NORTEL

Nortel CallPilot

Application Builder Guide

Trademarks

Publication History

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CallPilot 5.0 Standard 01.02 of the *Application Builder Guide* is issued for general release. Added precaution about Network Address Translation (NAT).

March 2007

CallPilot 5.0 Standard 01.01 of the *Application Builder Guide* is issued for general release.

July 2005

CallPilot 4.0 Standard 1.02 of the *Application Builder Guide NTP* is issued for general release.

July 2005

CallPilot 4.0 Standard 1.01 of the *Application Builder Guide NTP* is issued for general release.

July 2005

CallPilot 4.0 Standard 1.0 of the *Application Builder Guide NTP* is issued for general release.

May 2003

Standard 1.0 issue for *CallPilot Application Builder Guide 2.02 (2.01.27.05)* is released. The procedure for logging on to the CallPilot server is updated.

September 2002

Standard issue of the *CallPilot Application Builder Guide* for CallPilot 2.0 is released

Contents

Chapter 1
How to get Help

This section explains how to get help for Nortel products and services.

Getting Help from the Nortel Web site

The best way to get technical support for Nortel products is from the Nortel Technical Support Web site:

www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. More specifically, with the site, you can:

- download software, documentation, and product bulletins

- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues

- sign up for automatic notification of new software and documentation for Nortel equipment

- open and manage technical support cases

Getting Help over the phone from a Nortel Solutions Center

If you don't find the information you require on the Nortel Technical Support Web site, and have a Nortel support contract, you can also get help over the phone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following Web site to obtain the phone number for your region:

www.nortel.com/callus

Getting Help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:

www.nortel.com/erc

Getting Help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.

Chapter 2
Introduction to Application Builder

What is Application Builder?

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. With this graphical display, you can 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 can transfer them 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:
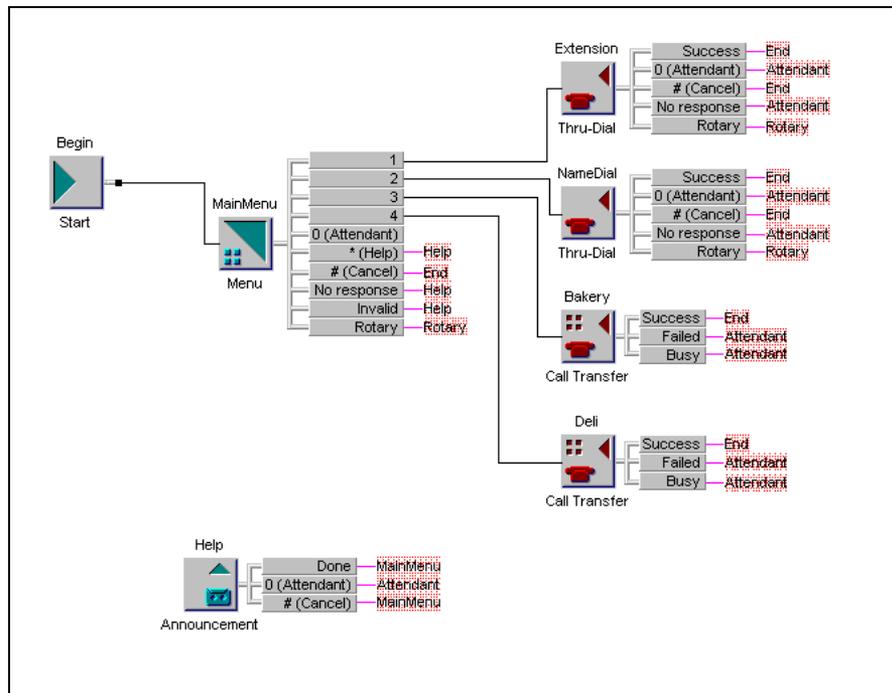
Fax options

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 prompts the caller for the fax number to which the map can be sent.

Benefits of Application Builder

Application Builder provides the following benefits:

*   With Application Builder, you can plan your CallPilot services online rather than on paper.

*   Application Builder 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.

*   With Application Builder, you can 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.

*   Application Builder shows the call flow graphically.

    The application window shows you, at a glance, how calls are handled by the system.

*   With Application Builder, you can import an application into other applications. You can save a group of functions that you want to share among multiple applications.

    For example, you can 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

With Application Builder, you can 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 9 "Saving applications" (page 117).

Connected callers

Callers can be connected to an application while you change 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

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 need to re-record 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.
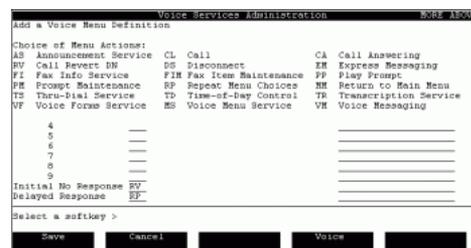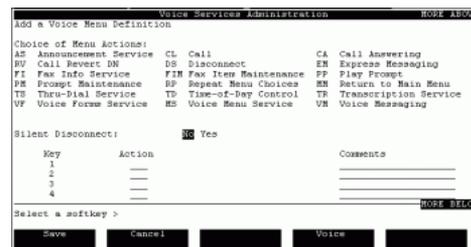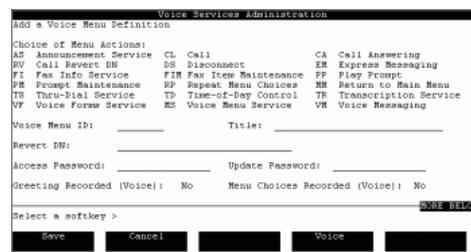
Application Builder interface

