	ff

Drop Actions

Table B-3 contains the default values for Drop Actions.

Table B-3. Drop Actions

Field	Value
Initiate Drop	N0050fN0050

Hold Actions

Table B-4 contains the default values for Hold Actions.

Table B-4. Hold Actions

Field	Value
Initiate Hold	f
Retrieve from Hold	N0050fN0050

Intelligent Actions

Table B-5 contains the default values for Intelligent Actions.

Table B-5. Intelligent Actions

Field	Value
Wait for Response	W0003

Make Call Action

Table B-6 contains the default values for the Make Call Action.

Table B-6. Make Call Action

Field	Value
Intelligent Make Call	W0005
OutPulse Code Pre	N0020
OutPulse Code Post	

Transfer Actions

Table B-7 contains the default values for Transfer Actions.

Table B-7. Transfer Actions

Field	Value
Initiate Transfer	f
Intelligent Transfer	
Complete Transfer	fh
Reconnect Caller Busy	ff
Reconnect Caller No Answer	ff
Reconnect Caller General Error	ff

Message Waiting Lights

Table B-8 contains the default values for Message Waiting Lights.

Table B-8. Message Waiting Lights Default Values

Field	Value
Activation Method	DTMF
Frequency in Seconds	2
Channel	0

Message Waiting Lights ON

Table B-9 contains the default values for Message Waiting Lights ON.

Table B-9. Message Waiting Lights ON Default Values

Field	Value
Initiate Command	o
Access Code Pre	
Access Code	*4
Access Code Post	N0020
Complete Command	N0020hN0020

Message Waiting Lights OFF

Table B-10 contains the default values for Message Waiting Lights OFF.

Table B-10. Message Waiting Lights OFF Default Values

Field	Value
Initiate Command	o
Access Code Pre	
Access Code	#4
Access Code Post	N0020
Complete Command	N0020hN0020

Summary

This appendix provided acceptable values for call and switch configuration. It contains information that is required when constructing a Dial String.

Glossary

A

access codes
Application-specific codes that are required to get access to local, long distance, international lines, and any other codes that must be dialed before or after a number.

accounting code
A code attached to phone numbers for billing purposes.

action
An act of dialing or the act of asking the switch to perform a function.

agent
An agent is the person who interacts with customers who are calling into the call center or whom the agent called. Generally the agent answers customer questions or in telemarketing cases, sells products or services.

analog
The representation of information by means of continuously variable physical quantities such as amplitude, frequency, and phase.

application
An application is a collection of vectors, mailboxes, routing tables, switch configurations, Script Builder programs and anything that is needed to provide a service to users, for example, bulletin boards or auto attendants.

application ID
An application ID allows different access codes to be used for different applications on the same computer if needed.

area code
A three-digit code designating a “toll” center in the United States, Canada and Mexico. This is also called an NPA, Numbering Plan Area.

Automatic Number Identification (ANI)
The number of the phone that is calling that is delivered along with the call. This is an optional service.

B

blind transfer
Transfer of the call to another extension without checking whether the transfer was successful.

C

call control
The setting up, monitoring and tearing down of telephone calls.

call progress tone
A tone sent from the telephone switch to tell the caller of the progress of the call.

caller information
Information about the caller or input entered by the caller. For example, ANI or caller's account number.

caller-on-hold
Callers that are in queue and waiting for an agent to become free to handle their call.

central office (CO)
The location housing telephone switching equipment that provides local telephone service and access to toll facilities for long-distance calling.

city code
City code is the equivalent to area code in some countries. In some countries, it is a fixed length while in others it is of variable length.

computer telephony integration (CTI)
Connection of a computer with a telephone switch which allows the computer to issue switch commands to move calls around.

conference
Connecting 3 or more people into one phone conversation.

configuration
The hardware and software arrangement that defines the system, product, package or application and thus determines what it will do.

connection
A path between telephones that allows the transmission of speech and other signals.

console
The monitor and keyboard of .

country code
The one to four digits code that, in the world numbering plan, uniquely identifies each country or integrated numbering plan in the world.

D

Data Interface Process (DIP)
A daemon (continuously running program) that provides Script Builder and TSM with access to databases and the UNIX operating system.

database
A collection of data structured and organized in a disciplined fashion so that information of interest can be accessed quickly.

DEFINITY Enterprise Communications Server (ECS)
A Lucent Technologies switch.

DEFINITY G3
A Lucent Technologies switch.

dial plan
A description of the dialing arrangements for customer use on a network. It is also known as the dialing plan.

Dial String
The digits that need to be dialed to complete a call.

dial tone
The sound that is heard when you pick up a telephone receiver.

Dialed Number Information Service (DNIS)
DNIS is a feature of 800 and 900 lines that provides the number the caller dialed to reach the attached computer telephony system.

digital
Use of binary code to represent information.

disconnect
The breaking or release of a circuit connecting two telephones or data devices. When a caller is disconnected, it means that the computer hung up on the caller.

E

Enterprise Communications Server (ECS), DEFINITY
A Lucent Technologies switch.

error message
A message on the screen indicating that something is wrong with a possible suggestion of how to correct it.

extension
An additional telephone connected to a line, typically with a switch. Switches typically have many extensions for internal use and some lines to the public network for calls to phone numbers outside the switch.

external caller
Caller calling in from a phone that is not directly connected to the company's switch.

