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CallPilot

Application Builder Guide

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NORTEL NETWORKS™

CallPilot

Application Builder Guide

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Chapter 1

Introduction to Application Builder

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What is Application Builder?

Introduction

Application Builder is a graphical program that you use to create CallPilot applications that callers access as dialable services. With Application Builder, you can

- specify the call functions that you want to include in an application, such as menus, announcements, and transfers
- design the call flow (the path calls follow) in an application

In Application Builder, applications are represented by a series of blocks connected by lines. This graphical display allows you to easily follow the call flow.

What is an application?

An application is a set of functions (such as announcements, menus, and transfers) that determines the way CallPilot treats a call. When a CallPilot system receives a call, an application handles the call flow.

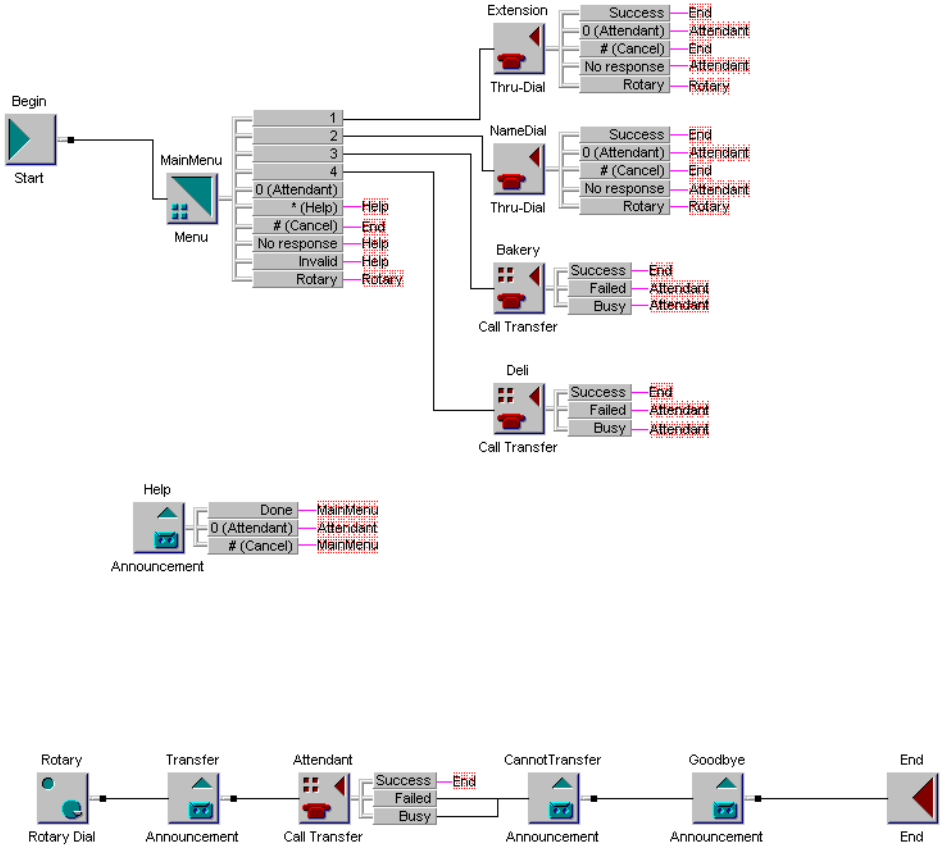
Application example

The automated attendant application is a typical application. This application greets callers to the organization and allows them to transfer to a department or to a specific individual. For example, an automated attendant can contain the following menu:

Thank you for calling SuperValue Grocery. Please choose one of the following four options, or remain on the line for assistance.
If you know the extension of the person you want to reach, press 1.
To access our company directory, press 2.
To reach our Bakery Department, press 3.
To reach our Deli Department, press 4.

An automated attendant can handle calls differently depending on the day of the week or the time of day.

The following illustration shows the call flow for the automated attendant example:



Fax options

If your CallPilot system includes fax messaging, you can include fax functions in your CallPilot applications.

Example

A caller wants to find out the location of ABC Company. One of the options in the ABC menu is "*To receive a fax showing our location, press 4.*"

When the caller presses 4, the following prompt plays: "*Map of ABC Company's location.*"

The application then prompts the caller for the fax number to which the map should be sent.

Benefits of Application Builder

Application Builder provides the following benefits:

- It enables you to plan your CallPilot services online rather than on paper.
- It provides a simple graphical interface for adding functions to the application and connecting functions to create the call flow.

  You drag functions (blocks) from the palette into the application window. Then, you click the mouse on the source and destination functions to connect the blocks and create the call flow.
- It allows you to record voice items while you create your application.

  After you create a new voice item, such as a menu or an announcement, the application prompts you to record the new voice item.
- It shows the call flow graphically.

  The application window shows you, at a glance, how calls are handled by the system.
- It enables you to import an application into other applications. This allows you to save a group of functions that you want to share among multiple applications.

  For example, you may have several applications that provide the same handling for calls arriving after hours. If so, you can create an application named After_Hours, and import it into all applications that use that handling. If you change the After_Hours application, the changes are automatically reflected in all parent applications.

How Application Builder works

Introduction

Application Builder enables you to graphically create your applications. You select the required call functions (blocks) from palettes. You arrange blocks in the desired call flow sequence, and then create the connections between the blocks.

Location of the application

When you work on an application, Application Builder stores a copy of the application on your local computer. When you save it, Application Builder transfers a copy of the application to the server.

Application Builder only permits one administrator at a time to access a given application. This ensures that changes that one administrator makes are not accidentally overwritten by another administrator.

When you open an application, Application Builder locks it on the server to prevent others from accessing it. When you close the application, Application Builder unlocks the application. For more information about how Application Builder stores applications, see Chapter 8, “Saving applications.”

Connected callers

Callers may be connected to an application while you are changing it. When you save your changes, any connected callers continue to interact with the previous version of the application. New callers interact with the new version.

A comparison of Application Builder and Meridian Mail Voice Services

Introduction

Meridian Mail Voice Services, like Application Builder, creates services that callers dial. However, Meridian Mail Voice Services is packaged differently than Application Builder, and it uses different terminology. In Application Builder, these services are named *applications*; in Meridian Mail Voice Services, they are known as *voice services*.

Controllers and blocks

In Meridian Mail Voice Services, controllers are added to voice services and functions. Controllers perform the same role as blocks in Application Builder.

Voice recordings

Meridian Mail Voice Services and Application Builder classify voice recordings differently.

Meridian Mail

Meridian Mail Voice Services uses two types of voice recordings:

- prompts—You can use a prompt only once.
- announcements—You can use an announcement as many times as needed.

Application Builder

Application Builder classifies voice recordings as

- system prompts—Any prerecorded voice prompt that comes with the system. “Transferring to an attendant” is an example of a system prompt.

- voice item—A custom recording that you or someone else creates.

You can use both system prompts and voice items as many times as you want. Therefore, you do not have to rerecord voice items.

Making applications available to callers

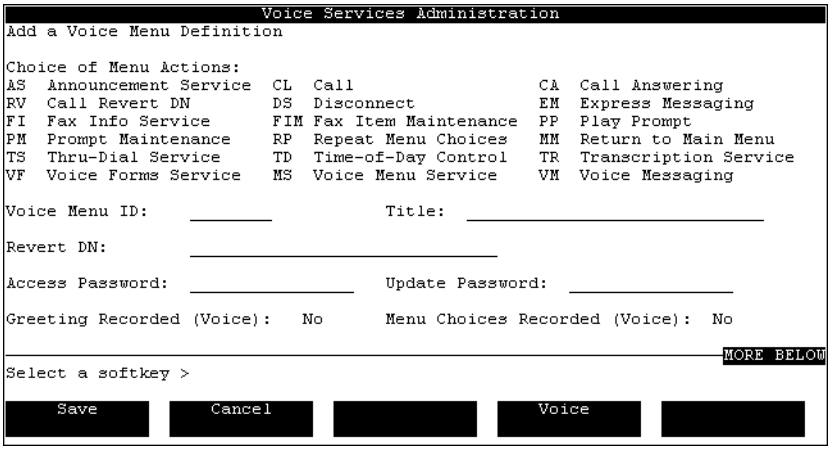
In Meridian Mail Voice Services, callers can dial voice services after you add the services to the Voice Service Directory Number (VSDN) Table. In Application Builder, applications become services after you add them to the SDN Table.

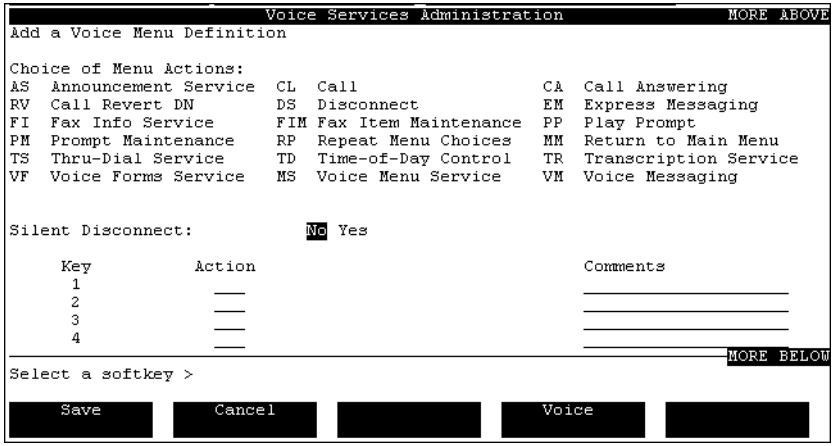
Interfaces

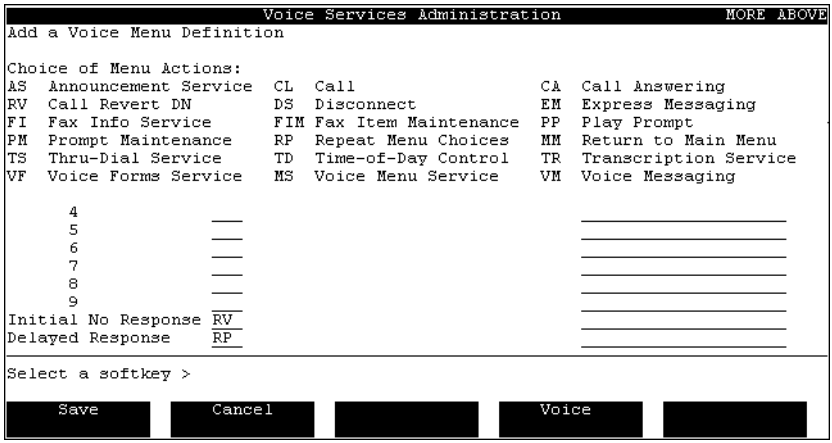
The interfaces of Application Builder and Meridian Mail Voice Services are very different. Application Builder uses a graphical interface, and Meridian Mail Voice Services uses a command-line interface.

Meridian Mail Voice Services interface

To create a menu in Meridian Mail Voice Services, you use the three parts of the Add a Voice Menu Definition screen.

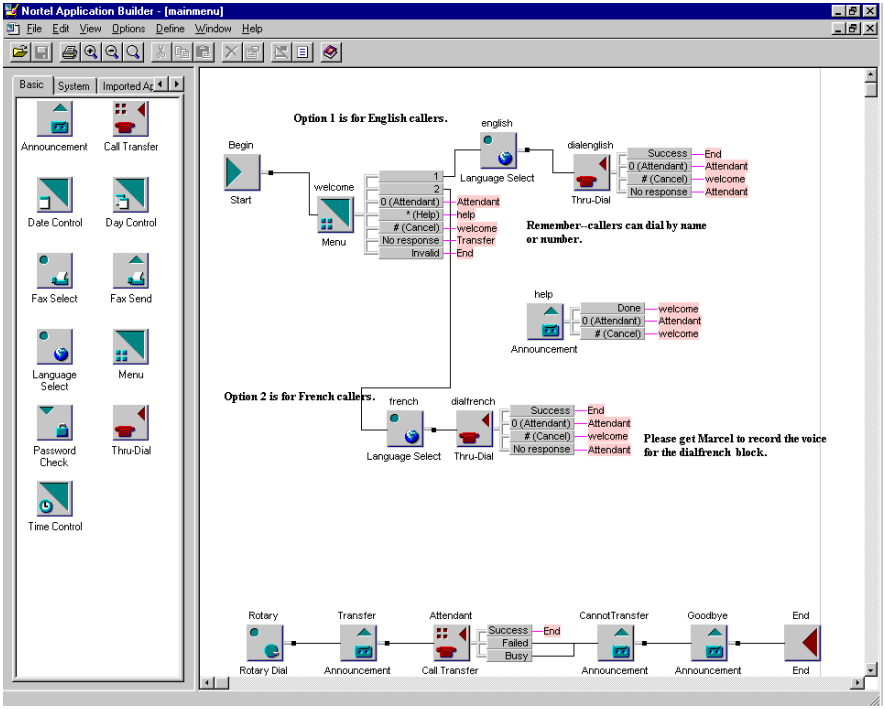



Voice Services Administration
MORE ABOVE
Add a Voice Menu Definition
Choice of Menu Actions:
AS Announcement Service
CL Call
CA Call Answering
RV Call Revert DN
DS Disconnect
EM Express Messaging
FI Fax Info Service
FIM Fax Item Maintenance
PP Play Prompt
PM Prompt Maintenance
RP Repeat Menu Choices
MM Return to Main Menu
TS Thru-Dial Service
TD Time-of-Day Control
TR Transcription Service
VF Voice Forms Service
MS Voice Menu Service
VM Voice Messaging
Silent Disconnect: No Yes
Key
Action
Comments
1
2
3
4
MORE BELOW
Select a softkey >
Save
Cancel
Voice


Voice Services Administration
MORE ABOVE
Add a Voice Menu Definition
Choice of Menu Actions:
AS Announcement Service
CL Call
CA Call Answering
RV Call Revert DN
DS Disconnect
EM Express Messaging
FI Fax Info Service
FIM Fax Item Maintenance
PP Play Prompt
PM Prompt Maintenance
RP Repeat Menu Choices
MM Return to Main Menu
TS Thru-Dial Service
TD Time-of-Day Control
TR Transcription Service
VF Voice Forms Service
MS Voice Menu Service
VM Voice Messaging
4
5
6
7
8
9
Initial No Response RV
Delayed Response RP
Select a softkey >
Save
Cancel
Voice

Application Builder interface

To create a menu in Application Builder, you use the application window. You can drag blocks from the palette into the window, and use the mouse to create connections between the blocks.



About this guide

Introduction

This guide helps you to plan, design, manage, implement, and troubleshoot your applications. It focuses on explaining how Application Builder works, and provides examples and lessons that you can use to build your own applications.

Some chapters are divided into two sections:

- Section A provides overview information about using Application Builder, including planning considerations, design guidelines, and requirements.
- Section B provides a lesson that guides you through the process of developing an application. Each lesson builds on the lesson in the previous chapter.

What’s new in Release 2.02

CallPilot Manager

CallPilot Release 2.02 provides a new web-based interface for administration named CallPilot Manager. You can launch Application Builder from CallPilot Manager, or from Windows using the Start menu.

Stand-alone mode

You can run Application Builder from CallPilot Manager or use it as a stand-alone application.

Diagnostics and logs

You can enable program diagnostics and specify how much detail to include in Application Builder log files. This helps you to identify the source of problems and troubleshoot them.

Related information products

Introduction

The following CallPilot technical documents are stored on the CD-ROM that you receive with your system. The documents are also available from the following sources:

- CallPilot Manager
- My CallPilot
- the Nortel Networks Partner Information Center (PIC) at http://my.nortelnetworks.com

  You require a user ID and password to access the PIC. If you do not have a PIC account, click Register to request an account. It can take up to 72 hours to process your account request.

You can print part or all of a guide, as required.

Note: To order the documents that are available in printed format, contact your Nortel Networks sales representative.

Planning and migration guides

Use these guides before you install CallPilot to help plan your system, or to plan a migration of data from Meridian Mail to CallPilot:

Document titles	NTP number
Planning and Engineering Guide	555-7101-101
Installation and Configuration Planner	not applicable
Meridian Mail to CallPilot Migration Utility Guide	555-7101-801

Installation and configuration guides

The following guides describe how to install the following:

- CallPilot server hardware and software
- desktop messaging and My CallPilot software

Document titles	NTP number
Desktop Messaging and My CallPilot Installation Guide	555-7101-505
Installation and Configuration Guide for your server model This is a binder that contains the following five documents: ■ *Part 1: Installation and Maintenance Overview* ■ *Part 2: <Server model> Server Hardware Installation* ■ *Part 3: <Switch name> and CallPilot Server Configuration* ■ *Part 4: Software Installation and Maintenance* ■ *Part 5: <Server model> Server Maintenance and Diagnostics*	Refer to your binder for your NTP numbers.

Administration guides

The following guides provide specialized information to help you configure CallPilot, administer and maintain it, and use its features:

Document titles	NTP number
Administrator's Guide	555-7101-301
Reporter Guide	555-7101-310

Document titles	NTP number
Application Builder Guide	555-7101-325
Desktop Messaging and My CallPilot Administration Guide	555-7101-503

Networking guides

The following guides describe how to plan, install, set up, and troubleshoot the CallPilot networking services:

Document titles	CallPilot release	NTP number
Networking Enhancements Guide	2.02	555-7101-507
Networking Planning Guide	2.02	555-7101-100
NMS Implementation and Administration Guide	2.02	555-7101-302
AMIS Networking Implementation and Administration Guide	2.02	555-7101-303
Enterprise Networking Implementation and Administration Guide	2.02	555-7101-304
Integrated AMIS Networking Implementation and Administration Guide	2.02	555-7101-305
VPIM Implementation and Administration Guide	2.02	555-7101-306

Note: The CallPilot networking guides remain mainly unchanged since CallPilot 1.0. For instructions on how to configure the networking services on CallPilot, refer to the CallPilot Manager online Help.

End user guides

The following guides are intended for CallPilot end users, such as phoneset users and desktop messaging users:

Document titles
Unified Messaging What's New Card
Unified Messaging Quick Reference Card
Unified Messaging Wallet Card
Menu Interface Quick Reference Card
Alternate Command Interface Quick Reference Card
Command Comparison Cards
Multimedia Messaging User Guide
Speech Activated Messaging User Guide
Desktop Messaging User Guides
My CallPilot User Guide
E-mail Notification User Guide

Troubleshooting

The *CallPilot Troubleshooting Reference* describes symptoms that can appear on all CallPilot server platforms, and describes ways to resolve them.

The *CallPilot Troubleshooting Reference* is written for Nortel Networks distributors and technical support representatives; therefore, it is not part of the customer documentation package. It is continually being updated by Nortel Networks and is available from the Nortel Networks Partner Information Center (PIC) at http://my.nortelnetworks.com.

You require a user ID and password to access the PIC. If you do not have a PIC account, click Register to request an account. It can take up to 72 hours to process your account request.

Note: If you are not a Nortel Networks distributor, then contact your Nortel Networks technical support representative for assistance.

Using online sources

CallPilot administration online Help

The CallPilot Manager and CallPilot Reporter software contain administration online Help areas that provide access to

- technical documentation in Acrobat PDF format
- online help topics in HTML format

To access online information, use either of the following methods:

- Click the orange Help button at the top of any page to access the Administration Help area.
- Click the grey Help button on any page to display a topic that relates to the contents of the page.

For more information about using these Help systems, access the CallPilot Manager Help, open the Getting Started book, and then click “Navigating CallPIlot Manager help”

The Application Builder software contains a Windows Help system as well as context-sensitive help (available by clicking the ? button and then a field or label).

CallPilot end user online Help

The My CallPilot software contains a Useful Information area that provides access to the end-user guides in HTML format. Online user guides in Acrobat PDF format are also available from the Useful Information online Help.

To access online Help for the currently selected My CallPilot tab, click the Help button on the upper-right corner of the My CallPilot page.

Desktop messaging provides product-specific Windows Help for groupware clients (Microsoft Outlook, Novell GroupWise, and Lotus Notes). The stand-alone version of CallPilot Player also provides addressing and troubleshooting information for Internet mail clients.

Contacting technical support

Contact your distributor's technical support organization to get help with troubleshooting your system.

Contacting Nortel Networks

If you have comments or suggestions for improving CallPilot and its documentation, contact Nortel Networks at the following web site address:

http://www.nortelnetworks.com/callpilot_feedback

Chapter 2

Getting started with Application Builder

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Installing Application Builder

Introduction

This section provides requirements and instructions for Application Builder installation.

Required services

To run, Application Builder requires the following server services:

- CallPilot LDAP Service
- CallPilot AOS Service
- FTP Publishing Service
- Volume Servers
- SQL Anywhere database

Client computer

Application Builder requires the following hardware and software:

- Windows 95, 98, 2000 Professional, NT 4.0, or XP
- 25–30 Mbytes of free disk space for the Application Builder software
- Internet Explorer 5.5 SP2 or Netscape 6.2 if you plan to access Application Builder from CallPilot Manager
- CallPilot Player to record voice items

  You can download CallPilot Player from CallPilot Manager.

Upgrading from previous versions

Application Builder 2.02 can coreside with previous versions of the client software. The installation program does not upgrade previous versions of the client.

You should not install Application Builder on the CallPilot server or on a stand-alone CallPilot Manager web server. Install the client software on computers that you plan to use for CallPilot system administration.

Applications created for CallPilot 1.x systems are automatically upgraded.

To install Application Builder

1. Insert the CallPilot Server CD-ROM in the computer where you plan to install Application Builder.
2. Run appbuilder.exe.

   Result: The installation program starts.
3. Follow the instructions in the installation program.

Defining CallPilot systems

Application Builder enables you to maintain applications for multiple CallPilot systems.

When you access Application Builder from CallPilot Manager, your logon information is retained from your CallPilot Manager session, so that you do not need to log on again.

If you plan to use Application Builder in stand-alone mode (without logging on to CallPilot Manager), you must define the server connection details for CallPilot systems that you want to access with Application Builder. Once the CallPilot systems are defined, you can select the system you want to access when you log on to Application Builder.

For details about defining CallPilot systems in Application Builder, see the Application Builder online Help.

Starting Application Builder

Introduction

You can start Application Builder from CallPilot Manager or (in stand-alone mode) from the Windows Start menu.

To start Application Builder from the CallPilot Manager

From the CallPilot Manager window, choose Tools → Application Builder.