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.
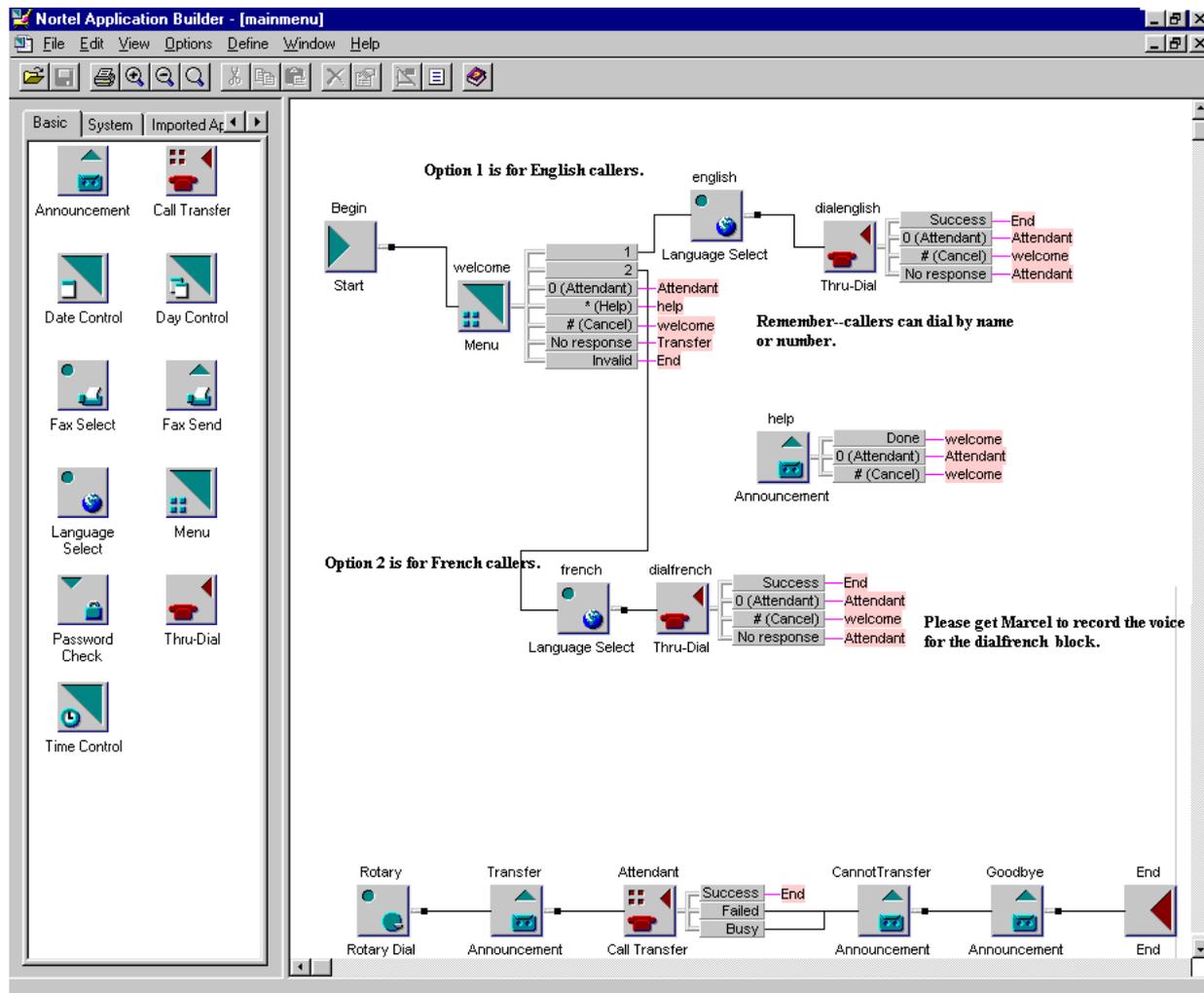
About this guide

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.

CallPilot online Help and documentation

CallPilot online Help and documentation incorporate the following:

- CallPilot Manager online Help is the primary source of procedural information.

- This *Application Builder Guide* (NN44200-102) is available only in PDF format.

This guide assumes that

- the CallPilot server is correctly installed and is operational

- the switch is installed and provisioned to support your CallPilot system

If the CallPilot server is not installed, install it before proceeding. For installation instructions, refer to the *Installation and Configuration Task List* (NN44200-306) and the Server Installation Guide for your server.

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

- CallPilot Manager

- My CallPilot

- the Nortel Partner Information Center (PIC) at www.nortel.com/pic

  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.

Troubleshooting

The *Troubleshooting Guide* (NN44200-700) describes symptoms that can appear on all CallPilot server platforms, and describes ways to resolve them. The *Troubleshooting Guide* (NN44200-700) is available from the Nortel PIC.

Using online sources

CallPilot administration online Help

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

- technical documentation in Acrobat PDF format

- online help topics in HTML format

To access online information, log on to CallPilot Manager or CallPilot Reporter, and then use either of the following methods:

- Click the white Help button at the top of any screen to access the Administration Help area.

- Click the gray Help button on any screen to display a topic that relates to the contents of the screen.

For more information about using these Help systems, access CallPilot Manager Help, open the Getting Started book, and click Navigating CallPilot Manager Help.

The Application Builder software contains a Windows Help system.

CallPilot online Help for mailbox owners

My CallPilot software contains a Useful Information area that provides access to end-user guides. To access online Help for the currently selected My CallPilot tab, click the Help button on the upper right corner of the My CallPilot screen.

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 Nortel

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

www.nortel.com/documentation

Reference documents

For a list of all CallPilot documents, see the following CallPilot Customer Documentation Map

NORTEL

CallPilot Customer Documentation Map

Fundamentals
- CallPilot Fundamentals Guide (NN44200-100)

Planning and Engineering
- Planning and Engineering Guide (NN44200-200)
- Network Planning Guide (NN44200-201)
- Converging the Data Network with VoIP Guide (NN43001-260)
- Solution Integration Guide for Communication Server 1000/CallPilot/Contact Center/Telephony Manager (NN49000-300)*

Installation and Configuration
- Upgrade and Platform Migration Guide (NN44200-400)
- High Availability: Installation and Configuration (NN44200-311)
- Installation and Configuration Task List Guide (NN44200-306)
- **Server Installation Guides**
    - 201i Server Hardware Installation Guide (NN44200-301)
    - 703t Server Hardware Installation Guide (NN44200-304)
    - 1002rp Server Hardware Installation Guide (NN44200-300)
    - 1005r Server Hardware Installation Guide (NN44200-308)
    - 600r Server Hardware Installation Guide (NN44200-307)
- **Configuration and Testing Guides**
    - Meridian 1 and CallPilot Server Configuration Guide (NN44200-302)
    - T1/SMDI and CallPilot Server Configuration Guide (NN44200-303)
    - Communication Server 1000 System and CallPilot Server Configuration Guide (NN44200-312)
- **Unified Messaging Software Installation**
    - Desktop Messaging and My CallPilot Installation and Administration Guide (NN44200-305)

Administration
- Administrator Guide (NN44200-601)
- Software Administration and Maintenance Guide (NN44200-600)
- Meridian Mail to CallPilot Migration Utility Guide (NN44200-502)
- Application Builder Guide (NN44200-102)
- Reporter Guide (NN44200-603)

Maintenance
- CallPilot Troubleshooting Reference Guide (NN44200-700)
- Preventative Maintenance Guide (NN44200-505)
- **Server Maintenance and Diagnostics**
    - 201i Server Maintenance and Diagnostics Guide (NN44200-705)
    - 703t Server Maintenance and Diagnostics Guide (NN44200-702)
    - 1002rp Server Maintenance and Diagnostics Guide (NN44200-701)
    - 1005r Server Maintenance and Diagnostics Guide (NN44200-704)
    - 600r Server Maintenance and Diagnostics Guide (NN44200-703)
    - Contact Center Manager Communication Server 1000/Meridian 1 & Voice Processing Guide (297-2183-931)*