F

feature
A capability of a product to do one or many tasks. For example, transfer calls, play standard announcements, collect speech recognition input and so on.

feature access code (FAC)
A series of touch tones that tells the switch that the caller is trying to use a certain switch feature. Examples of FAC include lighting/extinguishing Message Waiting Lamps and logging into an agent group.

first party
The party that initiates the call.

flash hook
The little button on the telephone that the receiver is placed on. When this is pushed quickly, it will signal the switch at the other end (central office or PBX) to do something, such as placing the current call on hold. This is also referred to as switch hook.

function code
Each switch may require different flash patterns or pauses to execute different functions. These flash patterns or pauses are called the function code.

function key
One of 8 keys on the computer keyboard labeled with the letter F followed by a number. The effect of pressing a particular function key depends on the menu, form or screen you are in.

I

intelligent transfer
Transfer of the call to another extension after checking that the destination extension is answered.

interactive voice response (IVR)
The use of a computer to interact verbally via a phone with a caller. The computer will play announcements and questions to the caller. The caller can enter input using touch tones, dialing using a rotary phone or with speech. See VRU.

Inter-lata
A call placed within one LATA (Local Access Transport Area) and received in a different LATA. These calls are currently carried by a long distance company.

internal caller
Caller calling in from a phone that is directly connected to the company's switch.

internal extension
A number within the switch.

international number
A phone number outside the country.

intra-lata number
Telecommunications services that originate and end in the same Local Access and Transport Area.

INTUITY
A Lucent Technologies voice/fax mail product.

L

line
Depending on the context, this word can mean different things. It can mean the physical line between the phone company's central office to a subscriber, the line from the central office to the PBX or the line from the PBX to an extension/phone.

local number
A phone number within the same area code.

long distance number
A phone number outside the area code.

M

Multi Application Platform (MAP)
The Lucent Technologies hardware platform.

Message Waiting Lights
A light on the phone which indicates that there are one or more messages for the owner of the phone.

O

off hook
When the handset of the phone is lifted from its cradle (off hook), it signals the switch that someone is ready to do something, like make or answer a call.

on hold
The caller or agent is placed in a waiting state, where they will hear music or silence, until connected again with someone.

on hook
When the phone handset is resting in its cradle. The phone is not connected to any particular line.

operating system
A software program which manages the basic operations of a computer system. For example, UNIX or MS-DOS.

outgoing call
Call from within the switch to outside the switch.

outside line access code
The access code or series of touch tones which tells the switch that the following numbers are for a phone number outside the switch.

P

package
One or more diskettes or tapes that installs software onto a computer.

partition
A division of a hard disk. Each partition behaves as a distinct hard disk.

port
A physical point of entrance to or point of exit from a network.

private branch exchange (PBX)
A smaller version of the phone company's larger central switching office. In most cases it is a privately owned switch. PBX basically routes callers to other locations. When enhanced with ACD capabilities, PBX can become powerful enhancements to call centers.

product
A marketing term for a collection of packages designed to provide certain services.

program
Instructions given to a computer to perform certain tasks. For example, a Script Builder program.

public-network
A network operated by common carriers or telecommunications administrations for the provision of circuit switched, packet switched and leased-line circuits to the public.

R

return value
A value used to indicate the status of the last process started. This is commonly used to indicate whether the last task such as a transfer was successful.

ring cycle
The pattern of ringing. In North America, it is typically six seconds long, two of ringing, four of silence, then repeated.

rotary phone
A phone with the circular dial. As it returns to its normal position after being turned, it opens and closes the electrical loop connected to the central office. Rotary dial telephones momentarily break the DC circuit to represent the digits dialed.

S

script
The set of instructions for the voice system to follow during a transaction.

second party
The party receiving the call.

signal
The result of a call. It can be an answer, busy, no answer or re-order signal.

software
The set or sets of programs that instruct the computer hardware to perform a task or series of tasks.

speech energy
The frequency pattern which typically indicates human speech.

subscriber number
The number that permits a user to reach a subscriber in the same local network or numbering area (same as Directory Number or DN).

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 codes
Each switch may require different flash patterns or pauses before and after access codes. These flash patterns or pauses make up the switch code.

switch integration
The integration of a voice system with a switch to pass information between them.

system
An organized assembly of hardware, software, procedures and other facilities designed to perform a specific function or set of functions. Note that different systems may overlap one another. For example: the system that is built on top of the UNIX operating system. A system can include multiple products also.

system administrator
The person assigned the responsibility of monitoring all system software processing, performing daily system operations and preventive maintenance, and troubleshooting errors as required.

T

termination code
The touch tone code that signals the end of a Dial String. It eliminates the time out on the switch for collecting the phone number.

touch-tone
A generic term for push button telephones.

trace
A command that can be used to monitor the execution of a script.

transfer
A telephone switch feature which provides the ability to move a call from one extension to another.

V

voice platform
The hardware and software system that applies computer intelligence to telecommunications.

voice platform application
Software that runs on the voice platform.

Voice Response Unit (VRU)
The use of a computer to interact verbally via a phone with a caller. The computer will play announcements and questions to the caller. The caller can enter input using touch tones, dialing using a rotary phone or with speech. See IVR.

voice system
See Voice Response Unit.

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