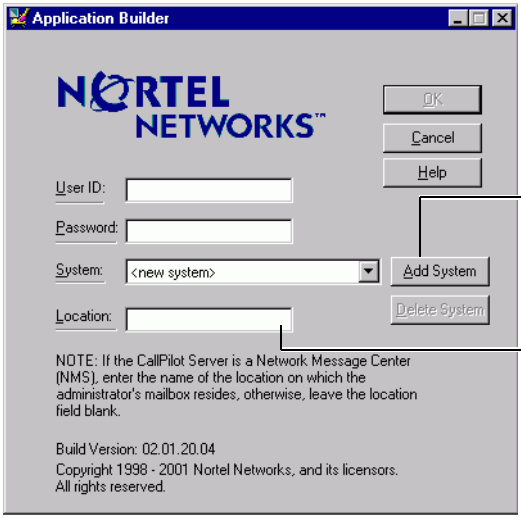
Result: The Application Builder window opens (see “The Application Builder window” on page 34).

To start Application Builder from Windows

Note: When CallPilot Manager is connected to a CallPilot 2.02 Server from a client, enter the actual CallPilot server name or IP address in the Server box to login. If you enter “local host” instead of the actual CallPilot server name, the administrator cannot connect Application Builder to the CallPilot server when starting it from CallPilot Manager Web page and calls to telset cannot be made to play or record greetings.

1 From the Windows Start menu, choose Programs → CallPilot Application Builder → CallPilot Application Builder.

Result: The Application Builder logon dialog box appears.



2 Type your mailbox number and password.

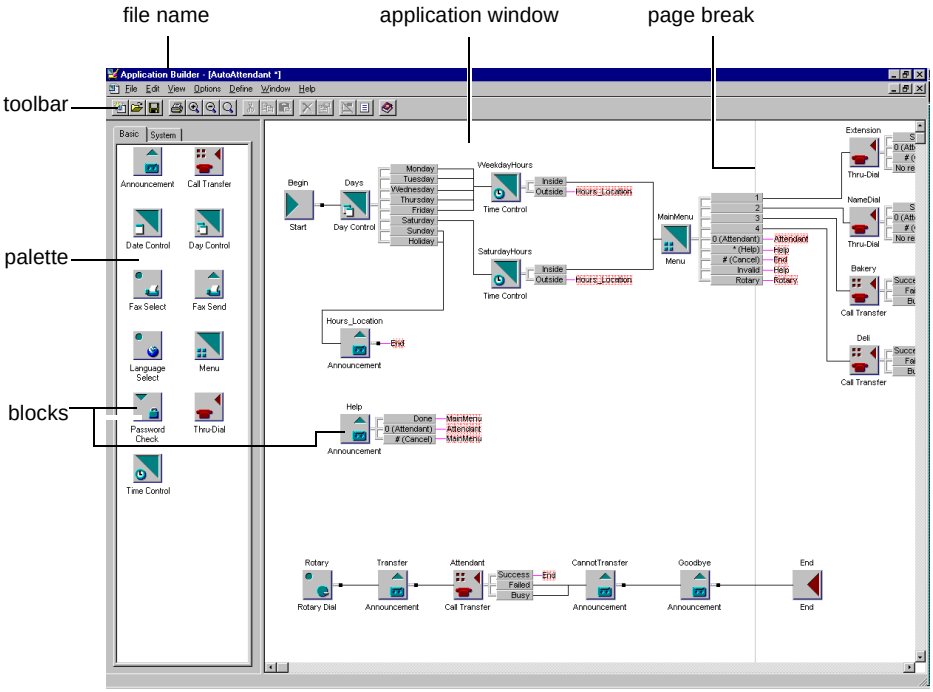
3 From the System list, select the CallPilot server to access.

4 If you are using a Network Message Service (NMS) system, type the name of the NMS location in the Location box.

5 Click OK.

Result: The Application Builder window opens.

The Application Builder window



You create your applications in the application window. Optionally, you can display page breaks, which show where a new page begins on a printout of the application.

The palette has one tab for each block type: basic, system, and imported application. (The imported application tab appears only in an application that has imported another application.)

Note: Some blocks do not appear in the palette, but are automatically added to applications when you create or export them. For example, the Start and End blocks must be part of every application and, therefore, appear automatically when you create an application. Another block, the Continue block, appears in an application only when you export it.

Chapter 3

Creating an application

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Section A: About application development

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What is an application?

Definition

An application is a set of voice and fax functions that callers access by dialing phone numbers.

Parts of an application

An application consists of blocks, voice items, and fax items.

Blocks

Each block in an application represents a function. For example, the Announcement block provides the primary way to play recorded announcements. To build an application, add and connect blocks.

Voice items

Many blocks, such as announcement and menu blocks, have voice items associated with them. Voice items are the system and custom voice recordings that make up prompts, announcements, and menus. Callers hear these voice recordings as they interact with an application. Application Builder allows you to

- create the content of voice items using a phoneset
- import existing voice files

Fax items

Some blocks have fax items associated with them. Fax items consist of a confirmation prompt and a fax file that callers can request for delivery. For example, a customer may request a fax file showing the location of ABC Company. The customer hears the following menu:

To obtain a map showing the location of our store, *press 1*.
To obtain a list of weekly specials by fax, press 2.

The customer presses 1 and hears the confirmation prompt, “You have requested a map showing our location.” The application can then send the file containing the weekly specials directly to the customer’s phoneset.

Call flow

When you look at an application, you see linked blocks. The combined blocks, like a flowchart, show the paths that callers can take through the application. A caller’s path is known as the call flow.

Overview of developing applications

Introduction

The following table shows the application development process:

Task	Reference
1 Plan for the application. Consider who will use the application and how it will interact with other applications.	See “Planning for applications” on page 41.
2 Create the application and assign it a name and application ID.	See “Creating an application” on page 46.
3 Design the call flow for the application.	See Chapter 4, “Designing the call flow.”
4 Create voice and fax items required for the application.	See Chapter 5, “Working with voice items,” and Chapter 6, “Working with fax items.”
5 Include call functions from other applications, copy the functions you require, or import the entire application.	See Chapter 7, “Integrating applications.”
6 Save and close the application to transfer it to the server.	See Chapter 8, “Saving applications.”
7 Test the application, and then make it available to callers.	See Chapter 9, “Putting applications into service.”

Planning for applications

Who will use the application?

When you design your application, consider the following questions about your callers:

Will some callers have rotary telephones?

Callers who use rotary dial phonesets can get lost in applications that require dual-tone multifrequency (DTMF) input. To avoid this problem, provide callers with a way out of all applications. You can direct rotary dial callers to a live attendant or, after hours, to a mailbox.

How will callers access fax services?

If callers access a fax application from a phoneset, same-call fax delivery is not appropriate. However, if they call from a fax machine, same-call fax delivery is appropriate. Consider the type of phoneset when you configure the application's session profile. For information about session profiles, see Chapter 9, "Putting applications into service."

Will some callers speak a different language?

If your callers speak different languages, you should install multiple languages on your system. Callers can then interact with the application in their preferred language.

Will callers dial the application directly?

For callers to dial an application, it must have an SDN. However, callers do not dial all applications. Callers never dial imported applications, but access them through other applications. Therefore, an imported application does not require an SDN, but the parent application does require one. To identify which applications require SDNs, identify which applications callers dial. For information about SDNs, see Chapter 9, "Putting applications into service."

How many callers do you expect?

Applications use channels for processing. You may need more channels for a large number of applications to ensure that calls are not lost.

Will you reuse all or part of the application?

Before you create an application, consider whether

- you can use all or part of an existing application in the new application
- you can use all or part of your new application in another application

There are two ways you can reuse call handling functions in an application:

- Save a group of call handling functions that you want to reuse as a separate application. You can then import the small application into other applications that require the same call handling. Changes to an imported application are automatically reflected in all parent applications that use it.
- Copy blocks from one application and paste them into another application.

Section B: Lesson - Creating applications

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Automated attendant application

Introduction

This lesson shows you how to create a simple automated attendant application to illustrate the application development process. You can use this application as the basis of your own automated attendant by customizing the call handling functions. You can also customize the call flow by adding additional blocks, either immediately or over time.

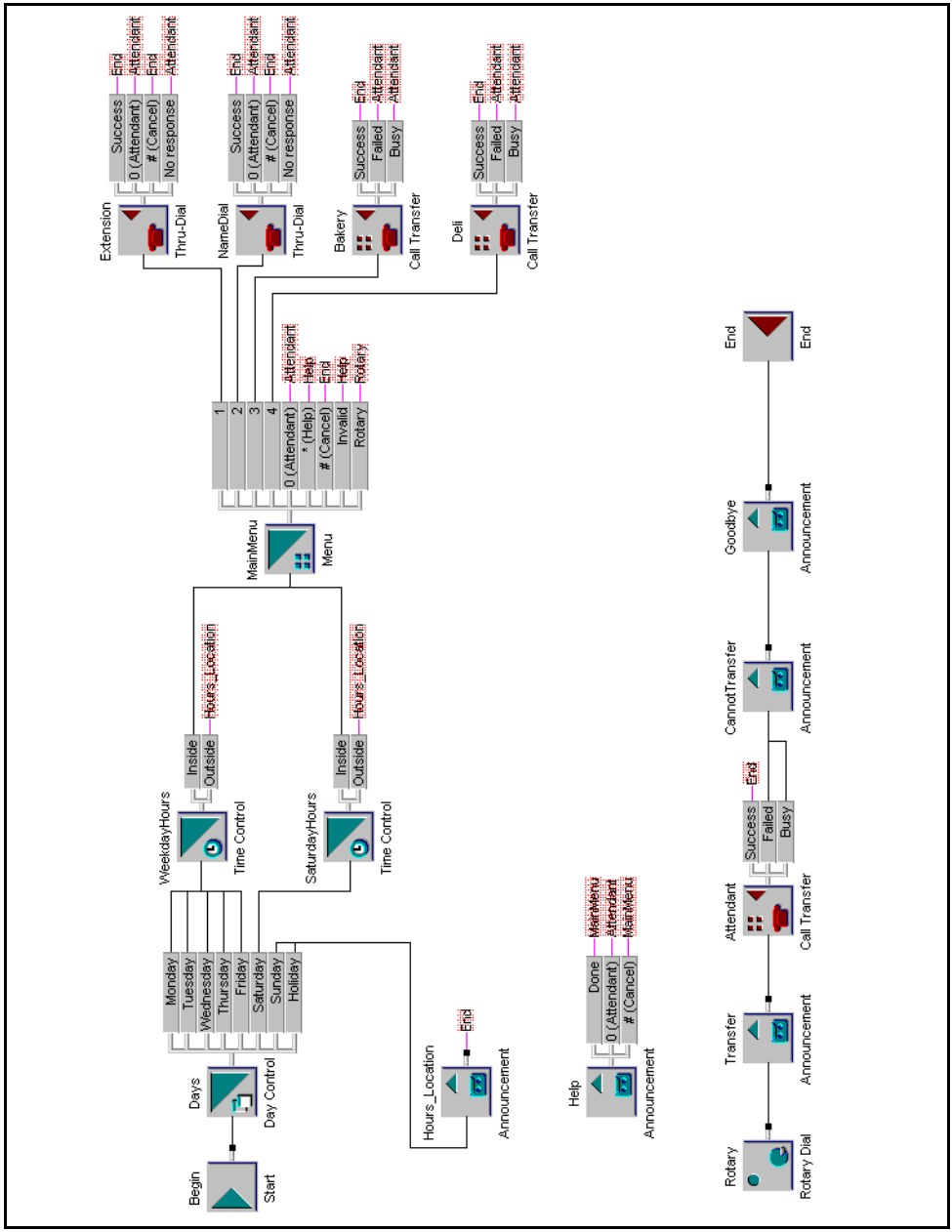
The automated attendant

The manager of the SuperValue Grocery Store wants to implement an automated attendant application. For calls arriving outside business hours, the application must play an announcement that tells the store's hours and its location. For calls arriving during business hours, the application must allow callers to

- call the Bakery or Deli department
- dial a specific extension
- access the company directory to specify the name of the person who they want to call

No response handling

- If the callers do not enter a response for the Menu block (the first block requiring user interaction), the application assumes that they are using a rotary phone. It invokes the Rotary block, and the call is transferred to an attendant.
- If callers do not enter a response for the Thru-Dial block, but they have entered a response for the Menu block, then the application knows they are using a touchtone phone, and it follows the path for the No Response output.


Begin
Start
Days
Day Control
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Holiday
WeekdayHours
SaturdayHours
Time Control
Inside
Outside
Hours_Location
MainMenu
Menu
1
2
3
4
0 (Attendant)
* (Help)
# (Cancel)
Invalid
Rotary
Attendant
Help
End
Extension
NameDial
Bakery
Deli
Thru-Dial
Call Transfer
Success
Failed
Busy
No response
Announcement
Done
Help
Rotary Dial
Transfer
Attendant
CannotTransfer
Goodbye

Creating an application

Introduction

When you create a new application, you assign it a unique file name and ID.

File name

The file name can be up to 60 characters long (for example, AutoAttendant). Give your application a meaningful name, especially if you are not the only administrator. Do not use names that sound alike. Also, try to include the same prefix in the names of related applications, but try to keep your prefix short so that the rest of the name is easily recognized. For example, you can prefix any accounting department applications with “ac.” Then, “acmenu” represents the menu for that department.

Application ID

The application ID must be a unique number from 1000–49 999 (for example, 10 001). When you use Voice Item Maintenance or Fax Item Maintenance to maintain applications from a phoneset, you identify applications by ID.

Note: When you create an application, Application Builder assigns it a default application ID. If desired, you can assign another available ID.

Where the application is stored

When you create an application, you can choose the location on the server where you want to store it. You choose a location with the Volume ID field. In a system with multiple volumes, you can use the following volume IDs:

Volume ID	Location (drive)
1	D:
102	E:

Volume ID	Location (drive)
103	F:

Application locking

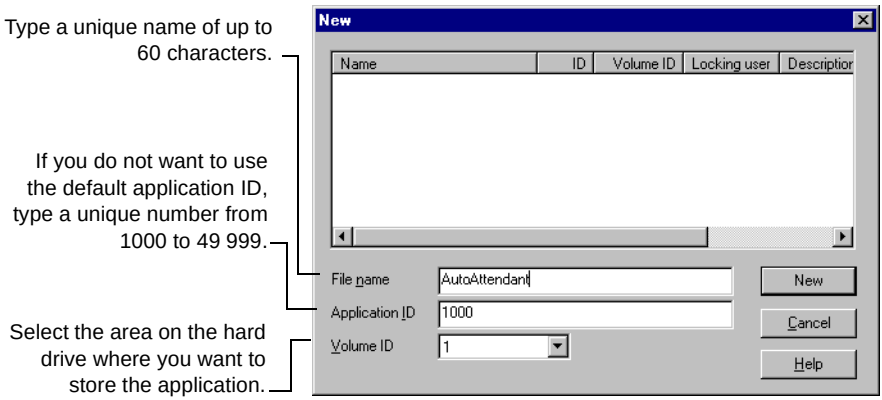
While an application is open, Application Builder locks it so that other administrators cannot access it until you close it.

To create an application

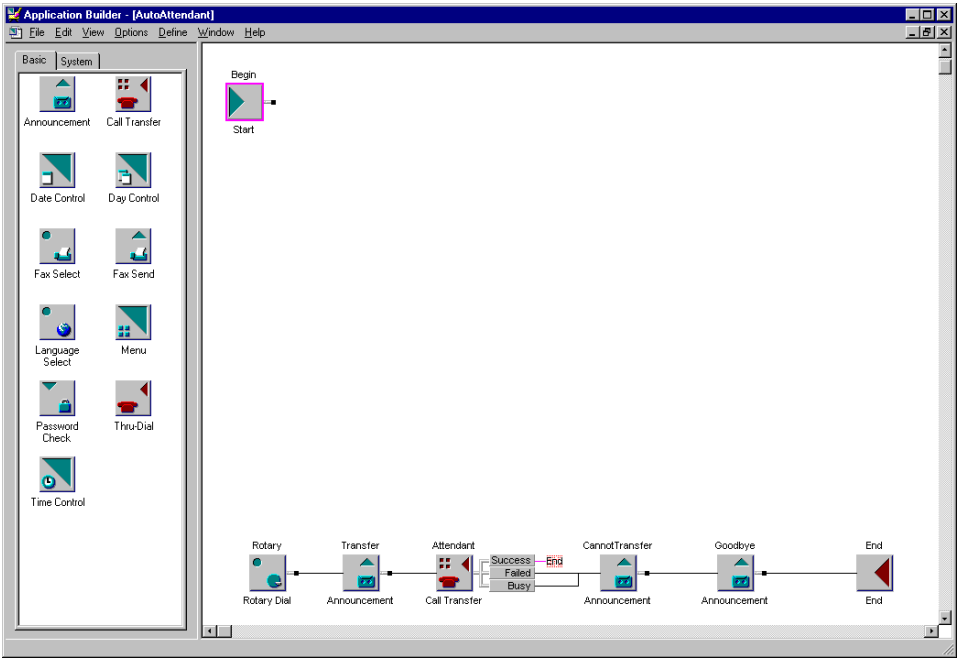
1 In Application Builder, choose File → New.

Result: The New dialog box appears.

2 Specify the file name, application ID, and storage location.



Result: The new application appears in an application window. The new application contains the default blocks: a Start block, an End block, a Rotary Dial block, a Call Transfer block, and three Announcement blocks.



To view or modify identification details for an application

1. Choose File → Properties.
2. Click the General tab.

Creating a spoken name for an application

Introduction

You can include a voice recording to identify an application. This audio identifier is called a *spoken name*. Record a spoken name for all applications that include fax items or voice items. This enables administrators to confirm the identity of an application when they use Voice Item Maintenance or Fax Item Maintenance services to manage voice and fax items from a phoneset.

For example, to identify the application for the Automated Attendant in the London office, you can record the spoken name "*London office Automated Attendant*."

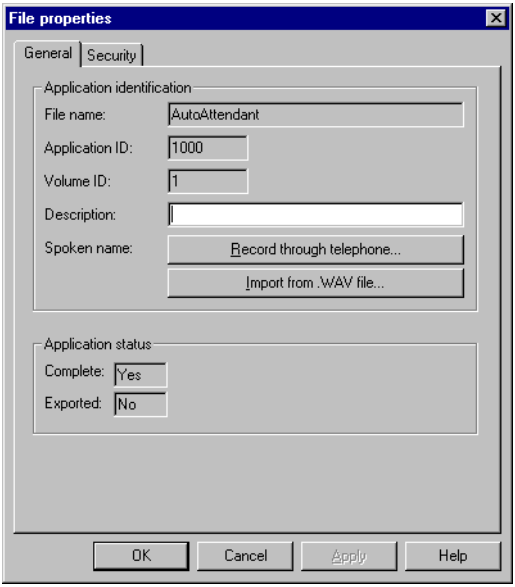
You can create this voice recording in one of the following ways:

- Create the recording within Application Builder, using a phoneset.
- Import a sound file.

To record a spoken name from a phoneset

1. In Application Builder, open the application for which you want to record a title.
2. Choose File → Properties.

   Result: The File properties dialog box appears, with the General tab displayed.



3 Click Record through telephone.

4 In the Specify Phoneset box, type the number of the phoneset you want to use for recording, and then click OK.

Result: Application Builder Player opens.

5 Click Record.

6 Answer the phone when it rings.

7 When you hear a beep, say the title of the application (for example “Automated Attendant”), and then click Stop.

8 To listen to the recording, click Play.

9 If you do not like the recording, record over it.

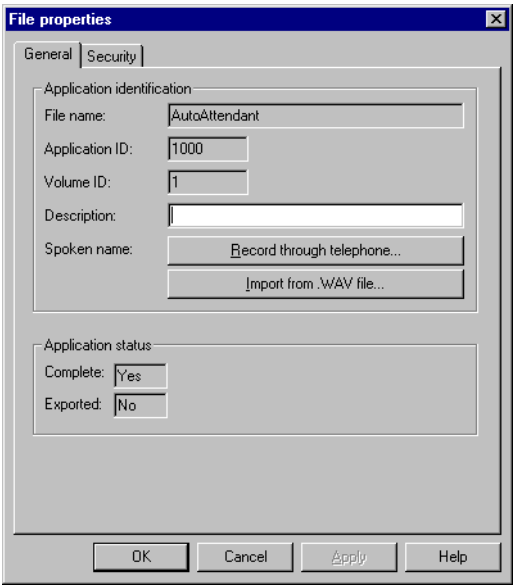
10 When you are satisfied with your recording, click Save.

11 Hang up the telephone, and then close Application Builder Player.

To import a sound file

1. In Application Builder, open the application for which you want to import a title.
2. Choose File → Properties.

   Result: The File properties dialog box appears, with the General tab displayed.



3. Click Import from .WAV file.
4. Select the file that contains a recording of the application's title, and then click Open.
5. Click OK.

Next steps

Introduction

If you want to save changes to your application before you proceed to the next lesson, choose File → Save. For details about saving applications, see “Saving and closing applications” on page 175.

When you are ready to continue, the next step is to create the call flow for your application. See Chapter 4, “Designing the call flow.”

Chapter 4

Designing the call flow

In this chapter

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Block interactions 69

Guidelines for designing the call flow 71

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Section A: Blocks and connections

In this section

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Defining call functions with blocks

What is a block?

A block represents a specific function in an application. In Application Builder, blocks display as gray squares, with an icon that suggests the block's function.



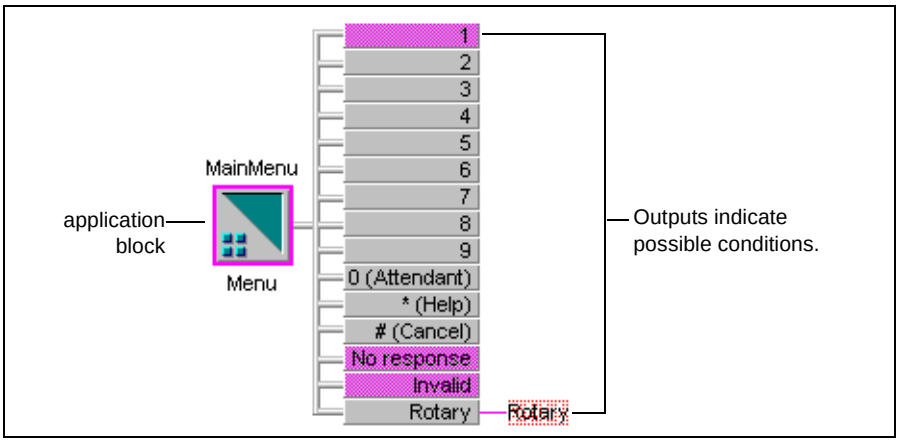
For example, the Announcement block allows you to play a voice recording for the caller.