End User Information

End User Cards	End User Guides
Unified Messaging Quick Reference Card	Multimedia Messaging User Guide
Unified Messaging Wallet Card	Speech Activated Messaging User Guide
A-Style Command Comparison Card	Desktop Messaging User Guide for Microsoft Outlook
S-Style Command Comparison Card	Desktop Messaging User Guide for Lotus Notes
Menu Interface Quick Reference Card	Desktop Messaging User Guide for Novell Groupwise
Alternate Command Interface Quick Reference Card	Desktop Messaging User Guide for Internet Clients
	Desktop Messaging User Guide for My CallPilot
	Voice Forms Transcriber User Guide

available in summer 2007

Chapter 3
Getting started with Application Builder

In this chapter

Installing Application Builder

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 2000 Professional, Windows XP Professional, or Windows Vista

- 25 to 30 Mbytes of free disk space for the Application Builder software

- Internet Explorer 5.5 SP2, 6.0, or 7.0, if you plan to access Application Builder from CallPilot Manager

- CallPilot Player to record voice items (You can download CallPilot Player from CallPilot Manager)

- The following ports must be enabled when using a firewall:
    — TCP port 20 (FTP)
    — TCP port 21 (FTP)
    — TCP port 135 (DCOM)
    — UDP port 135 (DCOM)
    — UDP port 137 (DCOM)
    — TCP port 143 (IMAP)
    — TCP port 389 (LDAP)
    — TCP port 636 (LDAP)
    — TCP port 993 (IMAP)
    — TCP ports 1024 to 65535 (DCOM)
    — UDP ports 1024 to 65535 (DCOM)

> **CAUTION**
> **Risk of Vulnerability to unauthorized traffic**
> The broad range of open TCP and UDP ports can pose a
> significant security risk. Consult your network administrator before
> proceeding.

Upgrading from previous versions

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

Do 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.

To install Application Builder

Step	Action
1	Insert the CallPilot Application CD-ROM in the computer where you plan to install Application Builder.
2	From either your CD-ROM or DVD-ROM drive, open the **CallPilotInstall** folder, and then double-click the **appbuilder.exe** file. **Result:** The installation program starts.
3	Follow the instructions in the installation program.

—End—

Defining CallPilot systems

With Application, you can maintain applications for multiple CallPilot systems.

When you access Application Builder from CallPilot Manager, all your logon information except for your password, is retained from your CallPilot Manager session. You do not need to log on again but you must input your password.

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. After 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.

ATTENTION

Application Builder cannot connect to the CallPilot server when using Network Address Translation (NAT). Application Builder must be able to resolve hostnames in both directions.

Starting Application Builder

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

To start Application Builder from CallPilot Manager

Step	Action
1	From the CallPilot Manager window, choose **Tools** →**Application Builder**.

Result: The Login To AppBuilder dialog box appears.

Step	Action
2	In the **Password** box, type the password for the mailbox number specified in the User ID box.

Result: The Application Builder window appears as shown on "The Application Builder window" (page 27).

—End—

Note: When CallPilot Manager is connected to a CallPilot server from a client, enter the CallPilot server name or IP address in the server box to log on. 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 the CallPilot Manager Web page. Also, calls to the telephone cannot be made to play or record greetings.

To start Application Builder from Windows

Step	Action

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

Result: The Application Builder logon dialog box appears.
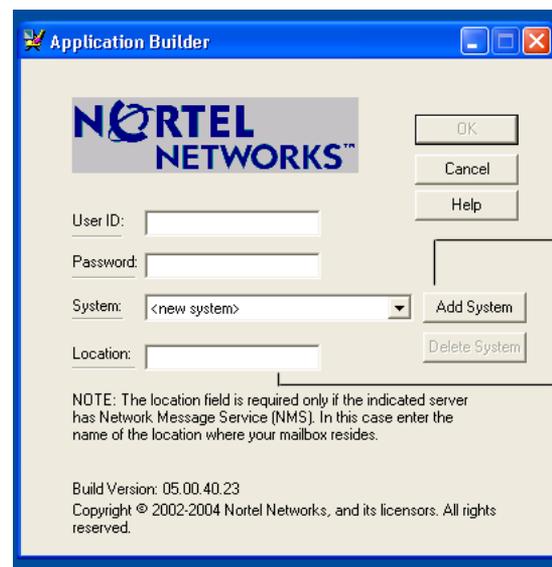
2 Type your mailbox number and password.

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

4 If you use 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 appears.

—End—

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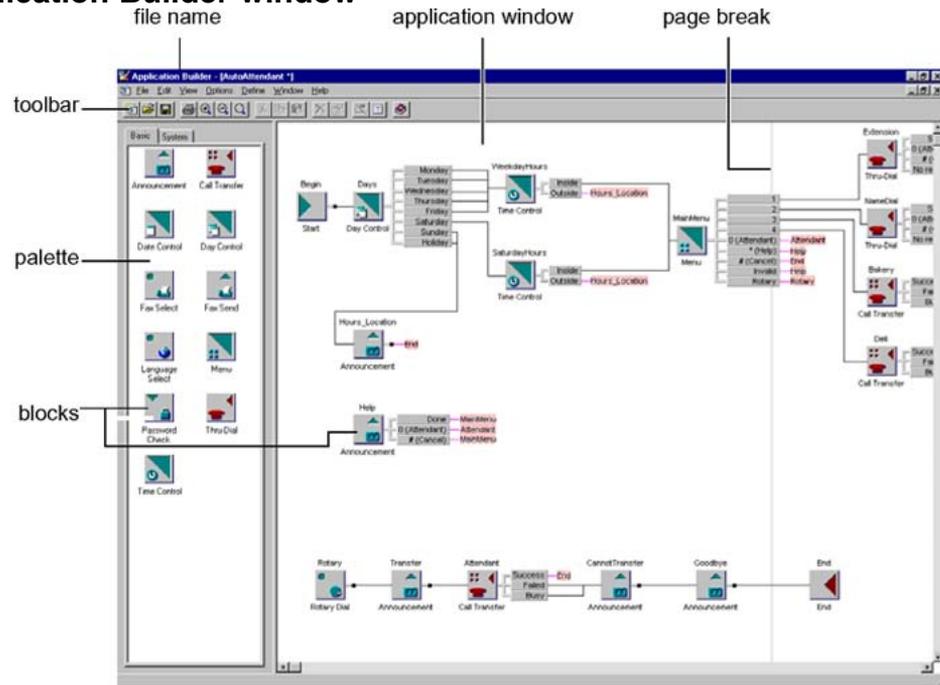
You create your applications in the application window. Optionally, you can display page breaks, which show where a new page begins on a printout of the application.

The palette has one tab for each block type: basic, system, and imported application. (The imported application tab appears only in an application that imports another application.) 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 are 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 4
Creating an application

Section A: About application development

What is an application?

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. With Application Builder, you can

- 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 can 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 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

The following table shows the application development process:

Task	Reference
1 Plan for the application. Consider who uses the application and how it interacts with other applications.	See .