For example, suppose that you create a simple application that has an announcement and a menu. While creating another application, you realize you need to use the same announcement and menu. Instead of recreating them, you simply import that application into the current one.

Blocks in the application window

A block looks different in an application from the way it looks in the palette. When you add a block to an application, you see both the block and its outputs.



The outputs are the different conditions that can occur. For example, in the Menu block, one of the following conditions may occur:

- The caller presses a number from 1 to 9.
- The caller presses 0.
- The caller presses * or #.
- The caller does not respond.
- The caller presses an invalid key.
- The caller is using a rotary telephone.

You must decide which path calls should take when each of these conditions occurs.

In Application Builder, when you add a new block, that block has a pink border, and some of its outputs are pink. The pink outputs are outputs that must be connected to another block. The pink border indicates that one or more required outputs is not connected, or the block is not configured. (For the Menu block, for example, you must specify the name of the voice item containing the menu choices, as well as the voice items to be played when there is no response or an invalid response.)

Connections

Connections between blocks determine the call flow, or the handling given to calls. Each output for a block must be connected to another block. For more information about connections, see “Connecting blocks” on page 67.

Types of blocks

Block classifications

Application Builder classifies blocks as basic, system, and imported application blocks.

Basic blocks

Basic blocks provide general functionality. You must configure the basic blocks. For example, for the Announcement block, you must specify the name of the voice item containing the recording to be played.

System blocks

System blocks represent predefined system applications (or services). Use these blocks to link your applications to services.



For example, the Express Voice Messaging block transfers callers to the Express Voice Messaging service and enables them to leave a voice message in a mailbox.

Imported application blocks

Imported application blocks enable you to place applications within other applications.

The following tables show the types of blocks that may appear in your applications:

Automatically created blocks

The following table alphabetically lists blocks that are automatically added to applications when applications are created or exported:

Block	Purpose	Setup required
Continue (exported applications only)	Passes callers from an imported application to the destination application.	■ Connect at least one other block to the Continue block.
End	Terminates an application in one of the following ways: ■ disconnects callers from an application ■ transfers callers to a service **Note:** To transfer callers from an application to a service, the End block must terminate the application.	■ None
Rotary Dial	Ensures that callers who use a rotary dial phoneset reach a live attendant and do not get trapped in the application. **Note:** Application Builder cannot determine whether callers actually have DTMF capability. Therefore, if callers do not enter a DTMF response for certain blocks, they transfer to the Rotary Dial block. (You can configure different handling.) The time-out period is set in the CallPilot Manager.	■ Connect the output.

Block	Purpose	Setup required
Start	Begins an application.	■ Connect the output.
Unavailable	Indicates that an imported application or fax function is unavailable in a restored application. For information about archiving and restoring applications, see Chapter 10, “Archiving and restoring applications”.	■ Restore missing imported applications from your archives, if they are available. ■ Delete Unavailable blocks, and then reconnect and reconfigure blocks to complete the application.

Blocks in the Basic palette

The following table describes the blocks on the Basic palette, and the setup they require. For more information, see the online Help.

Block	Purpose	Setup required
Announcement	Plays a voice recording to provide information. Caller interaction is not required. Compare with Menu block.	■ Connect the outputs. ■ Choose the voice item. ■ Determine how many times the announcement plays. ■ Define the phoneset keys that can interrupt the announcement, and whether those keys should be saved for the next block.

Block	Purpose	Setup required
Call Transfer	Transfers callers to the default attendant or an extension specified by the caller. **Note:** If you transfer callers to the default attendant, ensure that the default attendant is defined in CallPilot Manager. See the *Administrator's Guide* (NTP 555-7101-301).	■ Connect the outputs. ■ Optionally select a voice item to be used as a greeting. ■ Specify the number to which callers transfer.
Date Control	Routes callers to different blocks in an application depending on the date.	■ Connect the outputs. ■ Configure the date period.
Day Control	Routes callers to different blocks in an application based on the day of the week or whether the day is a holiday.	■ Connect the output for each day. ■ Specify whether the day of the week should be checked against a holiday schedule.
Fax Select	Allows callers to select an associated fax item for same-call or callback delivery. (See Chapter 6, "Working with fax items.")	■ Connect the outputs. ■ Associate a fax item with the Fax Select block.
Fax Send	Delivers selected faxes via same-call or callback delivery. (See Chapter 6, "Working with fax items.")	■ Connect the outputs.

Block	Purpose	Setup required
Language Select	Changes the current language for all system prompts.	■ Connect the output. ■ Choose the language in which system prompts play. More than one language can be ordered and installed on the system. You can select any installed language.
Menu	Provides callers with a list of choices that correspond to the keys on the phoneset.	■ Connect the outputs. ■ Identify the voice item containing the menu choices. ■ Identify the voice item to be played when there is no response. ■ Identify the voice item to be played when an invalid response is received.
Password Check	Verifies passwords entered by callers and gives callers with correct passwords access to the protected areas of the application.	■ Connect the outputs. ■ Define up to five passwords. ■ Optionally, identify a voice item to be used for a greeting.

Block	Purpose	Setup required
Thru-Dial	Provides an automated attendant service that transfers callers to the extension they choose.	■ Connect the outputs. ■ Identify a voice recording to play as the greeting. ■ Specify whether callers enter an extension, enter the name of the person they want to call, or both. ■ Select a restriction/ permission list to determine the type of extension numbers (for example, long distance) that callers can access.
Time Control	Routes callers to different blocks in an application based on the time of day.	■ Connect the outputs. ■ Configure the time period.

System blocks

The following table describes the blocks in the System table, and the setup they require. System blocks allow you to access system services from within the application. For more information, see the online Help.

Block	Purpose	Setup required
Custom Commands	Allows callers to create custom commands for the Speech Activated Messaging system (for example, recording a synonym for a command, or recording a word or phrase in another language as a synonym for a command).	■ None
Express Voice Messaging	Transfers callers to the Express Voice Messaging service and lets them leave a voice message in a mailbox.	■ Determine whether callers leave messages in mailboxes that they specify or in a mailbox that you specify.
Express Fax Messaging	Transfers callers to the Express Fax Messaging service and enables them to leave a fax message in a mailbox.	■ Determine whether callers leave fax messages in mailboxes that they specify or in a mailbox that you specify.
Fax Item Maintenance	Transfers callers to the Fax Item Maintenance service, which lets a caller edit fax items.	■ None

Block	Purpose	Setup required
Multimedia Messaging	Transfers callers to the Multimedia Messaging service, which lets callers use a DTMF phoneset to access their mailboxes for maintenance, for message retrieval and composition.	■ None
Speech Activated Messaging	Transfers callers to the SA Messaging service. This service lets callers use paced speech recognition to access their mailboxes for administration, and for message retrieval and composition.	■ Specify whether callers can use paced speech recognition.
Voice Item Maintenance	Transfers callers to the Voice Item Maintenance service, which lets them edit voice items.	■ None

Imported Application block

The following table describes the blocks on the Imported Application palette, and the setup they require. For more information, see the online Help.

Note: The Imported Application palette is only available if you have imported one or more applications into the application that you have open. If there are no imported applications, only the Basic and System palettes are available.

Block	Purpose	Setup required
Imported application	The palette contains a block for each imported application. When you drag the block for an imported application into the application window, you are placing the imported application in your application. If the functionality of the imported application changes, it updates in all the applications that imported it.	■ Connect the imported application to at least one output. Connect the Continue and End outputs of the imported application.

Connecting blocks

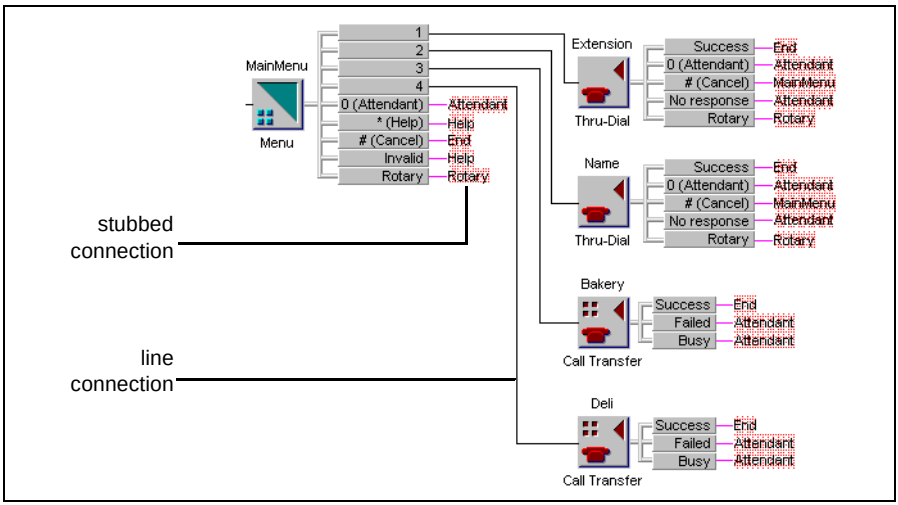
Types of connections

The ways that you connect the functions in an application determine the possible paths a call can take, or the call flow.

You can represent connections in two ways:

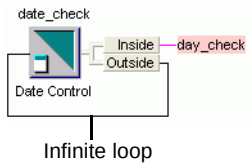
- **line connections**—A line joins the output to the connected block. These connections make the call flow easier to see, but in a complex application, too many crossing line connections are hard to interpret.
- **stubbed connections**—The name of the connected block appears to the right of the output. These connections are neater, but not as easy to follow at a glance.

The following illustration shows these types of connections:

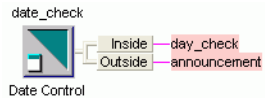


Avoiding infinite loops

Always connect the output from one block to a different block. If you connect a block to itself, you create an *infinite loop*. Infinite loops consume system resources, which can result in slow system performance and ring-no-answer behavior.



This date_check block contains an infinite loop. Callers who use the application on a date outside of the configured date ranges are stuck at this block in the application.



This date_check block is properly connected. When callers use the application on a date outside of the configured date range, they hear an announcement and continue through the application.

If you enable Program Diagnostics, Application Builder checks for single-block inifinite loops when you save an application. Application Builder does not detect infinite loops that consist of two or more blocks.

Application Builder does not generate an error if you create an infinite loop with the Menu block. Since the Menu block waits for the caller to make a menu selection, it does not cause the application to consume system resources.

Block interactions

Introduction

This section describes how the different blocks interact, and how you can use these interactions in your applications.

Announcement block and blocks requiring user interaction

Interruption and buffering

You can configure your Announcement block to accept and buffer menu keys. If you do, when the caller enters a menu key (1–9), that key interrupts the announcement and the application passes it to the next block. The result varies depending on what kind of block is next.

Announcement	Key buffering stops and the key is deleted from the buffer.
Menu	The menu choices greeting does not play, and the buffered key is used as a menu selection.
Thru-Dial	The thru-dial greeting does not play, and the buffered key is used as the first digit in the thru-dial number.

Uninterruptible greetings

Both the Menu and Thru-Dial block greetings are interrupted when the caller presses a key. To prevent the caller from interrupting these greetings, put the greetings in an Announcement block, and configure the Announcement block to be uninterruptible.

Rotary Dial block and blocks requiring user interaction

In the first block requiring user interaction, if the caller does not respond, the application assumes that the caller is using a rotary dial phoneset. The application follows the path for the Rotary output, which (by default) invokes the Rotary Dial block.

The Rotary output is used only for the first block requiring user interaction. For all subsequent blocks, if the user does not respond, the application uses the No response output.

Example: No response at the Menu block

In your sample application, a caller with a rotary telephone reaches SuperValue Grocery store. The caller hears the menu, but is unable to respond. After the no response period elapses, the application uses the Rotary output, which invokes the Rotary Dial block. The caller is transferred to an attendant.

Example: No response at a subsequent block

In your sample application, the caller with a tone-dial phoneset hears the menu and presses 1 to dial an extension. At the Thru-Dial block, the caller realizes she has forgotten the extension, and looks in her address book. Meanwhile, the time-out period elapses, and the application uses the No response output, which invokes the Attendant block.

End block and system blocks

All system blocks connect to the End block to terminate the application before transferring callers to the system service.

Guidelines for designing the call flow

Introduction

Consider the following guidelines when you design an application:

- A pink border around a block indicates that you must configure or connect it to complete the application. Connect the block's outputs to other blocks to define the path for the call.
- Always connect an output from one block to a different block. Avoid inifinite loops that are created by connecting a block's output back to the same block. Infinite loops can raise SLEE CPU consumption to abnormally high levels, resulting in ring-no-answer behaviour or system slowdown.
- Saving and closing an application are different processes. When you save an application, Application Builder updates the server, but the application remains locked until you close it. When you close an application, Application Builder unlocks it so that other administrators can view or maintain it.
- An application must be complete before you can export it or put it into service.

Section B: Lesson - Designing the call flow

In this section

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Adding a Day Control block	75
Adding Time Control blocks	77
Adding Announcement blocks	80
Adding a Menu block	86
Adding the Thru-Dial blocks	90
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Documenting and printing your application	97
Next steps	100

Overview

Introduction

This lesson shows you how to create and document the call flow for the example automated attendant application that you created in the previous lesson.

As you build the application, refer to the diagram on page 45 to view the overall call flow.

Learning more about blocks

For details about each type of block and working with blocks, outputs, and connections to design the call flow of your application, refer to the Designing Applications book in the Application Builder online Help.

Adding a Day Control block

Introduction

In this section, you add the Day Control block to define call handling based on the day of the week.

Holidays

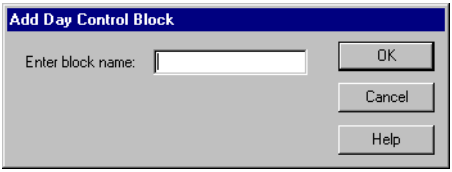
When you configure the Day Control block, you can choose whether to check a holiday schedule. You can define the holiday schedule in CallPilot Manager. If you use the holiday schedule, you associate a Holiday output with the desired call handling. When the application receives a call on a defined holiday, the call is routed to the holiday call functions. For example, if Christmas falls on a Monday, calls arriving on Christmas day are given holiday treatment rather than Monday treatment.

To add the Day Control block

1 Drag the Day Control block from the palette to the application window. (To drag a block, move the cursor to the block, press the left mouse button, and hold it while you move the block to the desired location.)

Tip: If the Palette is not displayed, choose View → Palette.

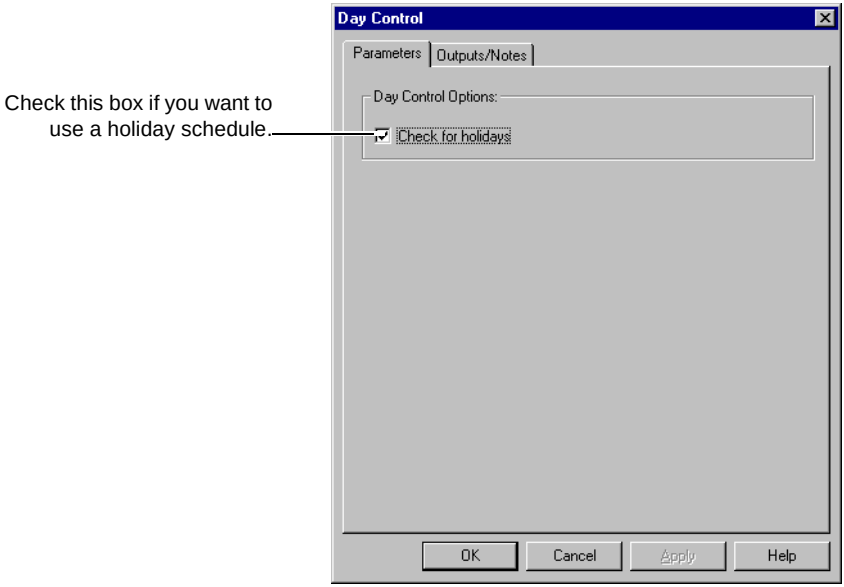
Result: The Add Day Control Block dialog box opens.



2 Enter a name for the block (for example, **Days**), and then click OK.

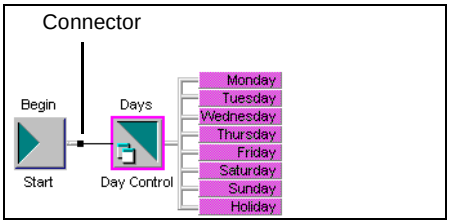
Result: The Day Control block is added to the window. Note that the block border and all of the outputs are pink.

3 To configure the block, double-click it, complete the Parameters tab, and then click OK.



4 Connect the Start block to the Day Control block. To do so, click the left mouse button (left-click) on the connector for the Start block (the black square to the right of the Start block), and then left-click the Days block.

Result: The pink border around the Start block disappears, and a connecting line appears between the Start and Day Control blocks.



You must connect the Day Control block outputs, but before you can do so, you must add the blocks associated with the outputs.

Adding Time Control blocks

Introduction

In the sample automated attendant application, the SuperValue Grocery store is open from 8:00 a.m. to 8:00 p.m. on weekdays, and from 9:00 a.m. to 6:00 p.m. on Saturdays. It is closed on Sundays and holidays.

This section shows you how to add two Time Control blocks:

- The first block, WeekdayHours, handles calls arriving during weekdays. This block determines whether a call is arriving inside or outside business hours (that is, 8:00 a.m. to 8:00 p.m.).
- The second block, SaturdayHours, handles calls arriving on Saturdays. This block determines whether a call is arriving inside or outside business hours (9:00 a.m. to 6:00 p.m.).

Time Control blocks allow you to handle calls differently, depending on whether they fall inside or outside the specified period.

Note: For a Time Control block, you can define up to five time periods. For example, you can include the following periods in your Time Control block:

- 9:00 a.m. – 10:30 a.m.
- 10:45 a.m. – 12:00 p.m.
- 1:00 p.m. (13:00) – 3:00 p.m. (15:00)
- 3:15 p.m. (15:15) – 5:00 p.m. (17:00)

This schedule allows you to give outside hours handling to calls arriving during coffee and lunch breaks.

To add a Time Control block

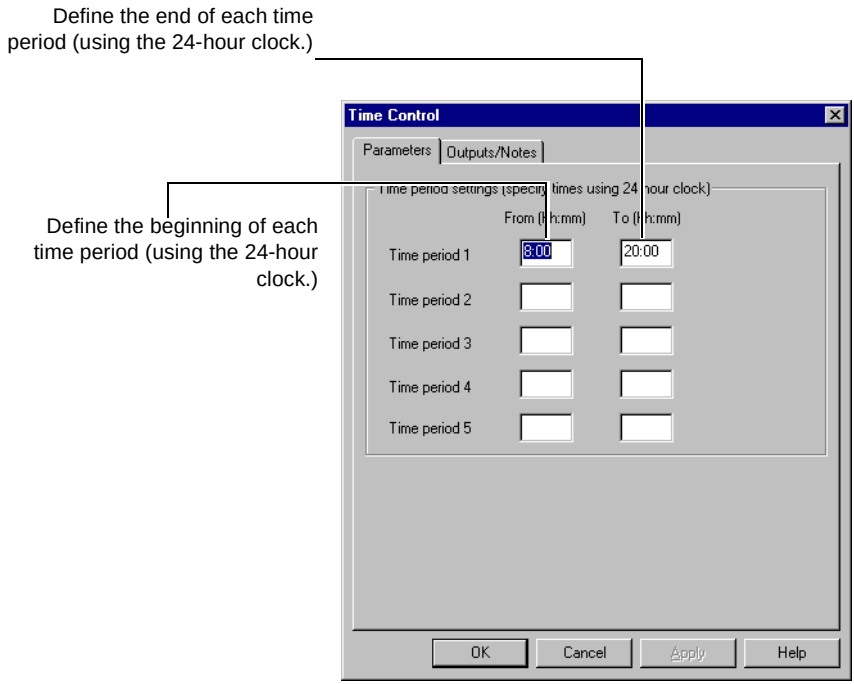
1 Drag the Time Control block from the palette to the application window.

Result: The Add Time Control Block dialog box opens.

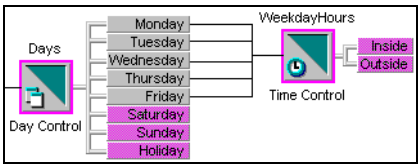
2 Enter a name for the block (for example, **WeekdayHours**), and then click OK.

Result: The Time Control block is added to the window. Note that the block border and the outputs are pink.

3 To configure the block, double-click it, complete the Parameters tab, and then click OK.



4 Connect the Time Control block to each of the weekday outputs of the Day Control block. To do so, hold down the Shift key and left-click Monday, Tuesday, Wednesday, Thursday, and Friday. Then left-click WeekdayHours.



5 Add another Time Control named **SaturdayHours**, and configure it with a time period from 9:00 to 18:00 (6:00 p.m.). Connect this Time Control to the Saturday output.

The Sunday and Holiday outputs are still unconnected. Since the store is not open on Sundays and holidays, you will connect these outputs to an announcement for nonbusiness hours in the next section of this lesson.

Adding Announcement blocks

Introduction

Calls arriving at SuperValue Grocery outside business hours hear an announcement that tells when the store is open, and provides the store's address.

This section shows you how to add the Announcement block that provides this announcement. An Announcement block is the primary means of playing voice recordings in an application.

Voice items

You assign voice items to an Announcement block in one of the following ways:

- Select a system prompt (see "System prompts" on page 106).
- Select an existing custom voice item.
- Create a new custom voice item, and either
  - record the announcement
  - import an existing recording for the announcement

This section shows you how to create a new custom voice item, but it does not describe how to import the voice recording. For information about creating and importing voice recordings, see Chapter 5, "Working with voice items."

Voice item IDs

Each voice item within an application must have a unique identifying number in the range from 1–3000.

You can use the same ID in two different applications. However, if you import or copy and paste a voice item into an application, you may have ID conflicts if two voice items have the same ID. Application Builder recognizes ID conflicts and lets you manually or automatically assign new IDs to the items you are importing or pasting. For more information about resolving name and ID conflicts, see the Troubleshooting book in the Application Builder online Help.

Interruption

When callers become familiar with your application, they may not need to hear all of the announcements. For example, a utility company has the following application:

Announcement: *Thank you for calling Metro Utilities, proud winner of the 2000 Metropolis Business of the Year Award. Our office is open from 9:00 a.m. to 5:00 p.m., Monday to Friday, and we are located at 100 Main Street, Metropolis.*

Menu: *Please choose one of the following four options, or remain on the line for assistance.*
To report problems with your service, press 1.
To reach our billing department, press 2.
If you know the extension of the person you want to reach, press 3.
To use our company directory, press 4.

A frequent caller may not want to hear the entire announcement. When you configure the Announcement block, you can choose whether to allow the caller to interrupt the announcement by entering the following:

- a menu key (1–9)
- the attendant key (0)
- the help key (*)
- the cancel key (#)

Metro Utilities' administrator allows callers to use the menu and attendant keys in the Announcement block. Therefore, when Eric Wilson calls, he can press a number from 0 to 9 as soon as the announcement begins. When he presses a number, the announcement is interrupted.

You may not want to allow callers to interrupt announcements. For example, a service outage has occurred in a section of Metropolis. To handle all calls arriving from the affected area, Metro Utilities' administrator has created a new announcement:

Announcement: *Thank you for calling Metro Utilities. We are currently experiencing a service interruption in the area bounded by Main Street, First Avenue, Water Street, and Third Avenue. Repair crews are on the scene, and service is expected to resume at 8:00 p.m.*

The administrator does not allow callers to interrupt this announcement with a menu or attendant key because she wants all callers to hear the message.

Passing a selected key to the next block

If you allow callers to interrupt an announcement, you can also specify whether the selected key is passed to the next block. This option is called *key buffering*. Key buffering is useful when an announcement is followed by a menu.

For example, Mai Win calls Metro Utilities after service has been restored, and hears the original announcement (*Thank you for calling Metro Utilities, proud winner of the...*). She is familiar with the menus, so she presses 2 to reach the billing department. The announcement terminates, and the 2 is passed to the Menu block. The menu prompt does not play, but Mai is transferred to Accounts Receivable.

Note: An Announcement block always stops key buffering initiated by a preceding Announcement block.

Pauses

You can add a pause after the announcement to allow the caller to note information provided in the announcement. Ensure the pause is not too long. Excessive pauses can frustrate callers.

Note: If an announcement plays multiple times, the pause occurs only after the last time the announcement plays.

To add an Announcement block

1. Drag the Announcement block from the palette to the application window.

   Result: The Add Announcement Block dialog box opens.

2. Enter a name for the block (for example, **Hours_Location**), and then click OK.

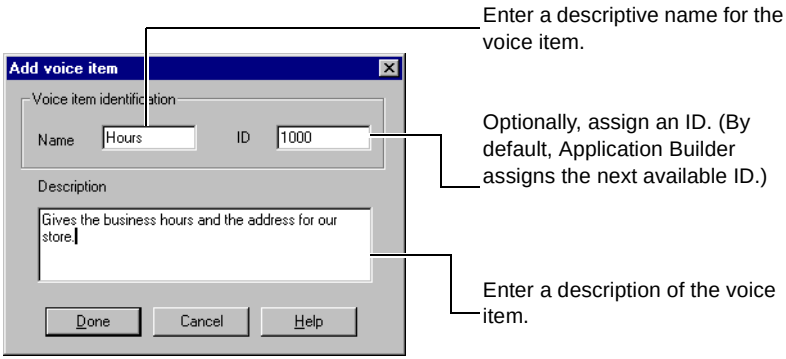
   Result: The Announcement block is added to the window. The block border and the outputs are pink.

3. To configure the block, double-click it.

   Result: The block's properties dialog box appears.

4. For this example, create a new custom voice item. In the Custom Voice Item box, select <new voice item>, and then click New.

5 Complete the Add voice item dialog box, and then click Done.



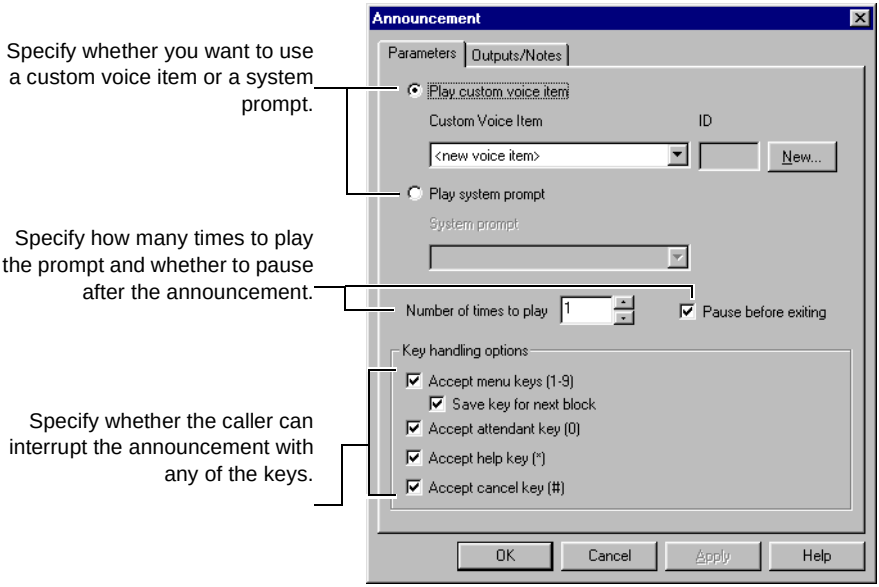
Note: Use the ID in Voice Item Maintenance to identify the voice item. The Description text prints when you print voice/fax items.

Result: The Edit voice item content dialog box appears.

6 You can record or import the voice item. For this example, do not add the content at this point. Click OK.

For information about recording or importing voice items, see Chapter 5, “Working with voice items.”

7 Complete the Parameters tab, and then click OK.



8 Connect the Sunday and Holiday outputs on the Days block to the new Announcement. To do so, hold down the Shift key and left-click the Sunday and Holiday outputs, and then left-click Hours_Location.

9 Connect the Outside output for the two Time Control blocks to the Announcement block. To keep the call flow tidy, and to avoid criss-crossing lines, stub the lines. Hold down the Shift key and left-click the Outside output for the WeekdayHours block, and the Outside output for the SaturdayHours block. Then, right-click the Hours_Location block.

10 After the announcement plays, the call terminates. Therefore, you must connect the output for the Announcement block to the End block. To do so, left-click the Hours_Location block, and then right-click End.



You have set up handling for calls arriving outside of business hours. Now, you can add the menu presented to calls arriving during business hours.

Adding a Menu block

Introduction

Calls arriving at the SuperValue Grocery store inside business hours are presented with the following menu:

Please choose one of the following four options, or remain on the line for assistance.
If you know the extension of the person you want to reach, press 1.
To access our company directory, press 2.
To reach our Bakery Department, press 3.
To reach our Deli Department, press 4.

This section shows you how to add a Menu block that gives callers these choices.

Guidelines for creating menus

Follow these guidelines when creating menus:

- Indicate the number of options so that callers know what to expect (for example, *Welcome to Landon Offices. Please choose one of the following five options.*).
- Limit the number of options to five to avoid overloading callers.
- Present options sequentially (for example, *For English, press 1; for French, press 2; for Italian, press 3; for Spanish, press 4.*).

Voice items

A menu block can have three voice items associated with it:

- Menu choices greeting

- No response prompt—If you allow retries when no response is received, this prompt is played if the caller does not respond within the No response period defined in CallPilot Manager.
- Invalid response prompt—If you allow retries after an invalid response, this prompt is played when the caller presses an invalid key.

You can assign these voice recordings in the same way as you assign voice recordings to announcements.

This section shows you how to create a new custom voice item for the Menu choices greeting, but it does not describe how to create or import the voice recording. (For information about creating and importing voice recordings, see Chapter 5, “Working with voice items.”) You use the default system prompt for the Invalid response prompt.

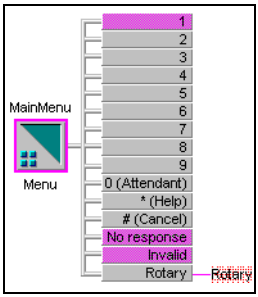
To add a Menu block

1. Drag the Menu block from the palette to the application window.

   Result: The Add Menu Block dialog box opens.

2. Enter a name for the block (for example, **MainMenu**), and then click OK.

   Result: The Menu block is added to the window. Note that the block border and the outputs are pink.

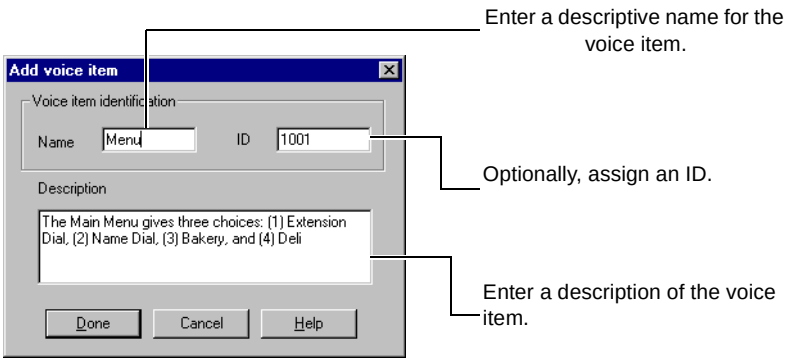


3. To configure the block, double-click it.

   Result: The block’s properties dialog box appears.

4. To create a new custom voice item for the Menu choices greeting, in the Menu choices greeting box, select <new voice item>, and then click New.

5 Complete the Add voice item dialog box, and then click Done.

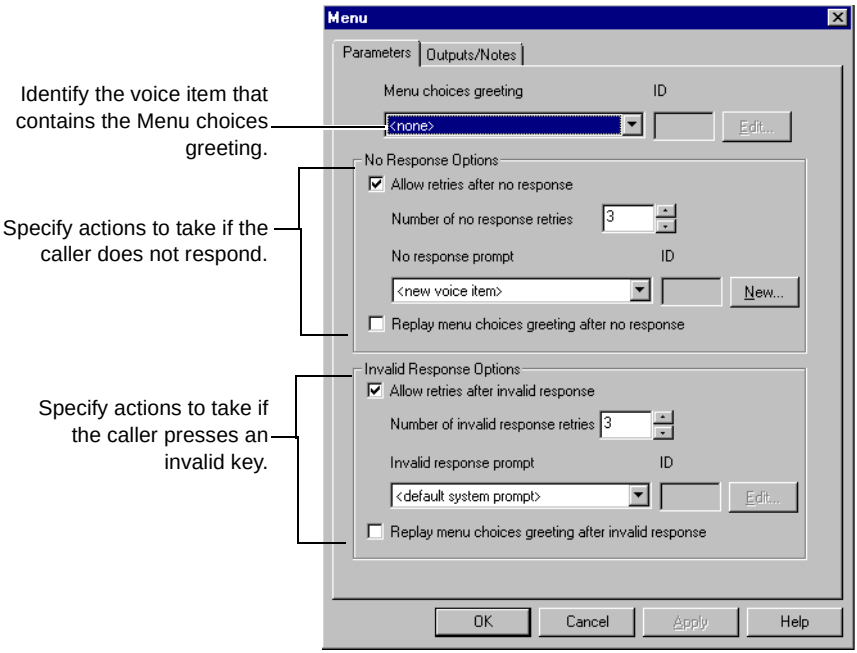


Result: The Edit voice item content dialog box appears.

6 You can record or import the voice item. For this example, do not add the content at this point. Click OK.

For information about recording or importing voice items, see Chapter 5, “Working with voice items.”

7 Complete the Parameters tab, and then click OK.



8 Hide the menu key outputs you are not using. To hide the outputs for menu key 5, right-click the MainMenu block, and then choose Hide/Show Outputs → 5. Repeat this step to hide outputs 6 to 9.

9 Connect the No response output to the Rotary block.

Note: This is the first block that expects a response from the caller. If the caller does not respond, it may be because he or she is using a rotary phone.

10 Connect the Cancel output to the End block, using the right mouse button.

11 Connect the Attendant output to the Attendant block.

12 Connect the Inside outputs on the two Time Control blocks to the new MainMenu block.

Now you must add the Thru-Dial and Call Transfer blocks that are invoked from the menu.

Adding the Thru-Dial blocks

Introduction

Callers to the SuperValue Grocery store can dial a specific individual, either by entering the extension or by using the company directory. To provide this ability, the administrator has added two Thru-Dial blocks to the application.

Name and number dialing

The Thru-Dial block can allow name dialing, number dialing, or both. If you allow both name and number dialing, callers who want to use the Name Dialing service must enter the name dialing prefix before entering the name. (The default prefix for the Name Dialing service is 11. The prefix is defined in CallPilot Manager.)

Note: If Name Dialing is not enabled in CallPilot Manager, callers cannot access the Name Dialing service.

Fixed-length extension numbers

Fixed-length extension numbers have a definite number of digits. For example, a phone number in your dialing area may have seven digits. Typically, fixed-length extension numbers begin with the same digits, called left-pad digits. For example, a company's main phone number is 686-0000. All company phone numbers begin with 686. These digits are the left-pad digits.

When you define fixed-length extension numbers and their left-pad digits, you save callers from having to enter prefix digits for locations that they dial frequently.

Note: Callers can enter fewer digits only if these digits are followed by the number sign.

Example

The ABC Company's main phone number is 555-0000. All employees at the company have their own phone numbers: Jonah Smith's number is 555-7624; Jessica Freedman's number is 555-8845. To set up a Thru-Dial block in a company application, specify that the fixed length number is seven. Seven digits make up each phone number. Since each number begins with 555, you define those three digits as left-pad. As a result, callers who use the Thru-Dial block to contact Jonah only enter 7624. Likewise, they only enter 8845 to reach Jessica.

Callers can enter some or all of the left-pad digits. If they enter all of Jonah's number, (that is, 555-7624) they still reach him. They also reach him if they dial 5-7624.

Variable-length extension numbers

Variable-length extension numbers have an indefinite number of digits, up to 30. If you define variable-length extension numbers, callers can enter up to 30 digits for an extension number.

Note: Callers must use the number sign (#) to terminate variable-length extension numbers.

Restriction/permission list

A restriction/permission list (RPL) limits the types of numbers that callers can dial from the Thru-Dial block. For example, an RPL can prevent callers from placing a long distance call, even if they dial the correct number. If an unauthorized caller attempts to dial a long distance number, the block plays a system default error message and asks the caller to try another number.

The administrator sets up RPLs in CallPilot Manager. For more information about RPLs, see the *Administrator's Guide* (NTP 555-7101-301).

Voice recordings

You assign voice items to the Thru-Dial block in the same way as you assign voice items in Announcement blocks. The following table lists the default system prompts for the Thru-Dial block:

Thru-Dial option	Content of prompt
Only name dialing is allowed.	Please enter the name of the person you want to reach, followed by number sign. To enter a name, spell the last name, and then spell the first name.
Only number dialing is allowed, and the numbers are variable length.	Please enter the number of the extension you want to dial, followed by number sign.
Only number dialing is allowed, and the numbers are fixed-length.	Please enter the number of the extension you want to dial.
Both name dialing and number dialing are allowed, and the name-dialing prefix is 11.	Please enter the number or the name of the person you want to reach, followed by number sign. To enter a name, press 1-1, spell the last name, and then spell the first name.

To add a Thru-Dial block

1. Drag the Thru-Dial block from the palette to the application window.

   Result: The Add Thru-Dial Block dialog box opens.

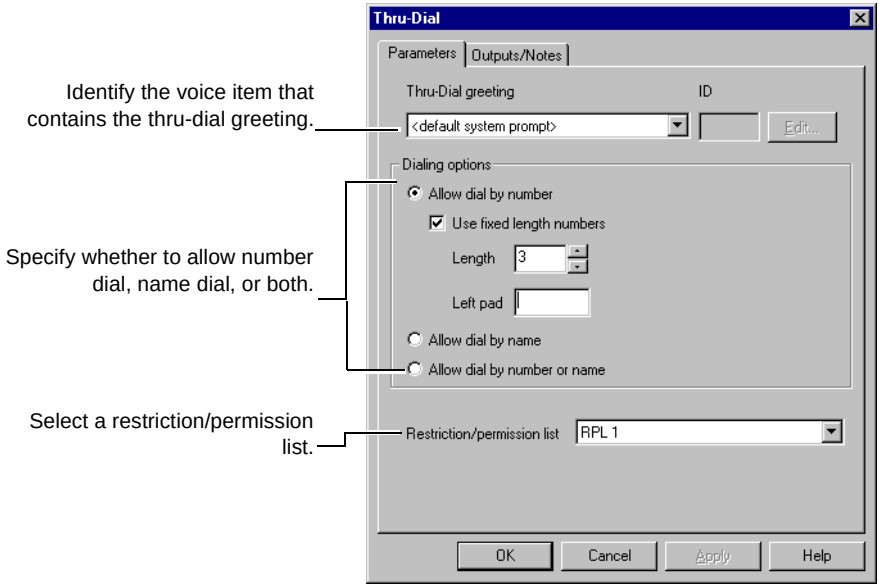
2. Enter a name for the block (for example, **Extension**), and then click OK.

   Result: The Thru-Dial block is added to the window. The block border and the outputs are pink.

3. To configure the block, double-click it.

   Result: The block's properties dialog box appears.

4. Complete the Parameters tab, and then click OK.



5 Connect the Cancel output to the MainMenu block, using the right mouse button.

6 Connect the Attendant and No response outputs to the Attendant block.

7 Hide the Rotary output by right-clicking the Extension block and choosing Hide/Show Outputs → Rotary.

Note: The application does not use this output because the Thru-Dial block is not the first block requiring user interaction.

8 Connect output 1 on the MainMenu block to the Extension block.

9 Repeat steps 1 to 7 to add, connect, and configure a Thru-Dial block with name dialing ability. Use the default system prompt.

10 Connect output 2 on the MainMenu block to the Thru-Dial block that you created in the previous step.

Adding the Call Transfer blocks

Introduction

From the main menu for the SuperValue Grocery, callers can transfer to the Bakery or Deli departments. To allow them to transfer, the administrator has added Call Transfer blocks to the application.

To add a Call Transfer block

1. Drag the Call Transfer block from the palette to the application window.

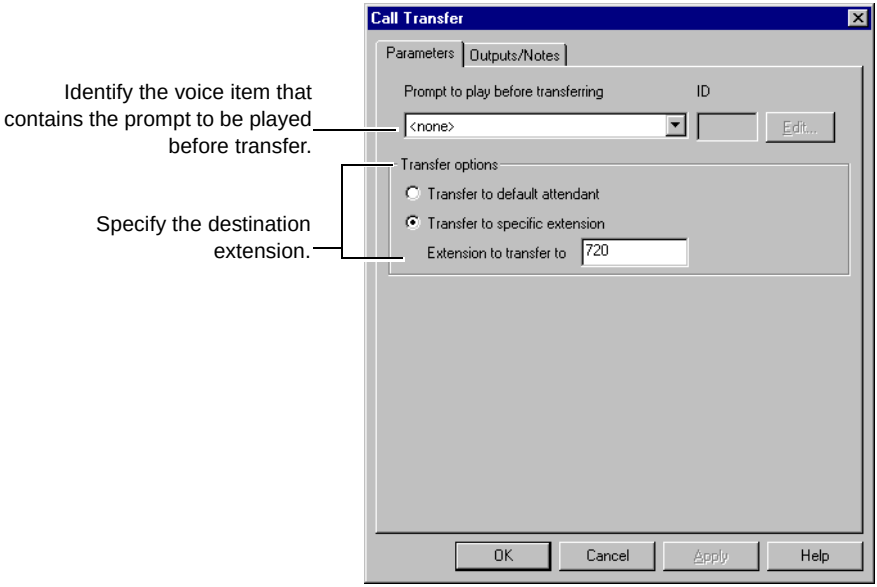
   Result: The Add Call Transfer Block dialog box opens.

2. Enter a name for the block (for example, **Bakery**), and then click OK.

   Result: The Call Transfer block is added to the window. The block border and the outputs are pink.

3. To configure the block, double-click it.

4. Complete the Parameters tab, and then click OK.



5 Connect the Failed and Busy outputs to the Attendant block.

6 Connect output 3 on the MainMenu block to the Bakery block.

7 Repeat steps 1 to 5 to create the Call Transfer block for the Deli department.

8 Connect output 4 on the MainMenu block to the Call Transfer block created in the previous step.

Completing your application

To complete the auotmated attendant application, perform these tasks:

1. Create another Announcement block named Help.
2. Connect the Help and Invalid outputs on the Menu block to the Help block.
3. Configure the Help block to accept the attendant and cancel keys, and to use a new voice item, HelpAnnounce.

4. Connect the Attendant output to the Attendant block, and the Cancel output to the Menu block.

   Note: If you use the default attendant, ensure that the default attendant is defined in CallPilot Manager. For more information, see the *Administrator's Guide* (NTP 555-7101-301).

Once your application is complete, you should add notes to explain its purpose and design. For information about documenting your application, see "Documenting and printing your application" on page 97.

Documenting and printing your application

Introduction

In the future, you—or someone else—may need to modify an application. To help you and other administrators to understand the purpose of an application and follow the call flow, you should provide some documentation. Application Builder allows you to document your application in two ways:

- add notes to blocks
- add notes to the application window

You can print the call flow and block details as a visual record of your application design. Notes that you added appear in your printouts.

To add a note to a block

1. Double-click the block you want to describe. For this lesson, double-click the Announcement block (**Hours_Location**).
2. Click the Outputs/Notes tab.
3. In the Notes box, type any additional information about the block. Since you have not recorded a voice item for the Announcement block yet, you can type a note to remind you that the voice item must be recorded.
4. Click OK.

To add a text note to the application window

In this procedure, you add a text note to the automated attendant application. The procedure assumes that the application is open in Application Builder.

1. Choose Edit → Create Text Note.
2. Position the pointer (+) where you want the text note to appear.

3 Click and, keeping the mouse button pressed, drag the pointer to make a rectangle.

4 Release the mouse button.

5 Type the text of the note.

6 Click anywhere outside the note to finish creating it.

Working with text notes

The following table describes how you can work with text notes. For detailed instructions, refer to the Application Builder online Help.

Action	Steps
Edit a text note	Double-click the text note and edit the text.
Change the appearance of a text note	1 Select the text note. 2 Choose Edit → Change Text Note Font. 3 Choose the desired font and font size, and then click OK. **Note:** To specify a default font, choose Options → Set Default Text Note Font.
Resize a text note	1 Double-click the text note. 2 Place the pointer on one side of the box. The cursor changes to a two-sided arrow (↔). 3 Drag the cursor to resize the box.
Move a text note	Drag the text note to the desired location.
Delete a text note	Click the text note and choose Edit → Delete.

Printing call flow information

You can print the call flow or print a list of blocks and their configuration.

To print the call flow

Choose File → Print Flow.

To print block information

Choose File → Print Block Details.

Next steps

Introduction

If you want to save changes to your application before you proceed to the next lesson, choose File → Save. For details about saving applications, see “Saving and closing applications” on page 175.