	Task	Reference
2	Create the application and assign it a name and application ID.	See "Saving and closing applications" (page 119).
3	Design the call flow for the application.	See Chapter 5 "Designing the call flow" (page 39).
4	Create voice and fax items required for the application.	See Chapter 6 "Working with voice items" (page 75) and Chapter 7 "Working with fax items" (page 91).
5	Include call functions from other applications, copy the functions you require, or import the entire application.	See Chapter 8 "Integrating applications" (page 111).
6	Save and close the application to transfer it to the server.	See Chapter 9 "Saving applications" (page 117).
7	Test the application, and then make it available to callers.	See Chapter 10 "Putting applications into service" (page 123).

Planning for applications

Who uses the application?

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

Do 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 do 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 10 "Putting applications into service" (page 123)

Do some callers speak a different language?

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

Can callers dial the application directly?

For callers to dial an application, it must have an Service Directory Number (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 10 "Putting applications into service" (page 123)

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.

Can 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

Two options are available to reuse call handling functions in an application:

- Save a group of call handling functions that you want to re use as a separate application. You can 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

In this section

Automated attendant application

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 whom 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 use 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 enter a response for the Menu block, the application knows they use a touchtone phone and it follows the path for the No Response output.
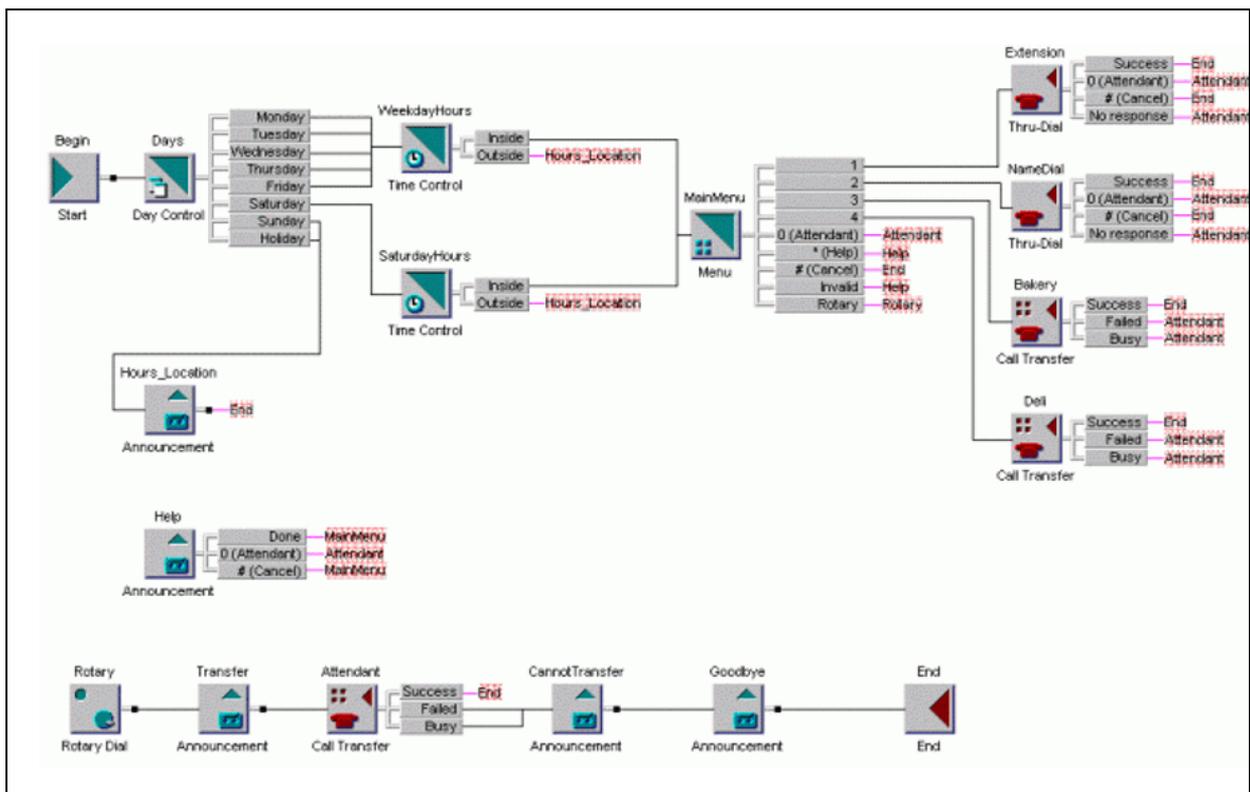
Creating an application

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 one of several administrators. 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:
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

Step	Action
1	In Application Builder, choose **File** → **New**. **Result:**The New dialog box appears.
2	Specify the file name, application ID, and storage location.
3	Click **New**.

Type a unique name of up to 60 characters.

If you do not want to use the default application ID, type a unique number from 1000 to 49 999.

Select the area on the hard drive where you want to store the application.
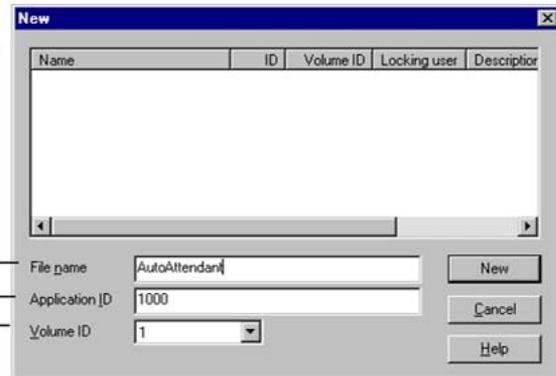
Result: The new application appears in an application window. The new application contains the default blocks: a Start block, an End block, a Rotary Dial block, a Call Transfer block, and three Announcement blocks.
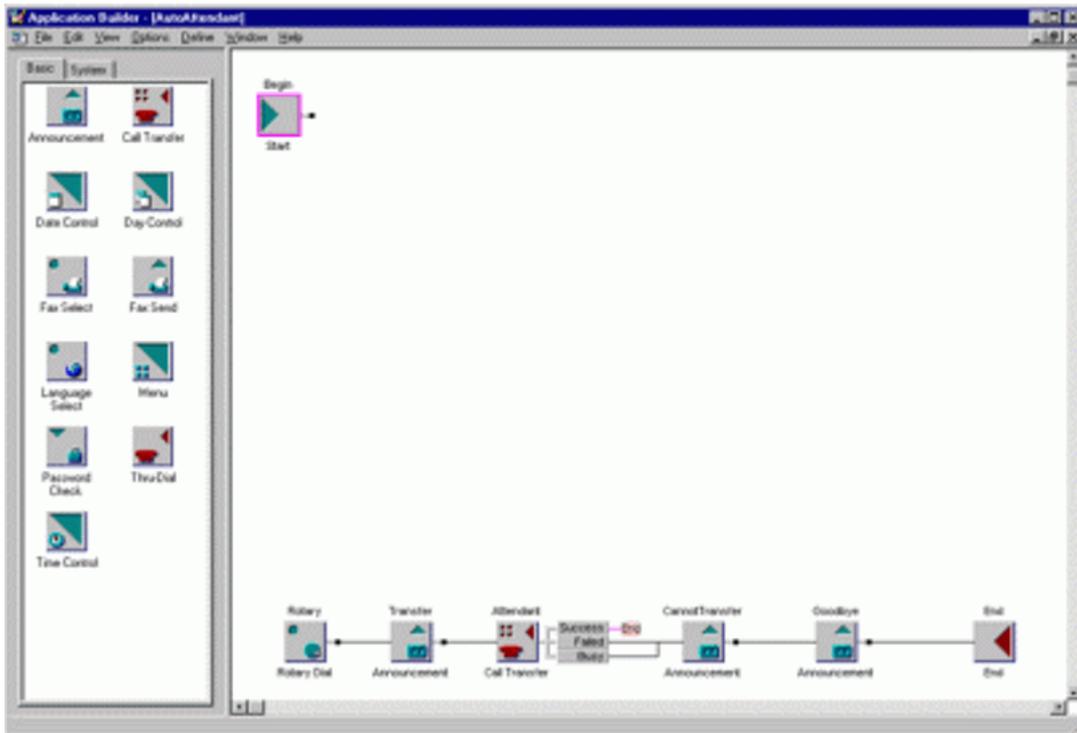
—End—