When you are ready to continue, the next step is to record the voice items for your application. See Chapter 5, “Working with voice items.”

Chapter 5

Working with voice items

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Section A: About voice items

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Overview of voice recordings

Introduction

Voice recordings provide your announcements, greetings, menus, and prompts. The following table lists the blocks that use voice recordings, and the function of the recordings in these blocks:

Block	Voice recordings used for
Announcement	announcement
Call Transfer	(optional) prompt
Menu	■ menu choices greeting ■ (optional) no response prompt ■ (optional) invalid response prompt
Password Check	(optional) password prompt
Thru-Dial	(optional) thru-dial greeting

Voice items are stored on the server. They can be accessed from any client computer, if you are not using Application Builder in stand-alone mode, or remotely with Voice Item Maintenance.

Online updating

All changes that you make to an application take effect as soon as you save the application. However, callers who are currently connected to the application continue to interact with the previously saved version. Only new callers interact with the new version.

Example

Currently, you have three announcements customized for

- morning
- afternoon
- after business hours

You want to reduce the number of announcements to two, using one announcement for both the morning and the afternoon.

A caller calls the application before you change the announcements. Since the caller accesses the application in the afternoon, she hears

Good afternoon. Thanks for calling Book Bonanza. If you know the number of the department you want to reach, press 1. If you don't know the department's number, press 2.

While the caller is interacting with the application, you use Application Builder to replace the morning and afternoon announcements with one announcement that plays during all business hours.

Hello. Thanks for calling Book Bonanza. If you know the number of the department you want to reach, press 1. If you don't know the department's number, press 2.

The caller who is connected to the application is unaware of the changes. After she hangs up, however, she realizes she must call Book Bonanza again because she forgot to ask about a book's availability. During the time it takes her to complete the call and then redial the number, you change the announcements and save the application. When the caller redials the application, she hears the new announcement.

Types of voice recordings

Introduction

CallPilot supports three types of voice recordings: system prompts, voice items, and customized prompts. You use all three types of voice recordings in Application Builder.

System prompts

System prompts are voice recordings that come with the system. You cannot delete any system prompts. However, you can use System Prompt Customization to edit some system prompts.

The following table lists the system prompts and their content:

Prompt name as it appears in Application Builder	Actual content of prompt
For more information, press star	For more information, press star.
Transferring to an attendant	Transferring to an attendant. One moment please.
For help, press star	For help, press star.
Please try again	Please try again.
<beep>	<<Beep>>
Please contact your administrator	Please contact your administrator.
<beep> No operator is available	<<Beep>> No operator is available.
<beep> That number is busy, try later	<<Beep>> That number is busy. Please try again later.

Prompt name as it appears in Application Builder	Actual content of prompt
<beep> Number cannot be reached	<<Beep>> That number cannot be reached from this service. Please try again.
<beep> Your call cannot be completed	<<Beep>> Your call cannot be completed at this time. Please try again later.
<beep> Selection not recognized	<<Beep>> That selection is not recognized.
<beep> Please make another choice	<<Beep>> That selection is not recognized. Please make another choice.
<beep> Invalid password	<<Beep>> That password is incorrect. Please contact your administrator for assistance.
<beep> Invalid password, try again	<<Beep>> That password is incorrect. Please try again.
<beep> Invalid password, transferring	<<Beep>> That password is incorrect. Transferring to an attendant; one moment please.
Maximum fax selections reached	You have reached the maximum number of selections that may be made in one call. If you would like to make additional selections, please call again.
Goodbye	Goodbye. **Note:** You can customize, or edit, the “Goodbye” system prompt by using System Prompt Customization.

Voice items

Voice items are custom-made voice recordings. You can use a phoneset to record your own voice items, or you can import a sound file in WAV format.

Voice items are stored on the server. They can be accessed from any client, as well as with Voice Item Maintenance.

Each voice item within an application has a unique identifying number in the range from 1–3000. (You can use the same ID in two different applications.)

Customized prompts

Customized prompts are system prompts that you have replaced, or customized, with a phoneset recording or a sound file in WAV format. You can customize the following system prompts in System Prompt Customization:

- *CallPilot from Nortel Networks*
- *Goodbye*
- *Express Messaging to mailbox?*
- *You have dialed the Express Messaging Service. To leave a message, enter the mailbox number, followed by number sign.*
- *You have dialed the Express Messaging Service. To leave a message, enter the mailbox number or the name.*
- *Hello. You have a message from:*
- *Hello.*

Guidelines for voice recordings

Describe character keys

The character keys on the keypad of a phoneset have various names. Describe these keys accurately and consistently. Also, use the same descriptions as other services:

- Call the * key “the star key,” not “asterisk.”
- Call the 0 key “the zero key,” not “oh.”
- Call the # key “the pound key” or “number sign” or whatever term is most common in your country.

Denote keys for responses

Applications often require users to give “yes” or “no” responses. In such applications, be both consistent and conventional. Use 1 to denote Yes and 2 to denote No.

Give examples

A description sometimes does not give callers enough information about the information they must enter. When a description is unclear, follow it with a specific example.

For example, suppose that a Thru-Dial block expects callers to enter both an area code and a phone number. The voice recording associated with the block should provide an example of which digits to enter.

Please enter the phone number you want to call, preceded by 1 and the area code. For example, enter 1 4 1 6 5 5 5 1 0 0 0.

Organize in goal-action sequence

Identify the result of an action before stating the action. For example, a recording says

To speak to a customer representative, press 5 now.

Use everyday language

For example, you can call a telephone a telset, but telset is jargon, and jargon confuses callers. Use everyday, familiar language when you write recordings.

Write in the active voice

A voice recording in active voice is clear: “To reach the Accounting department, press 1.” Passive voice confuses callers because it only implies what they should do: “To reach the Accounting department, the number one key should be pressed.”

Make affirmative statements

Tell callers what *to do* instead of what *not to do*.

Negative statement: *Do not hang up.*

Affirmative statement: *Please stay on the line.*

Use affirmative statements to avoid negative conditionals and double negatives in your voice recordings.

Negative conditional

A condition statement that is expressed in the negative (that is, a statement that is based on a condition *that is not true*). For example, “*If you do not want to hear any more information, press 2.*” The “if” makes the sentence conditional, and the “do not” makes it negative.

Double negative

A grammatically incorrect construction that includes two negatives, which effectively cancel each other out. For example, "*Do not do nothing.*" If you do "not" do "nothing," you actually do something.

Give callers useful feedback

Voice recordings should indicate when a selection is incorrect, and then list the valid options from which callers can choose. If callers press an incorrect key, they do not want to hear "*error*," "*invalid response*," or "*unable to process*." None of those recordings indicates what callers should do next.

Guidelines for creating recordings

Record in a quiet area

Ensure that no noise interferes. Turn off any background music. Background noise can interfere with a caller’s ability to understand the recording.

Be consistent

- Use one professional voice. The voice you record projects your organization’s identity. Consider whether to use a male or female voice, and whether the voice sounds formal or casual. For consistency, use only one voice per application.
- Record all voice items during one session, if possible.
- Use the same recording device for the voice. For example, use only the phoneset or the computer microphone.

How to use voice items created for Meridian Mail Voice Services

Introduction

You can reuse voice items created for Meridian Mail Voice Services so that you do not waste time recreating existing announcements and voice prompts.

You can migrate the following items from Voice Services to Application Builder:

- announcements
- fax items
- menus

This section describes how to use migrated announcements and menus. For information about using migrated fax items, see “Using faxes created for Meridian Mail Voice Services” on page 136.

For information about migrating voice items from Meridian Mail Voice Services, refer to the *Meridian Mail to CallPilot Migration Utility Guide*.

Contents of a menu

Each menu from Voice Services contains voice prompts for

- the greeting
- caller choices
- the 1–9 menu keys

How to identify migrated voice items

Announcements and menus migrated from Meridian Mail Voice Services are identified by the migrated service type and a service ID number.

Menus

A migrated menu name has a prefix of “Menu”, followed by its ID from Voice Services. For example, a Voice Services menu with an ID of 64 appears as “Menu64” in Application Builder. The description of the application is “Migrated from Menu Service 64.”

Announcements

A migrated announcement has a prefix of “ANN,” followed by its ID from Voice Services. For example, a Voice Services announcement with an ID of 65 appears as “ANN65” in Application Builder. The description of the application is “Migrated from Announcement Service 65.”

Within that file, you see the announcement with both a name (Announcement) and an ID (1010).

Format of migrated voice items

Voice Services distinguishes between announcements and prompts. You can use announcements in multiple services, but you can only use a voice prompt in one service. In Application Builder, both announcements and voice prompts are classified as voice items.

Access

On the server, you access migrated announcements and the voice prompts of menus in the same way that you access voice items.

Use

Voice items are compatible with all applications. For example, you can use the same voice item in multiple applications just as you used an announcement in multiple services. As a result, you now can use all your existing voice prompts in multiple applications.

Applications that contain migrated voice items

You can use migrated voice items in new applications and in rebuilt applications that existed in Meridian Mail Voice Services. Consider when to build both types of applications.

New applications

You can create new applications that use migrated voice items either before or after the voice items are migrated from Voice Services.

If you create new applications before migration, you save time. However, you can complete the applications and use them only after migration.

Rebuilt applications

You can rebuild applications that use migrated voice items either before or after the voice items are migrated from Voice Services.

You save time if you rebuild applications before migration. However, you can complete the applications and use them only after migration.

You can do everything at once if you rebuild applications after migration. You can paste the voice items into the applications while you create them. Also, the migrated voice items can help you remember what to rebuild.

Section B: Lesson - Managing voice items

In this section

Recording a voice item 118
Importing a voice item 121
Working with voice items 123
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Recording a voice item

Introduction

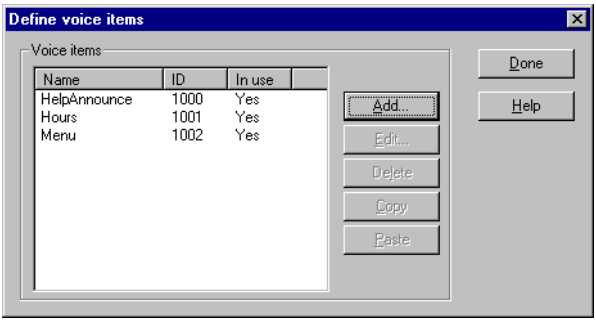
In the previous chapter, you created custom voice items for use with your blocks. However, the voice items have no voice content. In this section, you use a phoneset to record the voice content for a voice item.

If you need to change the recording later, you can rerecord the voice item. Your new recording replaces the previous recording.

To record a voice item

1. In Application Builder, open the application for which you want to record the voice content.
2. Choose Define → Voice items.

   Result: The Define voice items dialog box appears.



3 Select the voice item to record, and then click Edit.

Result: The Edit voice item dialog box appears.



4 In the Name box, type a name for the voice item.

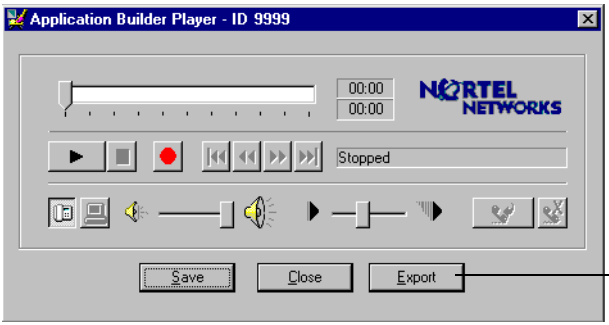
5 Click Record.

Result: The Specify Phoneset dialog box appears.



6 In the Specify Phoneset box, type the number of the phoneset you want to use for recording, and then click OK.

Result: Application Builder Player opens.



If desired, you can click Export to save your recording as a WAV file.

7 Click Record.

8 Answer the phone when it rings.

9 When you hear a beep, say the content of the voice item, and then click Stop.

10 To listen to the recording, click Play.

11 If you do not like the recording, record over it.

12 When you are satisfied with your recording, click Save.

13 Hang up the telephone, and then close Application Builder Player.

Importing a voice item

Introduction

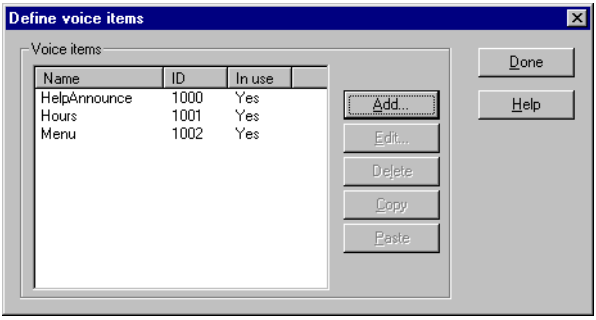
If you have a prerecorded sound file in the correct format, you can import it into Application Builder. Sound files must be mono 8-bit or 16-bit files in WAV format, with a sampling frequency rate of 11 kHz, 22.05 kHz, or 44.1 kHz. You can import sound files from anywhere on your client computer network.

If you want to change the content of the voice item later, you can import a new file. The new recording replaces the previous recording.

To import a voice item

1. In Application Builder, open the application for which you want to import the voice content.
2. Choose Define → Voice items.

   Result: The Define voice items dialog box appears.



3 Select the voice item into which you want to import, and then click Edit.

Result: The Edit voice item dialog box appears.



4 Click Import.

5 Select the sound file that you want to import.

6 Click Open.

7 Click OK.

8 Click Done until you return to the application window.

Working with voice items

Introduction

You can work with your voice items using either Application Builder or Voice Item Maintenance. This section lists the voice item maintenance procedures you can perform.

In Application Builder

Action	Steps
Edit the name or description of a voice item	1 Choose Define → Voice items. **2** Select the voice item to edit, and then click Edit. **3** Make the desired changes, and then click Done.
Delete voice items	1 Choose Define → Voice items. **2** Select the voice item to delete. **3** Click Delete. **Note:** You cannot delete a voice item that is used by an application.
Copy a voice item to the clipboard	1 In the application containing the voice item to copy, choose Define → Voice items. **2** Select the voice item you want to copy. **3** Click Copy. **Note:** When you copy a block from one application to another, any associated voice items are also copied to the destination application.

Action	Steps
Paste a voice item from the clipboard into the current application window	1 Choose Define → Voice items. **2** Click Paste. **3** If the application already contains a voice item with the same name or ID as the voice item you are pasting, Application Builder prompts you to resolve the name or ID conflicts. You can accept the new name and ID assigned by Application Builder, or specify your own.
Print a list of all voice and fax items	Choose File → Print Voice/Fax Items.

Using Voice Item Maintenance

Voice Item Maintenance (VIM) allows you to maintain voice items from a remote location, using a telephone.

Before you use Voice Item Maintenance to maintain the voice items in an application, define a telset maintenance password for the application.

To use Voice Item Maintenance, you must know

- the telephone number for the Voice Item Maintenance service
- the ID of the application that contains the voice item you want to modify
- the telset maintenance password
- the ID of the voice item

To define a telset maintenance password

1 In Application Builder, open the application for which you want to use Voice Item Maintenance.

2 Choose File → Properties.

3 Click the Security tab.

4 Select the telset maintenance password check box, and type the password in the Telset maintenance password and Password confirmation fields.

5 Click OK.

6 Save and close the application.

Note: The minimum length for a password is defined in the Security section of CallPilot Manager.

Tasks in Voice Item Maintenance

You can perform the following tasks with Voice Item Maintenance:

Action	Steps
Log on to Voice Item Maintenance	1 Dial Voice Item Maintenance. 2 Enter the ID of the application that you want to edit, and then press number sign (#). 3 Enter the telset maintenance password for the application, and then press number sign (#). 4 If the application contains multiple voice items, the program prompts you to enter the ID of a voice item. Enter the ID of the appropriate voice item, and then press number sign (#).
Select another voice item	1 Press 6. 2 Enter the ID of the voice item, and then press number sign (#).
Select another application	1 Press 81. 2 Enter the ID of the application, and then press number sign (#).

Action	Steps
Record voice items	1 Press 5. **2** Speak clearly to record your message. **3** Press number sign (#). **4** To listen to the recording, press 2. **5** To rerecord, follow steps 1 to 3. **6** To delete the recording, press 76.
Change the telset maintenance password	1 Press 84. **2** Enter the old password, and then press number sign (#). **3** Enter the new password, and then press number sign (#). **4** Enter the new password again, and then press number sign (#). **Note:** The minimum length for a password is defined in the Security section of CallPilot Manager.
Exit Voice Item Maintenance	Press 83.

Next steps

Introduction

If you want to save changes to your application before you proceed to the next lesson, choose File → Save. For details about saving applications, see “Saving and closing applications” on page 175.

When you are ready to continue, the next step is to add fax items to your application. See Chapter 6, “Working with fax items.”

If you want to skip the next few lessons for now, you can learn how to set up a completed application as a service. See “Putting applications into service” on page 177.

Chapter 6

Working with fax items

In this chapter

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Using faxes created for Meridian Mail Voice Services 136

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Section A: About fax items

In this section

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Using faxes created for Meridian Mail Voice Services 136

What are fax items?

Introduction

If your CallPilot system includes fax messaging, you can make faxes available from your applications. For example, you can allow callers to request a map of your location, a price list, or a list of frequently asked questions.

A fax item consists of two parts:

- fax file
- confirmation prompt—A voice recording that gives callers information about a fax.

  Example: *"List of weekly specials for SuperValue Grocery."*

Note: If the confirmation prompt is unrecorded, it does not play. However, if it was recorded and contains only background noise, it does play.

Fax items are stored on the server. They can be accessed from any client computer that has a connection to the server, or remotely with Fax Item Maintenance.

Each fax item within an application has a unique identifying number in the range from 1–3000. (You can use the same ID in two different applications.)

Adding fax capability to applications

To add fax options to your applications, you use the following blocks:

- Fax Select—Allows a caller to select the associated fax item for same-call or callback delivery.
- Fax Send—Delivers selected faxes via same-call or callback delivery.

Note: Selected faxes are automatically delivered when an error occurs in the application, when the caller hangs up, or when the application encounters one of the following blocks:

- Call Transfer
- End
- Thru-Dial
- system blocks (Express Voice Messaging, Express Fax Messaging, Fax Item Maintenance, and so on)

The session profile

To include fax items in any application, define fax options in the session profile for that application (see “Setting up the session profile for applications” on page 180). The session profile determines how many faxes callers can request during one call and how the system delivers those faxes.

Maximum number of faxes per call

In the session profile, specify both the maximum number of faxes and the maximum number of fax pages that a caller can receive during one call. When a caller reaches the first maximum number in an application, a warning message plays and the application takes the caller to the next block.

Types of fax delivery

In the session profile, you also configure the type of fax delivery the system uses:

- same-call delivery

  With same-call delivery, the caller—who must be at a fax phone—receives faxes after selecting them. Same-call delivery avoids billing problems because the caller pays any long distance charges.

- callback delivery

With callback delivery, the caller provides a fax number to which the system delivers faxes. This callback number must be validated against the restriction/permission list, which you also configure in the session profile. For example, a restriction can prevent the system from calling back a long distance fax number.

- caller's choice delivery

  With caller's choice delivery, the system prompts callers to indicate whether they want either same-call or callback delivery.

Online updating

All changes that you make to an application take effect as soon as you save the application. However, callers who are currently connected to the application continue to interact with the previously saved version. Only new callers interact with the new version.

Example

You maintain applications for a company that sells swimming pools and supplies. One night, your supervisor calls you at home and asks you to update the fax that lists available chemicals immediately, because the sales representatives are at a conference and need the information. Your supervisor faxes you the updated list.

You call Fax Item Maintenance. You identify the application and the fax item by ID. Then, you scan the updated list into the item.

While you are scanning the fax, a sales representative calls the application to get the list. You save the fax item and the application before he selects the list. However, he receives the out-of-date list because he accessed the application while you were editing it, but before it was saved.

The sales representative calls to ask why the list has not been updated. You explain that he did not get an updated list because he called while you were making the changes. After the new list is available, you can advise all sales representatives to pick up the new list.

Fax block interactions

Fax Select block and default fax delivery

If faxes have been selected with a Fax Select block, but not delivered by a Fax Send block, automatic fax delivery occurs when one of the following events occurs:

- the caller hangs up
- an error occurs in the application
- the application encounters one of the following blocks
  - Transfer
  - End
  - Thru-Dial
  - system blocks (Express Voice Messaging, Express Fax Messaging, Fax Item Maintenance, and so on)

Using faxes created for Meridian Mail Voice Services

Introduction

You can migrate the following items to Application Builder from faxes created for Meridian Mail Voice Services:

- announcements
- fax items
- menus

Contents of a fax item

Each fax item from Voice Services contains

- a fax
- a confirmation prompt

How to identify migrated fax items

All faxes migrated from Meridian Mail Voice Services are identified by names beginning with the prefix “FAX” followed by a Voice Services ID. For example, a Voice Services fax with an ID of 66 appears as “FAX66” in Application Builder. The description of the application is “Migrated from Fax Service 66.”

Within that file, you see the fax item with both a name and an ID (for example, FaxItem 1000).

Format of migrated faxes

In Application Builder, a migrated fax is in the same format as fax items.

Access

On the server, you access migrated faxes in the same way that you access fax items.

Use

You can use migrated faxes in any application that has fax functionality.

Applications that contain migrated faxes

You can use migrated faxes in new applications and in rebuilt applications that existed in Meridian Mail Voice Services. Consider when to build both types of applications.

New applications

You can create new applications that use migrated faxes either before or after the fax is migrated from Voice Services.

Rebuilt applications

You can rebuild applications that use migrated faxes either before or after the fax is migrated from Voice Services.

You can do everything at once if you rebuild applications after migration. You can paste the fax into the applications during creation. Also, the migrated fax can help you remember what to rebuild.

Section B: Lesson - Creating a fax application

In this section

The fax-on-demand application 140
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Creating the fax-on-demand application 144
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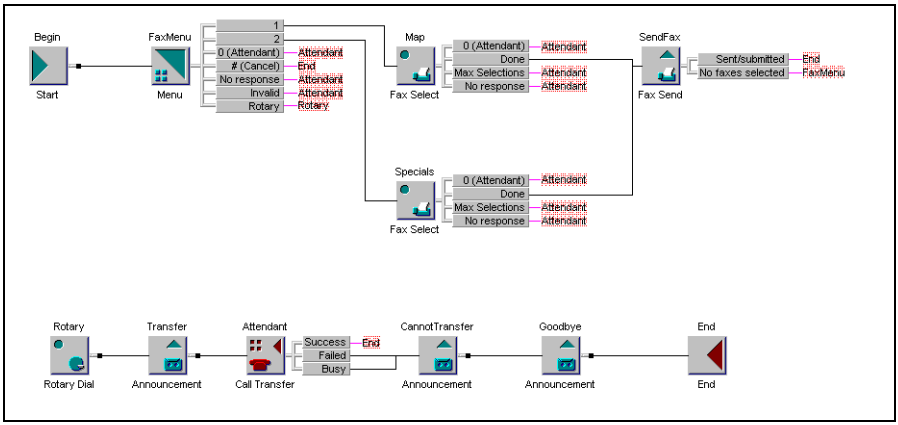
The fax-on-demand application

Introduction

This lesson demonstrates the fax feature by showing you how to create a fax-on-demand application for SuperValue Grocery store. The store has decided to add a fax-on-demand option to its menu, which allows customers to request either

- a map showing the location of the store
- a list of specials for the current week

The following illustration shows the application:



A menu allows callers to choose the fax item that they want. After a caller selects a fax item, the Fax Send block delivers it.

Creating the fax files

Introduction

The fax file that callers can request must be in tagged image file format, class F (TIFF-F). No other TIFF formats are supported. TIFF is an image format; even fax files containing only text are still considered to be images.

You can create a fax file in one of the following ways:

- Use the Print command in your application to output the file in TIFF-F format.

  During installation of CallPilot Desktop Messaging, a fax printer driver installs on the client computer. The name of this printer driver is Nortel Fax. When you print a document to this printer, your application creates a TIFF file.
- Use Fax Item Maintenance and a fax phone to scan the document into a file. (For more information, see “Scan a document into a fax file” on page 155.) The fax item must already have been created in Application Builder.

Guidelines for fax items

Include a logo

To help callers recognize and become familiar with your organization, include your logo on a cover page.

Include a cover page

Use a cover page to communicate essential information and company identity. You can send a custom cover page with all fax deliveries.

Use the header

The header, or trimtab, of a fax can contain useful information for recipients. For example, the number of the sending fax machine can appear in the header. Recipients can refer to that number if a transmission error occurs.

Formatting tips

- Leave large margins, especially at the top and bottom of fax pages. This ensures that information does not get cut off during transmission.
- Select a typeface that is easy to read. Avoid decorative typefaces. Do not use a font size smaller than nine points.
- Do a spell check on all faxes to ensure that they do not contain any errors. Spelling errors make your organization appear unprofessional.

To save a file as a fax

1. Open the document in the appropriate application.

   Example: Your Map document is in Microsoft Word format, so open it in Word.
2. Choose File → Print.
3. From the list of printers, select Nortel Fax.
4. Click Print or OK.

   Result: The Compose Fax window appears.
5. To add another document to the fax file, repeat steps 1 to 4.
6. Click Compose Fax to maximize the window.
7. To view the fax in your fax viewer software, select it in the Item list, and then click View/Edit Image. When you are finished, choose File → Exit.
8. To delete a file, select it, and then click Delete Item.
9. To scroll up and down the list of files, click Move Forward and Move Backward.
10. Click Save As.

11 From the Save as type list, select TIFF-F Files (*.tif).

12 In the File name box, type a name for the fax.

13 From the Save list, select the directory in which you want to save the fax.

14 Click Save.

Creating the fax-on-demand application

Introduction

First, create the new application in Application Builder, and then add the Menu block.

To add the Menu block

1. Create a new application, as you did in “Creating an application” on page 46.

   Result: The new application opens in the Application Builder application window.

2. Drag the Menu block from the palette to the application window.

   Result: The Add Menu Block dialog box opens.

3. Enter a name for the block (for example, **FaxMenu**), and then click OK.

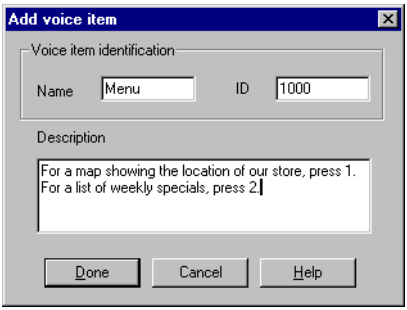
   Result: The Menu block is added to the window. The block border and the outputs are pink.

4. To configure the block, double-click it.

   Result: The block’s properties dialog box appears.

5. To create a new custom voice item for the Menu choices greeting, in the Menu choices greeting box, select <new voice item>, and then click New.

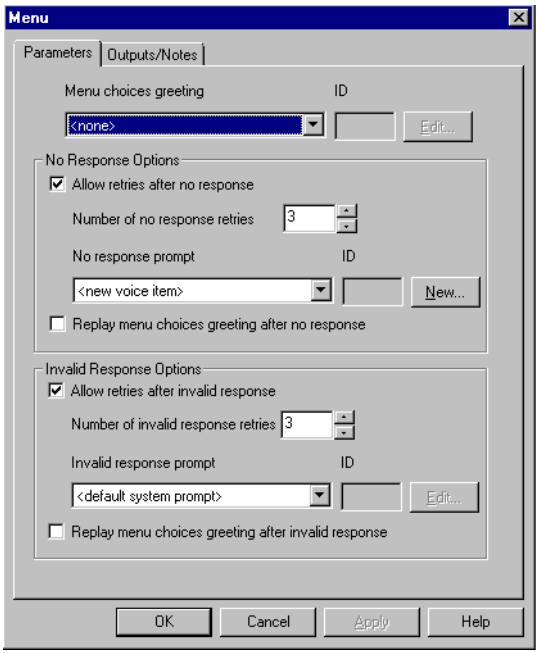
6 Complete the Add voice item dialog box, and then click Done.



Result: The Edit voice item content dialog box appears.

7 Do not add the content at this time. Click OK.

8 Complete the Parameters tab, and then click OK.



9 Hide the menu key outputs that you are not using. For outputs 3 to 9, right-click the Menu block, point to Hide/Show Outputs, and then click the output number.

10 Hide the Rotary output. Right-click the menu block, and then choose Hide/Show Outputs → Rotary.

Note: Since you are importing this application into the automated attendant application, this block is not the first block that requires user interaction.

11 Connect the Cancel output to the End block, using the right mouse button.

12 Connect the Attendant, No response, and Invalid outputs to the Attendant block.

What to do next

Record or import the content for the menu choices greeting. For more information, see Chapter 5, “Working with voice items.”

Adding Fax Select blocks

Introduction

Add a Fax Select block for each fax item that callers can select. For your sample application, you must add two Fax Select blocks.

To add a Fax Select block

1. Drag the Fax Select block from the palette to the application window.

   Result: The Add Fax Select Block dialog box opens.

2. Enter a name for the block (for example, **Map**), and then click OK.

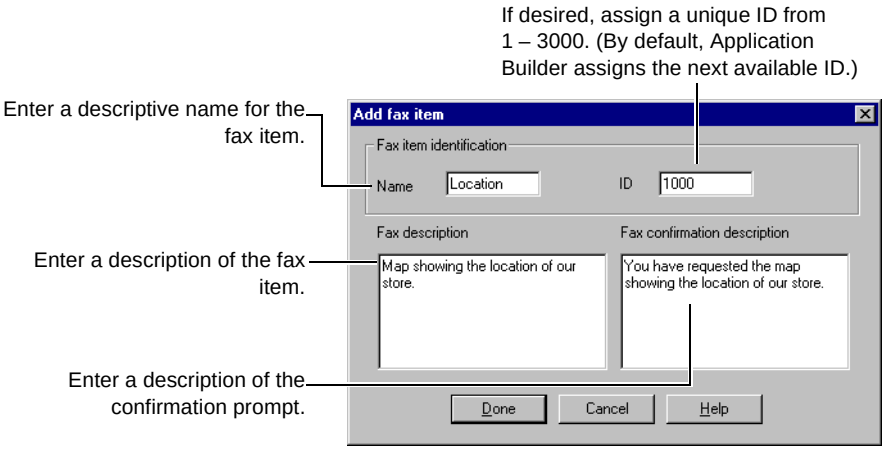
   Result: The Fax Select block is added to the window. The block border and the outputs are pink.

3. To configure the block, double-click it.

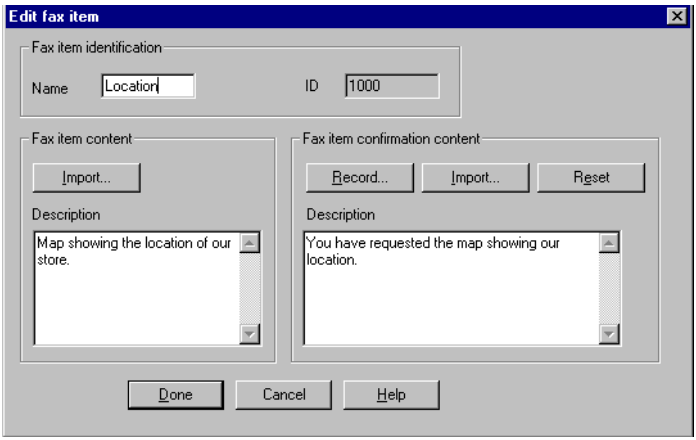
   Result: The block's properties dialog box appears.

4. To create a new fax item, in the Fax Item box, select <new fax item>, and then click New.

5. Complete the Add fax item dialog box, and then click Done.



Result: The Edit fax item content dialog box appears.



6 To import a fax file, follow these steps:

a. In the Fax item content section, click Import.

b. Browse to the path in which you saved the fax file, and then select it.

c. Click Open.

7 To record a confirmation prompt, follow these steps:

a. Click Record.

b. In the Specify Phoneset box, type the phone number of the phone you want to use for recording, and then click OK.

Result: The Application Builder Player window opens.

c. Click Record.

d. Answer the phone when it rings.

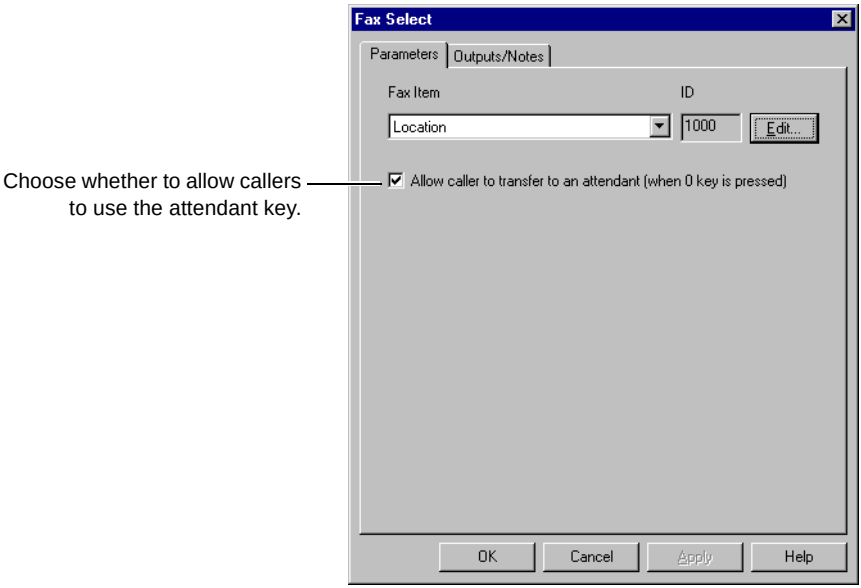
e. Say the content of the confirmation prompt, and then click Stop.

f. Click Play to listen to the recording.

g. If you do not like the recording, record over it.

h. When you are satisfied with your recording, press Save. Hang up the telephone, and then close Application Builder Player.

8 Complete the Parameters tab, and then click OK.



9 Connect the Attendant, Max Selections, and No response outputs to the Attendant block.

10 Repeat steps 1 to 9 to add, configure, and connect a Fax Select block for the Weekday Specials fax.

Adding a Fax Send block

Introduction

The Fax Send block sends all faxes selected in the Fax Select blocks. You must add a Fax Send to your application.

Note: Selected faxes are automatically delivered when an error occurs in the application, when the caller hangs up, or when the application encounters one of the following blocks:

- Call Transfer
- End
- Thru-Dial
- system blocks (Express Voice Messaging, Express Fax Messaging, Fax Item Maintenance, and so on)

To add a Fax Send block

1. Drag the Fax Send block from the palette to the application window.

   Result: The Add Fax Send Block dialog box opens.

2. Enter a name for the block (for example, **SendFax**), and then click OK.

   Result: The Fax Send block is added to the window. The block border and the No faxes selected output are pink. The Done output is automatically connected to the End block.

3. Connect both of the Fax Select blocks to the Fax Send block. To do so, hold the Shift key and left-click the Done output for the Map and Specials blocks. Then, left-click the Fax Send block.

4. Connect the No faxes output of the Fax Send block to the Fax Menu block. (If callers do not select a fax, the application returns them to the menu.)

Your fax-back application is now complete. In the next chapter, you export this application and import it into your automated attendant application.

Working with fax items

Introduction

You can work with your fax items using either Application Builder or Fax Item Maintenance. This section lists the fax item maintenance procedures you can perform.

Using Application Builder

Action	Steps
Edit the name or description of a fax item	1 Choose Define → Fax items. **2** Select the fax item, and then click Edit. **3** Make the desired changes, and then click Done.
Delete fax items	1 Choose Define → Fax items. **2** Select the fax item. **3** Click Delete. **Note:** You cannot delete a fax item that is used by an application.
Delete an existing confirmation prompt for a fax	1 Choose Define → Fax items. **2** Select the fax item, and then click Edit. **3** Click Reset.
Copy a fax item to the clipboard	1 Choose Define → Fax items. **2** Select the fax item you want to copy. **3** Click Copy. **Note:** When you copy a block from one application to another, any associated fax items are also copied to the destination application.

Action	Steps
Paste a fax item from the clipboard into the current application window	1 Choose Define → Fax items. **2** Click Paste. **3** If the application already contains a fax item with the same name or ID as the fax item you are pasting, Application Builder prompts you to resolve the name or ID conflicts. You can accept the new name and ID assigned by Application Builder, or specify your own.
Print a list of all voice and fax items	Choose File → Print Voice/Fax Items.

Using Fax Item Maintenance

Fax Item Maintenance allows you to maintain your fax items from a remote location, using a phoneset.

Before you use Fax Item Maintenance (FIM) to maintain the voice items in an application, you must define a telset maintenance password for the application. You can allow Fax Item Maintenance users to

- change the fax confirmation prompts

  If you want to use the same voice for all prompts, you can disable this option.

- change the fax verification number

  The fax verification number is the phone number of the fax machine to which Fax Item Maintenance sends a copy of the document just scanned for a fax item. Make sure Fax Item Maintenance users can change the fax verification number if they are using fax machines other than the one indicated on the Security tab.

To use Fax Item Maintenance, you must know

- the telephone number for the Fax Item Maintenance service
- the ID of the application containing the fax item you want to work with

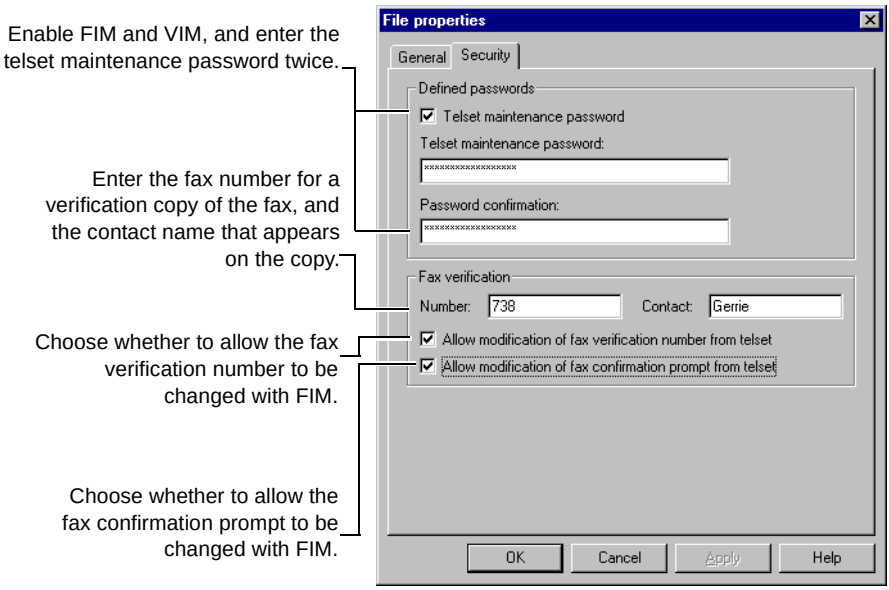
- the telset maintenance password
- the ID of the fax item

To configure Fax Item Maintenance

1 In Application Builder, open the application for which you want to use Fax Item Maintenance.

2 Choose File → Properties.

3 Click the Security tab.



4 Click OK.

5 Save and close the application.

Note: The minimum length for a password is defined in the Security Administration program.

Tasks in Fax Item Maintenance

You can perform the following tasks with Fax Item Maintenance:

Note: To scan a document into a fax file, you must access Fax Item Maintenance from a fax phone.

Action	Steps
Log on to Fax Item Maintenance	1 Dial Fax Item Maintenance. **2** Enter the ID of the application that you want to edit, and then press number sign (#). **3** Enter the telset maintenance password for the application, and then press number sign (#). **4** If the application contains multiple fax items, the program prompts you to enter the ID of a fax item. Enter the ID of the appropriate fax item, and then press number sign (#).
Select another fax item	1 Press 6. **2** Enter the ID of the fax item, and then press number sign (#).
Select another application	1 Press 81. **2** Enter the ID of the application, and then press number sign (#).
Record confirmation prompts	1 Press 5. **2** Speak clearly to record the prompt. **3** Press number sign (#). **4** To listen to the prompt, press 2. **5** To delete the prompt, press 76.

Action	Steps
Scan a document into a fax file	**Note:** Fax Item Maintenance ends after the document is scanned. Therefore, if you want to perform another task, such as change the item's confirmation prompt, you should do so before you scan the document. **1** Press 9. **2** To send the fax to the default fax verification number, press 1, and then go to step 5. **3** To send the fax to a fax verification number other than the default, press 2. **Note:** This option is only available if the Allow modification of fax verification number from telset box option is enabled. To check the setting, choose File → Properties, and then select the Securities tab. **4** Enter the new number, and then press number sign (#). **5** Put the document in the fax machine. **6** Press the Send key on the fax machine. **Result:** The fax transmits and Fax Item Maintenance ends. If a document does not scan properly, then Fax Item Maintenance sends an error message rather than a verification fax to the fax verification number.
Change the telset maintenance password	**1** Press 84. **2** Enter the old password, and then press number sign (#). **3** Enter the new password, and then press number sign (#). **4** Enter the new password again, and then press number sign (#). **Note:** The minimum length for a password is defined in the Security Administration program.

Action	Steps
Exit Fax Item Maintenance	Press 83.

Next steps

Introduction

If you want to save changes to your application before you proceed to the next lesson, choose File → Save. For details about saving applications, see “Saving and closing applications” on page 175.

When your fax-on-demand application is complete, you can integrate it with the automated attendant application that you worked with in previous lessons. See Chapter 7, “Integrating applications.”

If you want to skip the lesson about integrating applications for now, you can learn how to set up a completed application as a service. See “Putting applications into service” on page 177.

Chapter 7

Integrating applications

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Section A: About integrating applications

In this section

Sharing call functions 162

Sharing call functions

Introduction

Sometimes you need to reuse part of an application regularly. There are two ways you can reuse parts of an application:

- **copy the required functions**—You can copy sections of an application and paste them into another application. Use this method if you only need to reuse a few simple blocks, or if you want to copy a set of functions that cannot be saved as a separate, complete application.
- **import an application that performs the required functions**—You can import an entire application into another application. This option enables you to share a set of call functions between multiple applications, but maintain the call functions in one place. When you design complex applications, save components that you can reuse as imported applications.

Imported application example

You need to use an automated attendant in various applications. Instead of recreating that functionality every time you need it, create one automated attendant application with the following blocks:

- Day Control
- Time Control
- Announcement
- Menu
- Thru-Dial
- Call Transfer

You configure the Day Control block as follows:

- On non-business days, callers hear an announcement that lists business days and hours.
- On business days, it routes callers to the Time Control block.

You configure the Time Control block as follows:

- Before and after business hours, callers hear an announcement that lists business days and hours.
- During business hours, callers go to the Menu block.

You configure the Menu block so callers hear a greeting that gives them two options:

Hello. Thanks for calling Oswald Law Offices. If you know the extension of the person you want to reach, press 1. If you don't know the extension, press 2.

You connect the Thru-Dial block to the number 1 menu key. This allows callers to dial people only by number. You connect the Call Transfer block to the number 2 menu key. You also configure that block to pass callers to a live attendant. As a result, callers reach someone who can direct their calls to the appropriate people.

After you complete the application, you save it as "Attendant" and export it. Whenever you need to add an automated attendant to another application, you import "Attendant."

Section B: Lesson - Integrating applications

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Exporting an application

Introduction

This lesson demonstrates the import/export feature by showing you how to import your fax-on-demand application into the automated attendant for SuperValue Grocery. The first step is to export your fax-on-demand application.

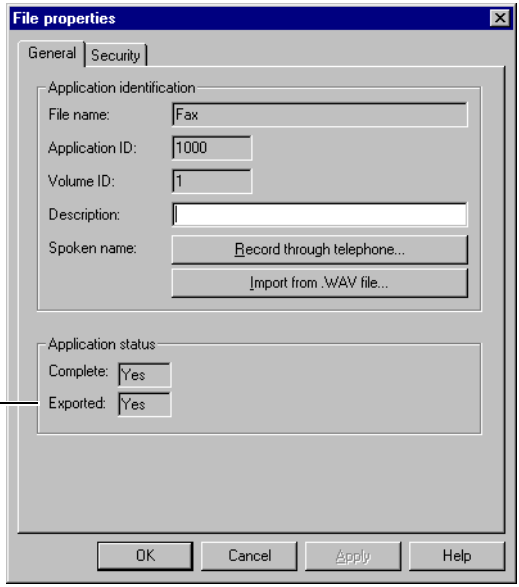
To export the fax-on-demand application

1. In Application Builder, open the source application (Fax) that you created in “Lesson - Creating a fax application” on page 139.
2. Choose File → Export.

   Result: A Continue block appears in the application. This block returns callers from the fax-on-demand application to the importing application (in this case the automated attendant application). At least one output in your fax-on-demand application must connect to this block.



3. Connect the Cancel output for the Menu block to the Continue block. (If callers cancel out of the Fax-on-demand menu, they return to the automated attendant application.)
4. To verify that the application has been exported, choose File → Properties.