To view or modify identification details for an application

Step	Action
1	Choose **File → Properties**.

> **2** Click the **General** tab.

—End—

Creating a spoken name for an application

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. With a spoken name, administrators can 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

Step	Action
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 appears.

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.

<div align="center">

—End—

</div>

To import a sound file

Step	Action
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**.

<div align="center">

—End—

</div>

Next steps

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 .

When you are ready to continue, the next step is to create the call flow for your application. See Chapter 5 "Designing the call flow" (page 39)

Chapter 5
Designing the call flow

In this chapter

Section A: Blocks and connections

In this section

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, with the Announcement block, you can play a voice recording for the caller.
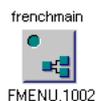
For example, suppose that you create a simple application that has an announcement and a menu. While creating another application, you realize you need to use the same announcement and menu. Instead of recreating them, you simply import that application into the current one.

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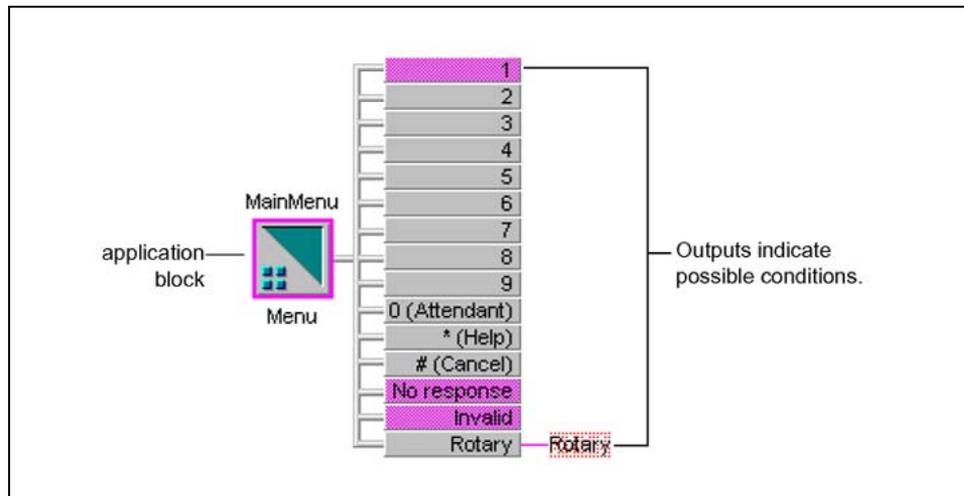
The outputs are the different conditions that can occur. For example, in the Menu block, one of the following conditions can occur:

- 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 can 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 connect to another block. The pink border indicates that one or more required outputs are 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 that play when there is no response or an invalid response.)

Naming conventions for blocks

When you add a block, you must assign a name to that block.

The following symbols are allowed in block names:

- A - Z (Latin uppercase letters)

- a - z (Latin lowercase letters)

- 0 - 9 (Digits)

The following limitations are applicable naming blocks:

- a block name must be unique in the scope of application

- a block name cannot exceed 30 symbols

- a block name cannot start with a digit (0-9)

    Note: Some names are reserved by Application Builder for internal use, and cannot be used as a block name. If you attempt to name a block with one of the names reserved for internal use, an error message appears.

Connections

Connections between blocks determine the call flow, or the handling given to calls. Each output for a block must connect to another block. For more information about connections, see "Connecting blocks" (page 48).

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 that plays.

System blocks

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

Express Voice Messaging

For example, with the Express Voice Messaging block, you can transfer callers to the Express Voice Messaging service where they can 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 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 11 "Archiving and restoring applications" (page 131)	• 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 about basic blocks, 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 can be saved for the next block.
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* (NN44200-601).	• Connect the outputs. • Optionally select a voice item that is used as a greeting. • Specify the number to which callers transfer.

Block	Purpose	Setup required
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 is checked against a holiday schedule. - The number of holidays are limited to sixty (60). Attempting to add a sixty-first holiday results in a system error.
Fax Select	Allows callers to select an associated fax item for same-call or callback delivery. (See Chapter 7 "Working with fax items" (page 91))	- Connect the outputs. - Associate a fax item with the Fax Select block.
Fax Send	Delivers selected faxes through same-call or callback delivery. (See Chapter 7 "Working with fax items" (page 91))	Connect the outputs.
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.

Block	Purpose	Setup required
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 that plays when there is no response. • Identify the voice item that plays 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 that is used for a greeting.
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 palette, and the setup they require. System blocks allow you to access system services from within the application. For more information about system blocks, 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 Voic e Messaging	Transfers callers to the Express Voice Messaging service where they can 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 where they can 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, where callers can edit fax items.	• None
Multimedia Messaging	Transfers callers to the Multimedia Messaging service, where callers can use a DTMF phoneset to access their mailboxes for maintenance, and for message retrieval and composition.	• None
Speech Activated Messaging	Transfers callers to the SA Messaging service. With this service, callers can 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 Form	Transfers callers to a voice form service where they can answer a series of questions, which creates an electronic form. Because this block offers a service, it causes the application to end.	• Specify the Voice Form ID or Title when you select the Voice Form Parameters tab.
Voice Item Maintenance	Transfers callers to the Voice Item Maintenance service, where callers can 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 about imported application blocks, see the online Help.