5 Click OK, and then save and close the application.

Importing an application

Introduction

After you export the application, you can import it into the destination application. In this section, you import the fax-on-demand application into your automated attendant. You also modify the MainMenu block to allow callers to access the fax-on-demand menu.

To import an application

1. Open the destination application (AutoAttendant).
2. Choose File → Import.
3. Select the application to be imported (Fax), and then click Import.

   Result: The imported application block (Fax.1001) appears in the Imported Applications palette.
4. Drag the imported application block into the application window.
5. Connect the Continue output to the MainMenu block. (If callers press Cancel in the menu for the fax-on-demand application, they return to the Main Menu in the automated attendant application.)
6. To add the fax-on-demand option to the MainMenu, right-click the MainMenu block, and then choose Hide/Show Outputs → 5.

   Result: output 5 appears.
7. Connect output 5 to the imported application block.
8. Save and close the application.

What to do next

You must create new content for the Menu voice item. The menu should now include the following option:

To request a fax using our fax-on-demand system, press 5.

For information about editing voice items, see “Recording a voice item” on page 118.

Next steps

Introduction

When your applications are complete, you can set up the application as a service. See “Putting applications into service” on page 177.

Chapter 8

Saving applications

In this chapter

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How Application Builder stores files 173

Saving and closing applications 175

Ensuring that an application is complete

Introduction

An application is complete when you have connected and configured all the blocks in your application. If you still need to connect or configure a block, a pink border appears around the block.

You must complete an application before you can

- make it available as a service
- export it so that you can integrate it with other applications

To verify that an application is complete

1. Choose File → Properties.
2. Click the General tab. If the Complete box contains “Yes,” you can export or install the application.
3. Click OK.

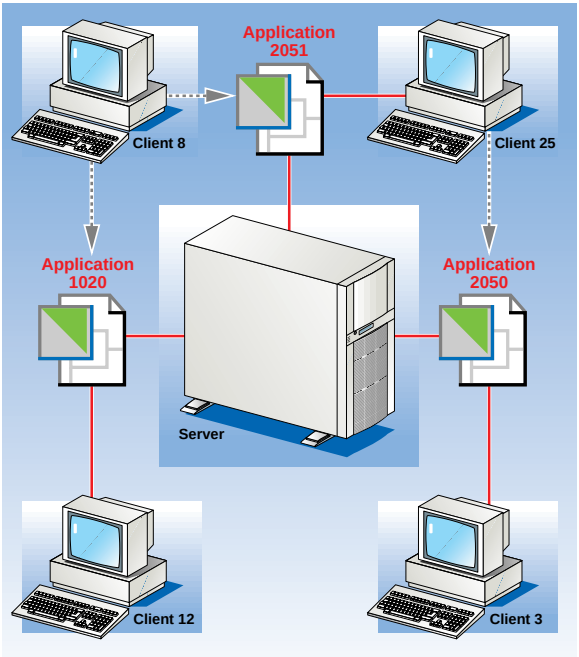
How Application Builder stores files

When you create an application in Application Builder, that application is stored on the client computer. When you save the application, Application Builder copies it to the server. However, the application remains locked until you close it. When an application is locked, other administrators cannot access it. This ensures that changes you make are not overwritten by another administrator.

Similarly, when you open an application in Application Builder, the program locks it, and creates a copy on the client computer. When you save your changes, Application Builder copies the application from the client computer to the server, but it remains locked. When you close the application, Application Builder unlocks it so that it is available to other administrators. An administrator on another computer or at another site can then maintain your applications.

Example

Client 25 has Application 2051 open, Client 12 has Application 1020 open, and Client 3 has Application 2050 open. Therefore, Client 8 cannot access Application 2051, Application 2050, or Application 1020.



To view a list of locked applications

Choose File → Locks.

Result: The list of locked applications appears.

Saving and closing applications

Introduction

After you create or change an application, you must save it. When you save an application, Application Builder copies it from the client computer to the server.

If you enable Auto Save, Application Builder can automatically save changes to your application on your local computer at a specified interval. Changes are not transferred to the server until you manually save the application.

Complete and incomplete applications

An application is complete when all the blocks are connected and configured. You can save an application if it is not complete, but you cannot make it available to callers as a service or export it until it is complete.

To verify whether an application is complete

Choose File → Properties, and check the Complete box on the General tab. If “Yes” appears in the box, the application is complete.

To enable Auto Save

1. Choose Options → Auto Save Options.

   Result: The Application Auto Save dialog box appears.

2. In the Save application every...minutes box, specify how often to save the application, and then click OK.

To manually save an application

Now that you have completed the automated attendant application, you must save it. This procedure assumes that your application is open in Application Builder.

Choose File → Save.

To close an application

Now that you are finished working with the automated attendant application, you must close it. When you close an application, Application Builder unlocks it so that others can access it and make changes to it.

Choose File → Close.

If you have not previously saved the application, you are prompted to save it now.

Where to go from here

If all of the fax items and voice items (prompts and announcements) required for your application exist, you can put the application into service (see Chapter 9, “Putting applications into service”).

Chapter 9

Putting applications into service

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Setting up the session profile for applications 180

Using a cover page for fax services 184

Testing applications 186

How applications become services

Introduction

When you work on a new application in Application Builder, it is unavailable to callers. To make the application available to callers, you must put it into service.

Once the new application is complete, you add it to the Service Directory Number (SDN) Table so that you can test it, and then make it available as a service that callers can dial. An application becomes a service when you add a service directory number for that application to the SDN Table.

This chapter describes the process of setting up and testing your application as a service.

Requirements

Before you can make an application available, ensure it is complete—that is, make sure all of its blocks are connected and configured. If a pink border appears around a block, you still need to configure or connect it. Save the application once it is complete.

To verify whether an application is complete

Choose File → Properties, and check the Complete box on the General tab. If “Yes” appears in the box, the application is complete.

Main steps

To put an application into service, perform the following steps:

1. Add the application to the Service Directory Number (SDN) Table to make it available to callers. For information about working with the SDN Table, refer to the CallPilot Manager online Help.
2. Configure the application's session profile. The session profile determines how the application behaves (for example, the type of fax delivery it supports). For more information, see "Setting up the session profile for applications" on page 180.
3. Test the application from the caller's perspective to ensure that the call flow works as you intended. For more information, see "Testing applications" on page 186.
4. Once you are finished your testing, publish the dialing number for the service.

How callers are routed to services

When you route callers through your application, keep in mind how calls are routed from the switch to services. Also consider how you configure the SDN Table and SDNs.

Each CallPilot service that callers access by dialing a number needs an SDN in the SDN Table. You must know what SDNs are, and how to configure them, to control the channels that are allocated to services.

Setting up the session profile for applications

Introduction

Some SDNs require additional configuration. You configure a session profile for all SDNs associated with Application Builder services.

This section describes the options that are available in the session profile. For information on configuring the session profile, see the *Administrator's Guide* (NTP 555-7101-301).

What is a session profile?

A session profile is a set of operational characteristics associated with the SDN of certain CallPilot services, including the services created in Application Builder. The session profile determines how a service behaves when it is called, and the length of time that callers can use the service.

Multiple session profiles for one service

The session profile determines the behavior of a service on a per-SDN basis. You can enter the same service into the SDN Table more than once, with a different SDN for each entry. As well, you can configure the session profile of each SDN differently. Consequently, the same service can behave differently based on the SDN that callers dial.

Example 1

You have a service that contains fax items. In the SDN Table, add two SDNs for the service. Since you know that some callers can call the service from fax phones, configure the first SDN's session profile to use same-call delivery. Configure the second SDN's session profile to use callback delivery, because other callers can access the service only from a phoneset.

Example 2

Your company's corporate directory appears in two services. The first service is a main menu from which external callers access the directory. The second service is the directory that employees access. Each service has its own SDN and, therefore, its own session profile. For the first service, configure a lower number of maximum invalid selections. You do so for security reasons. For the second service, configure a higher number of maximum invalid selections. Security is less of an issue where internal callers are concerned. Also, to ensure security, give the external callers' service a shorter session limit than the employees' service.

What the session profile controls

The session profile affects all Application Builder services. In particular, it affects the following blocks: Fax Select, Fax Send, and Menu. You must configure more session profile options for services with fax capability.

All Application Builder services

For all Application Builder services, the session profile determines the following aspects:

- the maximum length of a call session
- the maximum number of password failures allowed for services that contain the Password Check block and, therefore, have password-protected content

Application Builder services with fax capability

To include fax items in an application, define the application's fax options in the session profile of the SDN Table. In the session profile, establish settings for all fax applications and other settings that are specific to fax applications that use callback delivery.

For all fax applications

In the session profile, establish the following settings for all fax applications:

- the maximum number of faxes a caller can select during one call

- the maximum number of fax pages that the system delivers to a caller during one call
- the telephone number of the fax machine that the system uses to send faxes
- the fax delivery method (callback, same-call, caller's choice)
- whether a custom cover page, called a sponsor fax item, transmits with each fax
- how page transmission errors are handled

For fax applications that use callback delivery

In the session profile, you also establish the following settings for fax applications that use callback delivery:

- the DN to which fax callback transmissions are billed
- whether the system cover page transmits with each fax
- whether to prompt the caller for the extension number of the recipient of the fax
- the type (for example, national) of fax phone number for which the system must prompt callers so it knows where to deliver faxes
- the restriction/permission list against which the fax phone number must be validated before the system can make a fax callback transmission

Types of fax delivery

For services with fax capability, in the session profile, configure which type of fax delivery the system uses:

- same-call
- callback
- caller's choice

Same-call delivery

With same-call delivery, the caller—who must be at a fax phone—receives faxes after selecting them. Same-call delivery avoids billing problems, because the caller pays any long distance charges.

Callback delivery

Configure callback delivery if callers will access fax applications from a phoneset. With callback delivery, the caller provides the number of a fax phone to which the system delivers faxes.

If you configure callback delivery for services with fax capability, then you must configure callback handling. This ensures that callers are prompted to enter callback numbers in the appropriate format based on where they are calling from. Each callback number must be validated against the RPL, which you configure in the session profile. For example, a restriction can prevent the system from calling back an international fax phone number.

Caller's choice delivery

With caller's choice delivery, the system prompts callers to indicate if they want either same-call or callback delivery.

Using a cover page for fax services

Introduction

There are two types of cover pages available to send with each fax: a system cover page, and a custom cover page (also called a sponsor fax). You configure both of these options when you configure the SDN.

You configure whether a system cover page sends with those faxes on the Callback Handling tab.

You configure the information that appears on the custom cover page on the Session Profile tab. The custom cover page is included with all your faxes.

For more information, see the *Administrator's Guide* (NTP 555-7101-301).

What information appears on the two cover pages

System cover page

The system cover page contains information defined by the system, and sends only with callback fax transmissions.

On a system cover page, the system automatically generates the following information:

- (optional) the caller's extension number

  The system puts this number on the page only if you configure the callback handling to prompt the caller for his or her extension.
- the number of the fax machine entered by the caller
- the sender's name and address

  This information is entered in the session profile.
- the total number of pages sent (including the cover page)
- the date and time the fax was submitted by the system for delivery

- instructions that the recipient should request the information again from the service if the fax does not transmit properly

Custom cover page

You define all of the information that appears on a custom cover page. This page transmits with all faxes. Therefore, be sure to include important information, such as your company logo, and the name and number of a contact person.

A custom cover page is an image file in tagged image file format, class F (TIFF-F). You can save a file in TIFF-F by using the Nortel Fax printer driver that installs with CallPilot Desktop Messaging, or by using fax or graphics software that can create files in TIFF-F format.

For more information about custom cover pages, see the CallPilot Manager online Help.

Transmission order for cover pages

Both the system and custom cover pages send only if you configure them to do so. The system cover page always transmits before the custom cover page. Therefore, if you configure both cover pages and the system sends a callback fax transmission, the fax transmits in the following order:

1. system cover page
2. custom cover page
3. fax pages

Testing applications

Introduction

After you build an application and before you publish its SDN to callers, you must test it. You test an application by interacting with it from a caller's perspective.

Why you test

Test an application to access and interact with it from a caller's perspective and, therefore, gain valuable design input. As you test the application, you can ensure that the application works as you intended.

When to test

You should test an application only after you believe it is complete and before you publish its SDN to callers.

What to test

To test an application, put it in the SDN Table, call it, and interact with all of its flow. For example, if a menu has five options, follow each of those options through to its end to ensure it works properly. Do the following when you test:

- Give no DTMF response at the beginning of the application to verify how it handles rotary-dial callers.
- Make no response at various times throughout the application to confirm that it correctly prompts callers to give input.
- Give incorrect responses at various times throughout the application to ensure that it correctly directs callers to give input.
- Make enough no responses in the application to check how it handles time-out periods.

After you test an application

After you are sure an application has no errors, publish its SDN so that callers can dial into and use the application.

Chapter 10

Archiving and restoring applications

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How to archive and restore applications 190

How to archive and restore applications

Introduction

Archive applications to preserve their information. You also archive and restore to move applications from one volume ID or server to another. To move applications, archive the applications on one volume ID or server, and then restore them on another volume ID or server.

Archiving applications

You can archive individual applications or archive all applications at once. To create an Application Builder archive, you can select applications by name or ID.

You should archive all applications on a regular basis to ensure that you have a complete backup of your application services. This is particularly important if you use imported applications. If you restore an application, but not the imported applications that it contains, Unavailable blocks indicate the missing components and the restored application becomes unusable.

Restoring applications

You can restore individual applications from an archive or all applications in an archive. Restore archived applications when you want to transfer them to another computer, or when you to recover from data loss. Once you have restored the applications, open each one in Application Builder and save it before you configure it in the SDN Table. When you open an application, verify that it is complete. If Unavailable blocks appear in the application, the application is incomplete. For information about fixing incomplete applications, see the Troubleshooting book in the Application Builder online Help.

Note: When you upgrade a CallPilot 1.07 server to release 2.02, archive definitions are upgraded as well. However, you cannot restore existing CallPilot 1.07 backups onto a CallPilot 2.02 server.

See also

For more information about running services on the server and restarting the server, see the installation guide for your server.

For information about archiving and restoring, see the *System Administration Guide*.

Chapter 11

Troubleshooting

In this chapter

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Client or server crashes 197

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Error messages appear when opening or closing applications 200

Troubleshooting application development problems 201

Diagnosing problems

Introduction

When you encounter a problem with Application Builder, collect information to help you identify the source of the problem.

1. Capture any error messages associated with the problem. Capture screen shots of the error, or record the exact text of error messages that appear.
2. Save Application Builder log files to a permanent location.
3. Try and reproduce the problem.

Monitoring Application Builder activity

Each time you run Application Builder, two log files trace all Application Builder errors. These log files are stored on the client computer:

- appbuilderlog.txt
- nmabdlauncherlog.txt

You can specify a monitoring level for these log files.

To specify monitoring levels

On the Options menu, point to Log Level, and then specify a monitoring level.

Tracking application compilation errors

Application Builder automatically compiles an application when you save it. If you enable program diagnostics, Application Builder analyzes an application before compiling it. If Application Builder finds an error in your application, it displays an error message.

Here are a few examples of the errors that Application Builder looks for when it analyzes an application:

- **infinite loops**—An output from one block must connect to a different block. If a block's output connects back to the same block, the connection forms an infinite loop. This means that calls that pass through the output may not leave the block until the call is disconnected. Infinite loops also consume system resources.
- **unreferenced block**—An unreferenced block is a block that is not connected. This means that the functionality of the block is inaccessible to the caller. To complete an application, all blocks that you want to include in the application must be properly connected. Remove any blocks that you do not require.
- **incomplete application**—You must complete an application before you can export it or put it into service. An application is complete when all blocks are properly configured and connected. If a pink border appears around a block, it has not been connected or configured.

You can set the program diagnostic level to Low, Medium, or High. If you do not want Application Builder to evaluate your applications before saving them, you can disable program diagnostics.

To specify a program diagnostic level

On the Options menu, point to Program Diagnostics, and then specify a monitoring level. To disable program diagnostics, choose the None option.

Application Builder cannot run

Introduction

Application Builder requires services that run on the server. If those services are not running or if the server has crashed, then Application Builder cannot run.

System requirements

Confirm the Application Builder system requirements. For information about system requirements, see “Installing Application Builder” on page 30.

How to run Application Builder

How you get Application Builder to run depends on whether the server has crashed, a required service has crashed, or a required service is not running.

To run Application Builder after the server has crashed

1. Restart the server.
2. Run Application Builder.

To run Application Builder after a required service has crashed

1. Restart the service.
2. Run Application Builder.

To run Application Builder after a required service is not running

1. On the server, start the service.
2. Run Application Builder.

Client or server crashes

Introduction

When you open an application on a client computer, Application Builder locks it on the server. Any changes you make to that application are stored in a temporary file on the client until you save the application. When you save the application, the changes are transferred to the server. If the client or server crashes while you are changing an application, the application remains locked, and any changes you make remain in the temporary file on the client.

When the client and server computers become available again, you can recover the changes from the temporary file and unlock the application. If you cannot use the same client computer, you can use another client computer to unlock the application. However, you lose any changes made to the application since the last time that the application was saved.

To recover an application on the client computer that locked the application

1. Run Application Builder.

   Result: Application Builder prompts you to confirm that you want to recover the application.

2. Click Yes.

3. Save the application.

   Result: Application Builder transfers the recovered application to the server.

To recover an application on another client computer

1. Run Application Builder with the mailbox number and password of the administrator who had the application open.
2. Open the application to recover.

   Result: The following prompt appears: `Application is locked. If opened, it can no longer be recovered from another copy. Do you want to open this application?`
3. Click Yes.
4. Close the application.

   Result: Application Builder unlocks the application.

Calls not answered or system unusually slow

Symptom

Callers encounter ring-no-answer when they access an application, or the CallPilot system is unusually slow.

Explanation

The application may contain an infinite loop that is using up system resources.

Solution

Verify that your applications do not contain infinite loops. Inifinite loops occur when you connect a block's output back to the same block. Always connect an output from one block to a different block to ensure that you do not create infinite loops.

If Program Diagnostics are enabled, Application Builder checks for infinite loops when you save an application. If an application contains infinite loops, a warning appears that identifies the blocks that you need to properly connect. Application Builder does not detect infinite loops that consist of two or more blocks.

Infinite loops raise SLEE CPU consumption to abnormally high levels, resulting in ring-no-answer behavior or system slowdown.

Note: Application Builder does not generate an error if you create an infinite loop with the Menu block. This situation does not cause the application to consume system resources since the Menu block must wait for the caller to make a menu selection.

Error messages appear when opening or closing applications

Symptoms

You leave Application Builder inactive for a period of time. When you return to Application Builder, one of the following conditions occurs:

- You try to open an application. The error message “List of Languages not available on the server” appears. This error is followed by other error messages that relate to unavailable information on the server. After the last error message, the Open dialog box appears, but no applications appear in the list.
- You try to close an application that you left open in Application Builder. The message “The system could not save the application on the server. Please check the connection to the server and try again.” appears.

Explanation

Application Builder automatically disconnects from the CallPilot server after a period of inactivity.

Solution

Exit and restart Application Builder to establish a new connection with the server.

Troubleshooting application development problems

Introduction

The Application Builder online Help contains information to help you troubleshoot problems you may encounter while you are designing or working with applications. Topics include

- restoring blocks that currently appear as Unavailable blocks in an application
- resolving block, voice item, or fax item name conflicts

To view the troubleshooying information, open the Troubleshooting book in the Application Builder online Help.

Appendix A

Sample applications

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Section A: Applications for educational institutions

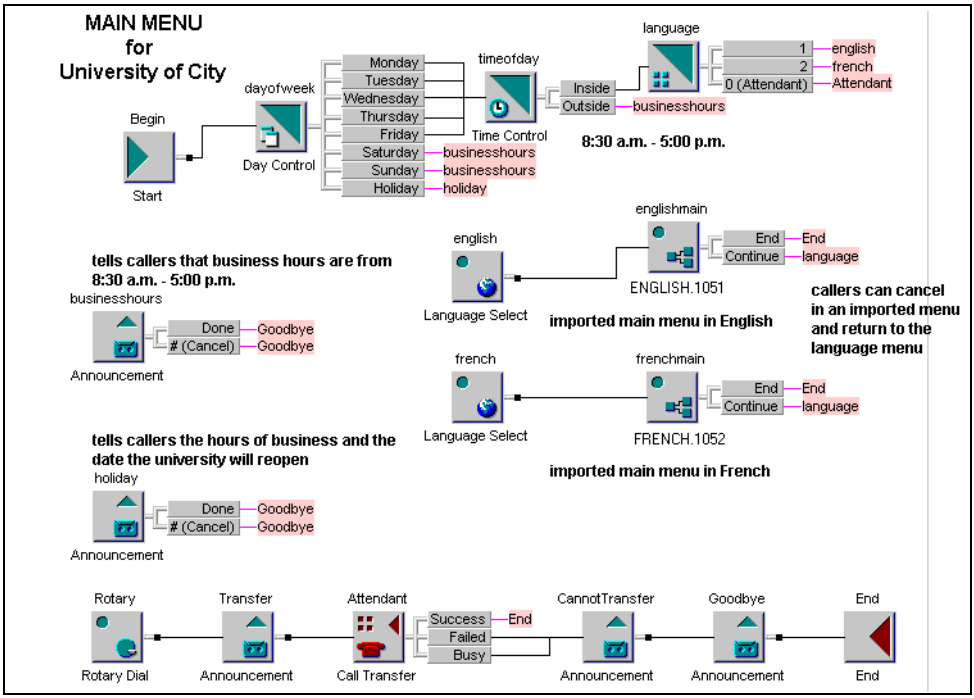
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The University of City main menu

Introduction

The main menu of the University of City directs calls to the university's main telephone number at different times and on different days. Due to the university's location, the main menu also supports bilingual callers.



Description of the university's main menu

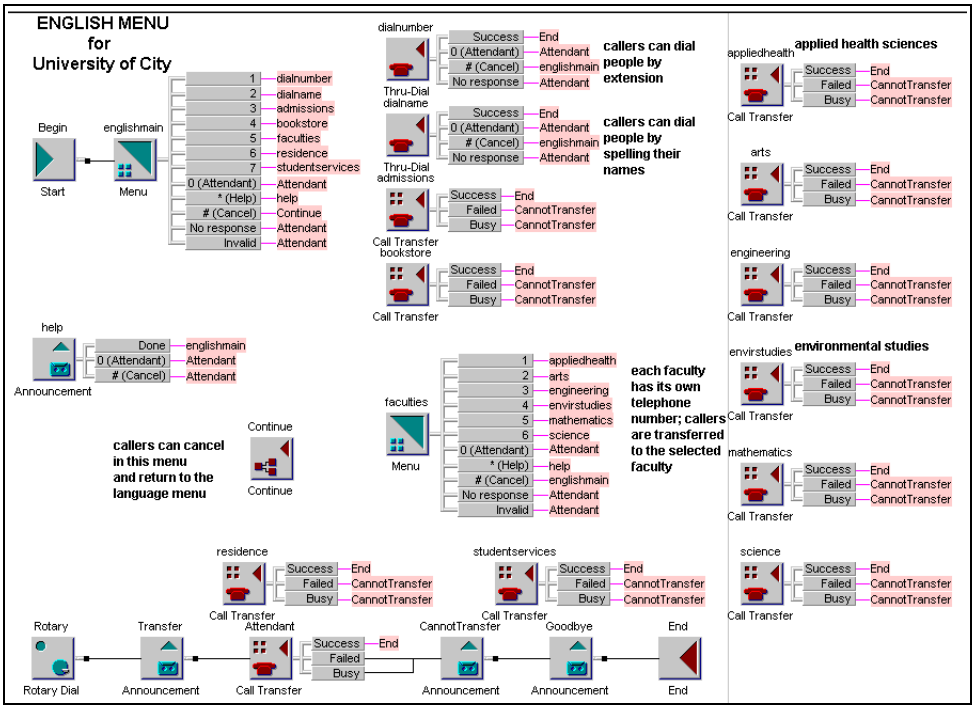
The main menu directs callers according to the day of the week and the time of day. After business hours (8:30 a.m. to 5:00 p.m.) and on weekends and holidays, callers hear an appropriate announcement. During business hours, they choose to hear the rest of the application in either English or French.

Two imported applications—an English menu and a French menu—appear in the main menu. While callers use either imported application, they can press the Cancel (#) key and return to the main menu to choose a language. Both imported applications contain the same functions. Their only difference is language.

The University of City English menu

Introduction

If callers press 1 or 2 while in the main menu of the University of City, they go to the English or French menu respectively. The English menu, like the French menu, directs callers through the various faculties and services of the university.



Description of the university's English menu

The English menu enables callers to

- dial staff by name or number
- transfer to such services as the bookstore
- select another menu that directs them to one of the six faculties

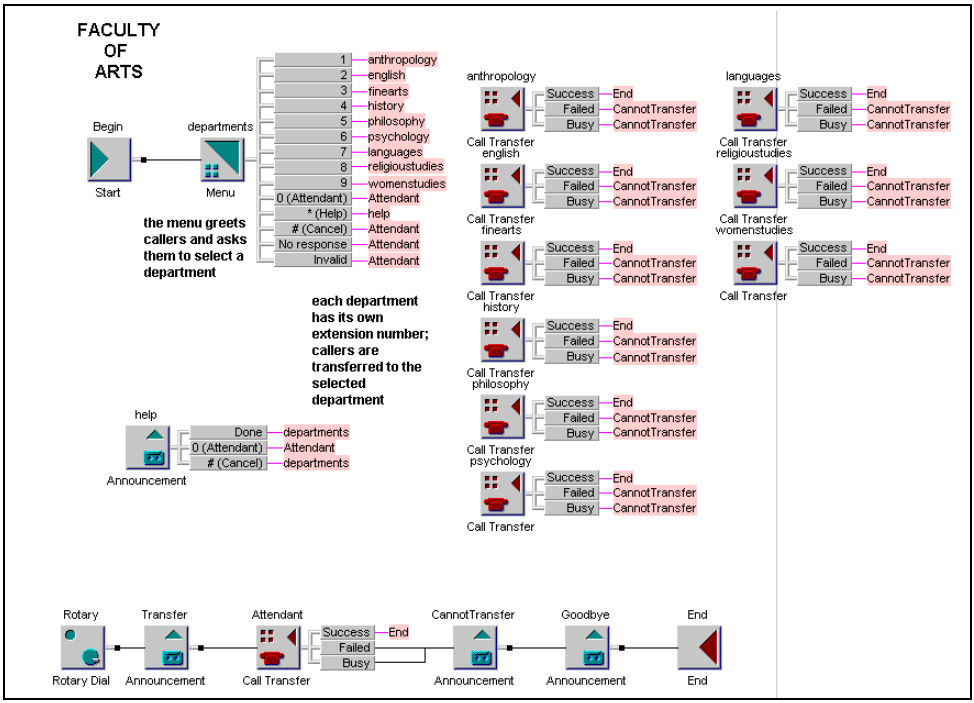
Callers transfer to the faculty of their choice. If any transfer fails, callers hear an explanation before the application ends.

The English menu anticipates which keys, other than the menu keys, callers may press. If callers press the Cancel (#) key, they return to the main menu and the Menu block named "language." If they press the Help (*) key, they hear detailed instructions about what they should do. If they press the Attendant (0) key, they transfer to an attendant. Callers also transfer to an attendant if they do not respond or if they make too many invalid choices.

The Faculty of Arts application

Introduction

If callers press 2 while in the Menu block named “faculties” of the English menu, they transfer to the Faculty of Arts. The faculty’s application directs callers to one of nine departments.



Description of the Faculty of Arts application

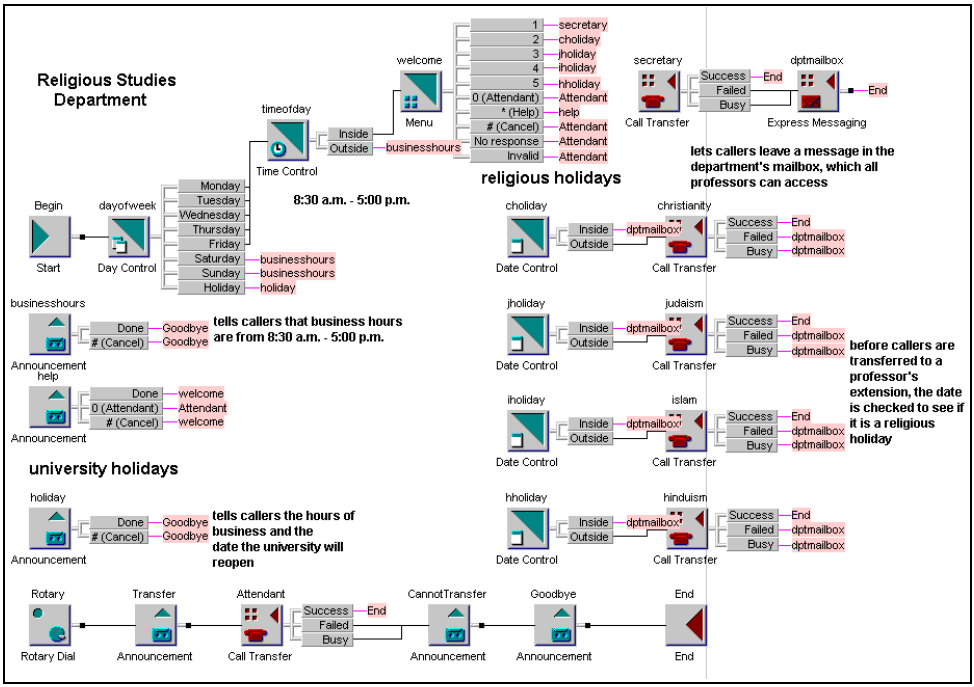
From the Menu block called “departments,” callers can transfer to one of the following departments: Anthropology, English, Fine Arts, History, Philosophy, Psychology, Language, Religious Studies, and Women’s Studies. Each department has its own phone number. If any transfer fails, callers hear an explanation before the application ends.

Like the English menu, the Arts application anticipates which keys other than the menu keys that callers can press. If callers press the Help (*) key, they hear detailed instructions about what they should do. If callers press the Attendant (0) key, they are transferred to an attendant. They also transfer to an attendant if they do not respond or if they make too many invalid choices.

The Religious Studies department menu

Introduction

From the Faculty of Arts application, you can transfer to the Religious Studies department. The Religious Studies department observes the University of City's holidays, but it also observes holidays for each of the four religions of study: Christianity, Judaism, Islam, and Hinduism. The application for the department must direct callers appropriately on either a university or a religious holiday.



Description of the Religious Studies department menu

Since callers can dial the Religious Studies department directly, the application routes callers in the same way that the University of City's main menu does for business hours, nonbusiness hours, and university holidays.

The Religious Studies Department also directs callers on religious holidays. During business hours and on religious holidays that do not coincide with university holidays, callers reach the department's secretary. Before callers transfer to one of the department's four professors, the menu checks whether the day is a holiday. If it is a holiday, callers transfer to the department mailbox where they leave a message. All the professors use the mailbox. If the day is not a holiday, callers transfer to the professor for the selected religion.

Callers also transfer to the department mailbox if any transfer fails or a line is busy.

Section B: Applications for a hospital

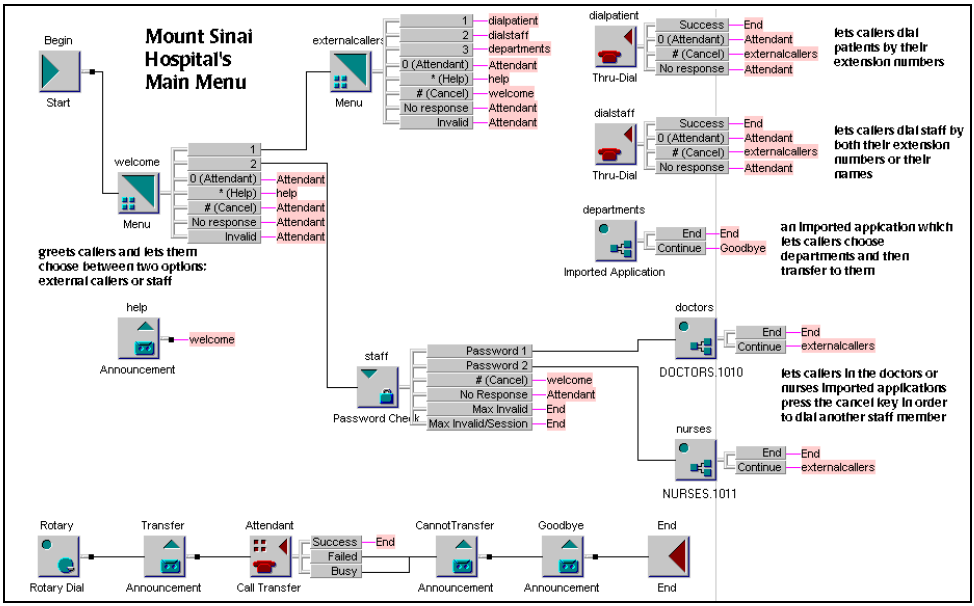
In this section

The Mount Sinai Hospital main menu 216
The Mount Sinai Hospital menu for nurses 218

The Mount Sinai Hospital main menu

Introduction

The main menu of Mount Sinai Hospital directs calls from both external callers and staff. The application contains two distinct flows. The flow for staff is password protected.



Description of the hospital’s main menu

The Mount Sinai Hospital main menu greets callers and directs external callers to press 1 and staff to press 2. Since staff need access to different information, they must enter a password to identify themselves before hearing their options.

After external callers press 1, they can choose to dial a patient by extension number or a staff member by extension number or name. As well, they can choose to hear a list of departments in the hospital. All of the departmental information, which is made up of many menus, is contained in an imported application.

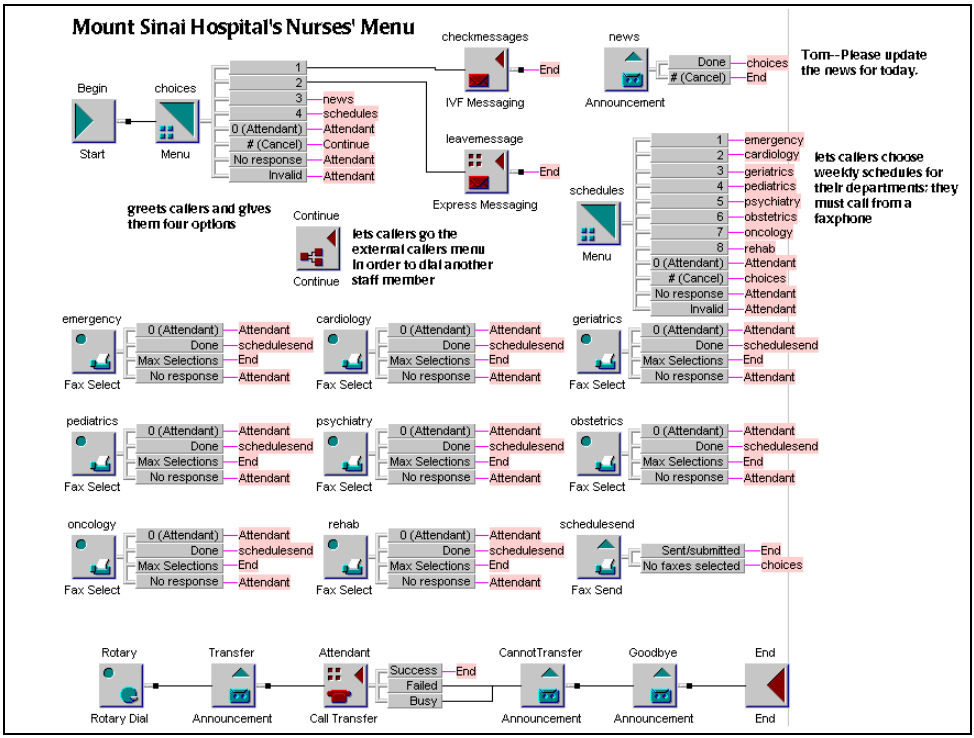
After staff enter a password that identifies them as a doctor or a nurse, they are passed to the appropriate imported application. Both the application for doctors and the application for nurses contain similar functionality.

Throughout the application, callers press the Attendant (0), Help (*), and Cancel (#) keys. In the application, invalid choices and no responses pass to an attendant.

The Mount Sinai Hospital menu for nurses

Introduction

If Mount Sinai staff members enter the password for nurses in the main menu, they pass to the imported application titled “nurses.” This application contains more Menu blocks. The application also represents the types of options available in the “doctors” imported application. The “nurses” application ensures that nursing staff can retrieve and communicate essential information.



Description of the menu for nurses

From their menu, nurses can access their mailboxes and leave messages for other staff members via Express Voice Messaging. They can also hear an announcement that highlights daily information, such as a staff shortage in a particular department. Nurses can call from a faxphone and retrieve the weekly schedule for a department by fax.

Since nurses use the menu daily, no Help is provided. However, if nurses make too many invalid choices, do not respond, or press the Attendant (0) key, the system passes the call to the attendant.

If nurses press the Cancel (#) key while in the Menu block titled “choices,” they go to the Menu block titled “external callers” in the main menu application. From the main menu, they can dial staff members.

Section C: Application for a sales company

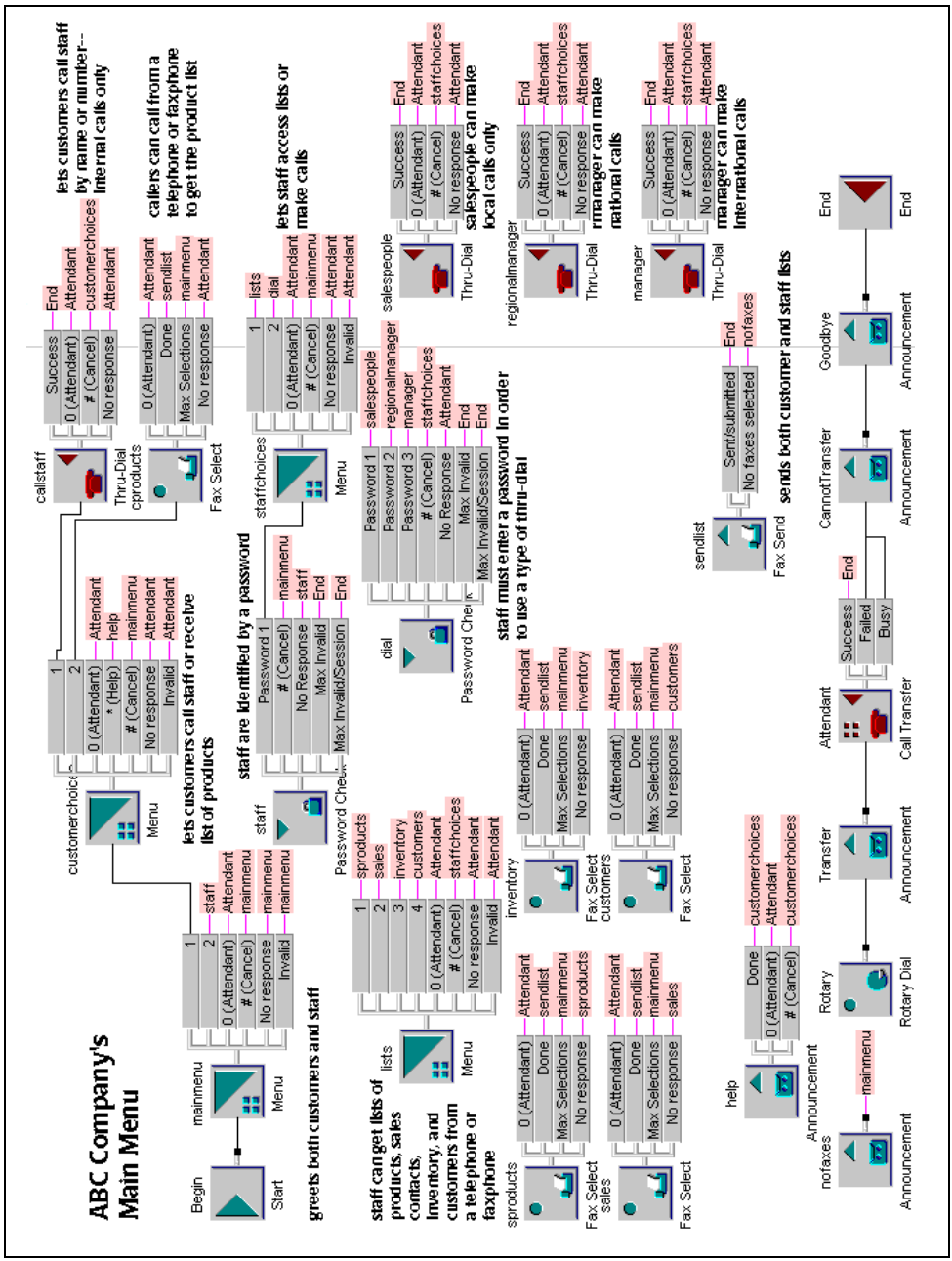
In this section

The ABC Company main menu 222

The ABC Company main menu

Introduction

Customers call the main menu of ABC Company to receive product information or speak to staff. Staff often call the menu to place toll-free calls when they are on the road. The main menu allows various types of Thru-Dials, and gives customers and staff access to different information.


ABC Company's
Main Menu
Begin
Start
mainmenu
Menu
greets both customers and staff
staff
Attendant
mainmenu
Invalid
1
2
0 (Attendant)
(Cancel)
No response
lets customers call staff or receive
list of products
customerchoices
Menu
1
2
0 (Attendant)
* (Help)
# (Cancel)
No response
Attendant
help
mainmenu
Invalid
staff are identified by a password
staff
Password 1
(Cancel)
No Response
Max Invalid
Password Check
Max Invalid/Session
End
mainmenu
staff
End
staff can get lists of
products, sales
contacts,
inventory, and
customers from
a telephone or
faxphone
lists
Menu
1
2
3
4
0 (Attendant)
(Cancel)
No response
Invalid
sproducts
sales
inventory
customers
Attendant
staffchoices
Attendant
Attendant
sproducts
Fax Select
sales
Fax Select
customers
Fax Select
inventory
0 (Attendant)
Done
Max Selections
No response
Attendant
sendlist
mainmenu
sproducts
sales
customers
inventory
dial
Password Check
Max Invalid/Session
staff must enter a password in order
to use a type of thru-dial
Password 1
Password 2
Password 3
(Cancel)
No Response
Max Invalid
Password Check
Max Invalid/Session
End
salespeople
regionalmanager
manager
staffchoices
Attendant
End
callstaff
Thru-Dial
cproducts
Fax Select
lets customers call staff
by name or number--
internal calls only
callers can call from a
telephone or faxphone
to get the product list
Success
0 (Attendant)
(Cancel)
No response
End
Attendant
customerchoices
Attendant
0 (Attendant)
Done
Max Selections
No response
Attendant
sendlist
mainmenu
inventory
Fax Select
customers
Fax Select
0 (Attendant)
Done
Max Selections
No response
Attendant
sendlist
mainmenu
customers
Fax Select
staffchoices
Menu
1
2
0 (Attendant)
(Cancel)
No response
lists
dial
Attendant
mainmenu
Attendant
Invalid
lets staff access lists or
make calls
salespeople
Thru-Dial
Success
0 (Attendant)
(Cancel)
No response
End
Attendant
staffchoices
Attendant
salespeople can make
local calls only
regionalmanager
Thru-Dial
Success
0 (Attendant)
(Cancel)
No response
End
Attendant
staffchoices
Attendant
manager can make
national calls
manager
Thru-Dial
Success
0 (Attendant)
(Cancel)
No response
End
Attendant
staffchoices
Attendant
manager can make
international calls
sendlist
Fax Send
Sent/submitted
No faxes selected
End
nofaxes
sends both customer and staff lists
help
Announcement
Done
0 (Attendant)
(Cancel)
customerchoices
Attendant
customerchoices
Rotary
Dial
Announcement
Transfer
Attendant
Call Transfer
Success
Failed
Busy
End
CannotTransfer
Announcement
Goodbye
Announcement
End
nofaxes
Announcement
mainmenu

Description of ABC Company's main menu

The first Menu block, "mainmenu," greets callers and ensures that they identify themselves as either customers or staff. Customers are then directed to a list of options. Staff must enter a password to use their area of the application.

The application presents customers with two options: to contact staff members by dialing their extension numbers or names, or to retrieve a list of ABC Company's products.

After staff enter their password, they choose between two options. They can receive one of the various lists of information. Like customers, staff can obtain a product list. However, their product list contains more sensitive information, such as wholesale prices and the names of third-party manufacturers. Staff can also retrieve information about inventory and customers.

As their second option, staff can dial a number. Before they dial the number, they enter a password that determines the type of Thru-Dial they are allowed. For example, salespeople can make only local calls while the manager can make international calls.

Both the customer and staff menus let callers dial an attendant or reach an attendant if they make too many invalid choices or do not respond. Unlike the staff menu, the customer menu gives callers help if they press the appropriate key.

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