Note: The Imported Application palette is available only if you import one or more applications into the application that is 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 place 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:
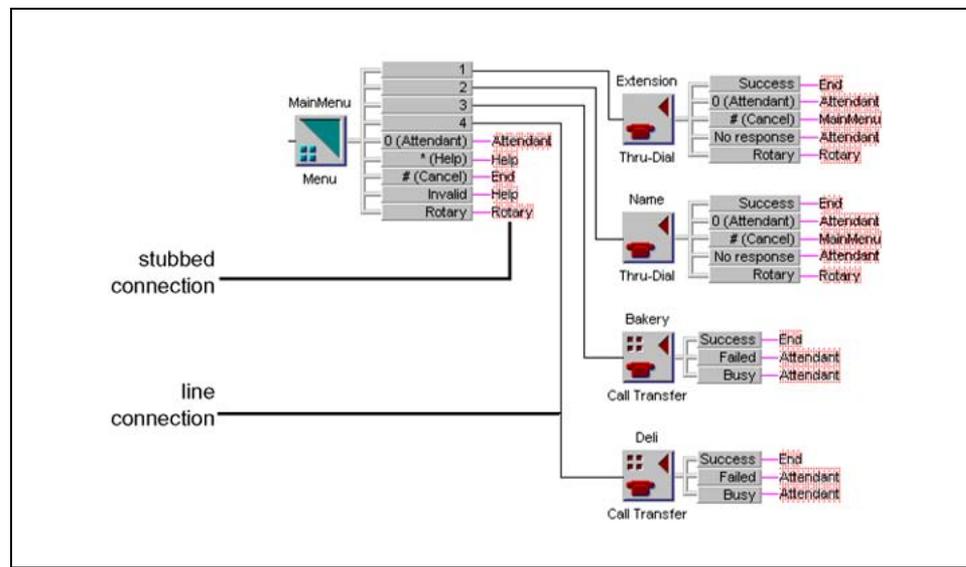
Block interactions

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), the 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 touch tone phoneset hears the menu and presses 1 to dial an extension. At the Thru-Dial block, the caller realizes she forgot 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
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 infinite 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 behavior 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.

Avoiding Infinite Loops
An *infinite loop* is created when the call path between one or more blocks loops back to the first block. Infinite loops consume system resources, which can result in slow system performance and ring-no-answer behavior.

Check for infinite loops in the Application Window. Non-looping call paths connect blocks from left to right. Any call paths traveling the other way probably form an infinite loop.
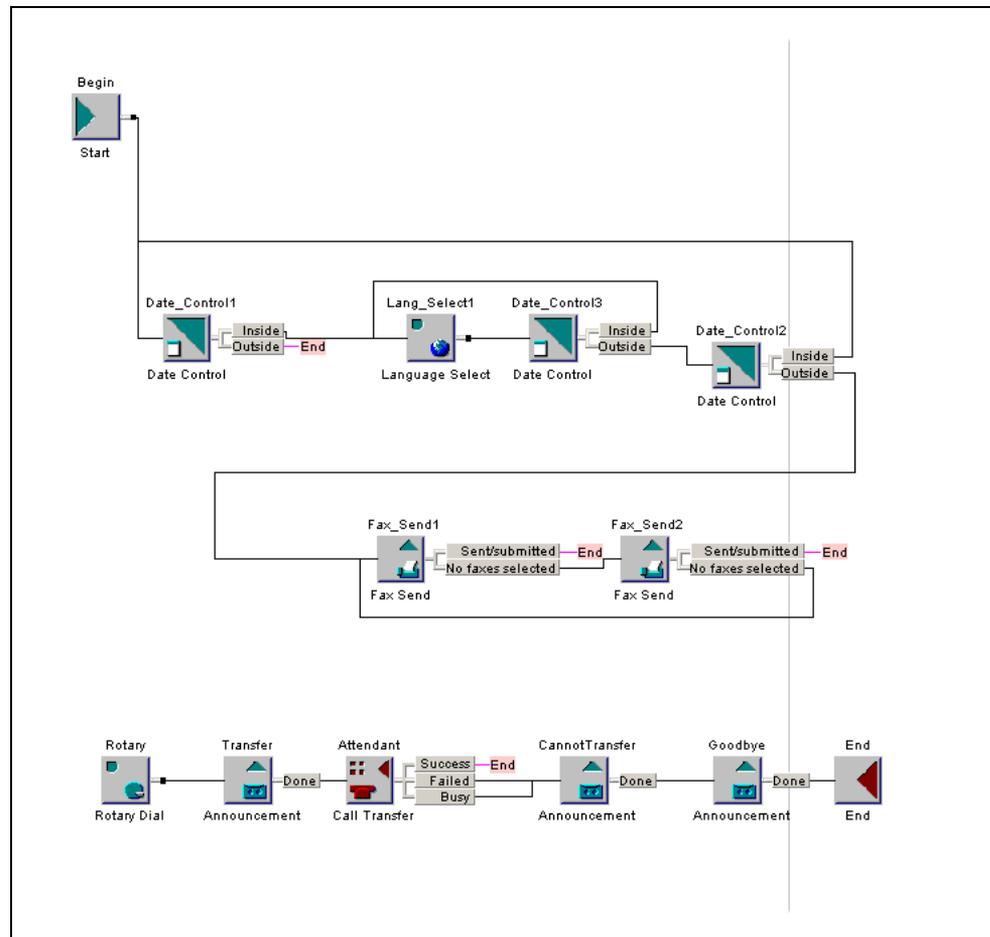
The blocks in the preceding figure are connected in an infinite loop. Callers who use the application Monday to Friday inside the configured date ranges can not continue through the application.

If Program Diagnostics is enabled, refer to "To specify a program diagnostic level" on "To specify a program diagnostic level" (page 134). Application Builder checks for infinite loops when you save an application. An error message listing all the blocks involved in infinite loops appears.
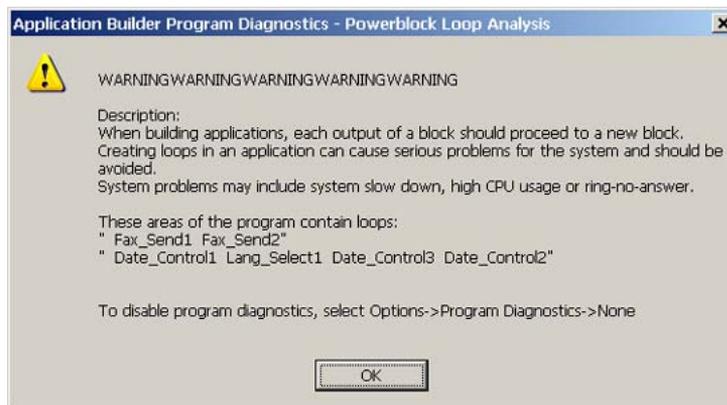
Application Builder does not generate an error if an infinite loop is created with a single Menu block. Because the Menu block waits for the caller to make a menu selection, it does not cause the application to consume system resources. If a loop consists of two or more blocks, Application Builder generates a message. Application Builder does not detect the loop if the loop area is not reachable from the Begin block. In the Application Builder Program Diagnostics, unreachable blocks are reported.

Section B: Lesson - Designing the call flow

In this section

Overview

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 "Creating an application" (page 34) 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

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

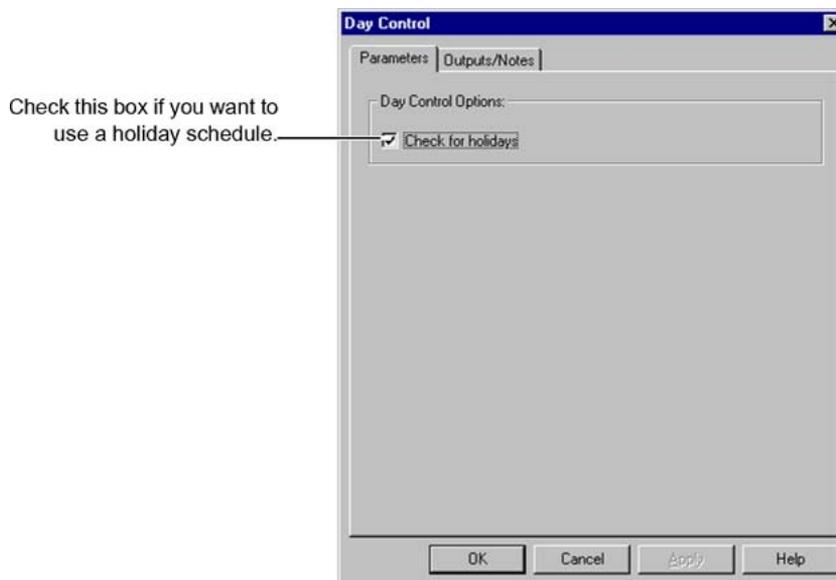| Step	Action
1	Drag the Day Control block from the palette to the application window. (To drag a block, move the cursor to the block, press the left mouse button, and hold it while you move the block to the desired location.)
	Tip: If the Palette does not appear, choose **View** → **Palette**.
	Result: The Add Day Control Block dialog box appears.

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

Note: The name of the block must adhere to the naming
convention rules for blocks. For more information about naming
convention rules, see "Naming conventions for blocks" (page 41).

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**.

Check this box if you want to
use a holiday schedule.

Day Control
Parameters │ Outputs/Notes
─ Day Control Options: ─
☑ Check for holidays
OK   Cancel   Apply   Help

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.

Connector

Begin   Days
Start   Day Control

Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Holiday
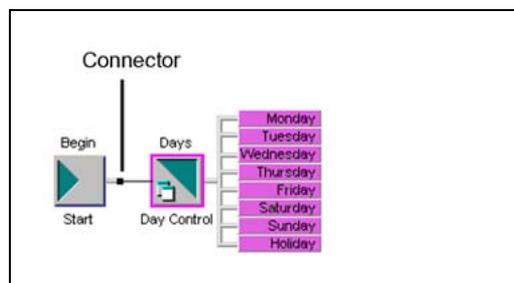
You must connect the Day Control block outputs, but before you can
do so, you must add the blocks associated with the outputs.

—End—

Using the Date Control block

The Date Control block routes calls to different blocks based on date.
Each Date Control block can include up to five separate date ranges. If
the current date falls within a specified date range, the application uses
the Inside output. If the date is not within the date range, the application
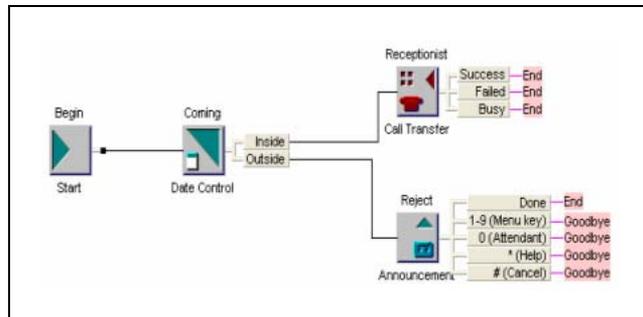uses the Outside output.

To define a date period for the Date Control block

Define a date period to specify on which calendar days the application can
route callers to a particular block. A date period can consist of up to five
subperiods. In Application Builder's Date Control block:

Step	Action
1	In a box under From (mm/dd), type the month and the day on which the date subperiod begins.
2	In the corresponding box under To (mm/dd), type the month and the day on which the date subperiod ends.
3	Repeat steps 1 and 2 to define another date subperiod.
4	Click **OK**. **Tip:** Include a date in more than one subperiod to overlap subperiods. Use a Date Control block to define departmental holidays that differ from organizational holidays.

—End—

Date Control - Parameters

Use the Parameters tab to configure the Date Control block. You can specify
up to five date ranges. Options:

- From (mm/dd)

Specifies, in months (mm) and days (dd), the start date of one date subperiod. Up to five subperiods can define the date period. Example: 10/08 to represent October 08.

- To (mm/dd)

  Specifies, in months (mm) and days (dd), the end date of one date subperiod. Up to five subperiods can define the date period. Example: 10/04 to represent October 04 of the following year.
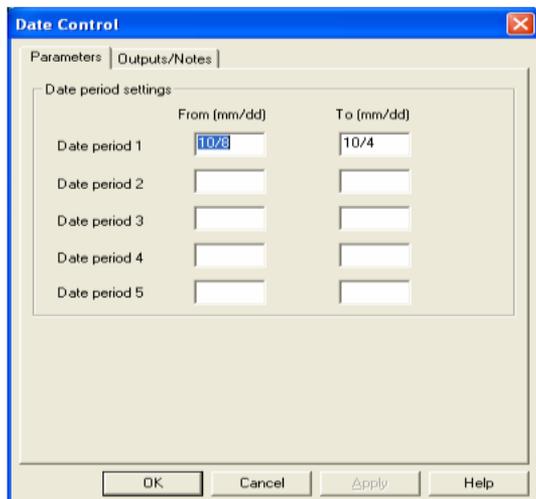
Date range examples

- 01/03 to 01/03 - A single date, January 3.

- 07/03 to 07/05

- 07/05 to 07/06 - Overlapping date ranges. If the current date falls within either range (07/03 - 07/05 or 07/05 - 07/06), or both, it is considered to be inside the date range.

- 12/22 to 01/03 - A date range that starts in one year and ends in the following year. If the begin date is later than the end date, the date range is assumed to span the end of the year. In this example, the date range covers the period from December 22 of one year to January 3 of the following year.

Tip: If you require additional date ranges, connect Date Control blocks. You can use this block with the Time Control block to route calls during specific time periods.

Date Control - Outputs
Use the Date Control - Outputs tab to see where callers go in the application if they call either inside or outside the date period. Options:

- Name - Displays the names of the block's outputs.

- Connection - Displays the block to which each output is connected.

- Visible - Displays Yes or No. Yes indicates that you can see the block's output in the application window. No indicates that you cannot see the block's output.

- Notes - Type information about the block or its configuration.**Tip:** Include information that you want to see when the application is printed. You can also include information for anyone else who maintains the application.

Date Control example

Registration at City University occurs September 4 to 7. During this period, the Registration office is open from 8:00 a.m. to 9:00 p.m. At all other times, the Registration office is open from 9:00 a.m. to 5:00 p.m.

The application for City University contains a Date Control block. If the current date falls within the registration period (September 4 to 7), the application invokes a Time Control block with a time range from 8:00 a.m. to 9:00 p.m. If a call arrives within this time period, the application invokes a menu. If a call arrives outside this time period, the application invokes an announcement that gives the office's open hours.

If the current date is not within the registration period, the application invokes a different Time Control block. This block has a time range from 9:00 a.m. to 5:00 p.m. If a call arrives within this time period, the application invokes a menu. If a call arrives outside this time period, the application invokes an announcement that gives the office's open hours.

Adding Time Control blocks

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)

With this schedule, you can give outside-hours handling to calls arriving during coffee and lunch breaks.

To add a Time Control block

Step	Action
1	Drag the **Time Control** block from the palette to the application window.
	Result: The Add Time Control Block dialog box appears.
2	Enter a name for the block (for example, **WeekdayHours**), and then click **OK**.
	Note: The name of the block must adhere to the naming convention rules for blocks. For more information about naming convention rules, see "Naming conventions for blocks" (page 41).
	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**.

Define the end of each time period (using the 24-hour clock).

Define the beginning of each time period (using the 24-hour clock).
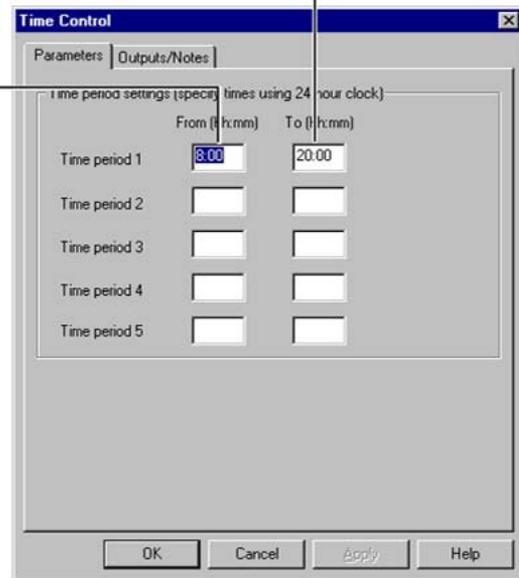
4   Connect the Time Control block to each of the weekday outputs of the Day Control block. To do so, hold down the Shift key and left-click Monday, Tuesday, Wednesday, Thursday, and Friday. Then left-click **WeekdayHours**.
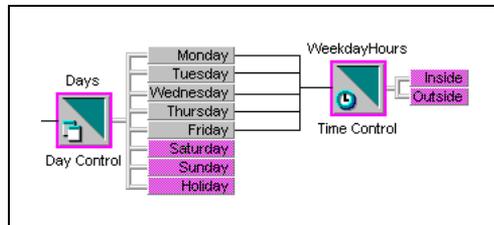
5   Add another Time Control named **SaturdayHours**, and configure it with a time period from 9:00 to 18:00 (6:00 p.m.). Connect this Time Control to the Saturday output.

The Sunday and Holiday outputs are still unconnected. Because the store is not open on Sundays and holidays, you are connected to these outputs to an announcement for nonbusiness hours covered "Adding Announcement blocks" (page 60) on page 84.

—End—

Adding Announcement blocks

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" (page 77)).

- Select an existing custom voice item.

- Create a new custom voice item, and either

  — record the announcement, or

  — 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 6 "Working with voice items" (page 75)

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 can have ID conflicts if two voice items have the same ID. Application Builder recognizes ID conflicts, and you can manually or automatically assign new IDs to the items you import or paste. 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 lets callers 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 occurs in a section of Metropolis. To handle all calls arriving from the affected area, Metro Utilities' administrator creates 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 passes 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 is 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.
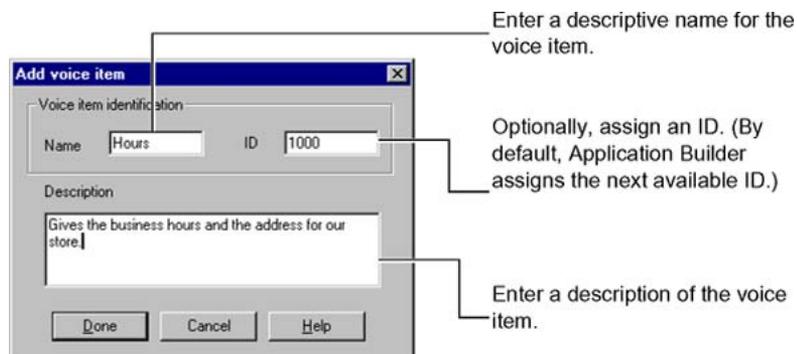
Pauses

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

Step	Action
1	Drag the Announcement block from the palette to the application window.
	Result: The Add Announcement Block dialog box appears.
2	Enter a name for the block (for example, **Hours_Location**), and then click **OK**.
	Note: The name of the block must adhere to the naming convention rules for blocks. For more information about naming convention rules, see "Naming conventions for blocks" (page 41).
	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 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**.

Enter a descriptive name for the voice item.

Optionally, assign an ID. (By default, Application Builder assigns the next available ID.)

Enter a description of the voice item.

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 6 "Working with voice items" (page 75)

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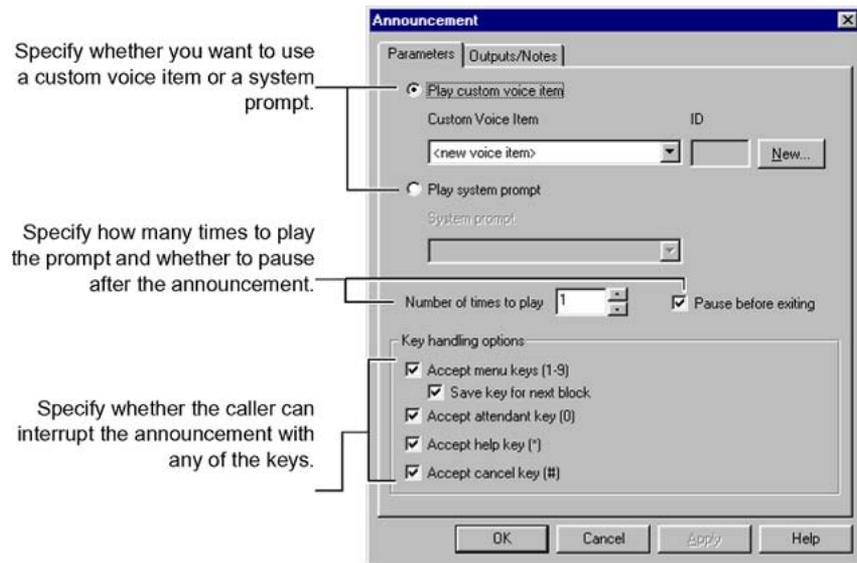
8   Connect the Sunday and Holiday outputs on the Days block to the new Announcement. To do so, hold down the Shift key and left-click the Sunday and Holiday outputs, and then left-click **Hours_Location**.

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   Because the call terminates after the announcement plays, you must connect the output for the Announcement block to the End block. Click the **Hours_Location**block.

11   Click the **Done** block to select it, and then right-click the **Done** block.

12   Right-click the **End** block.
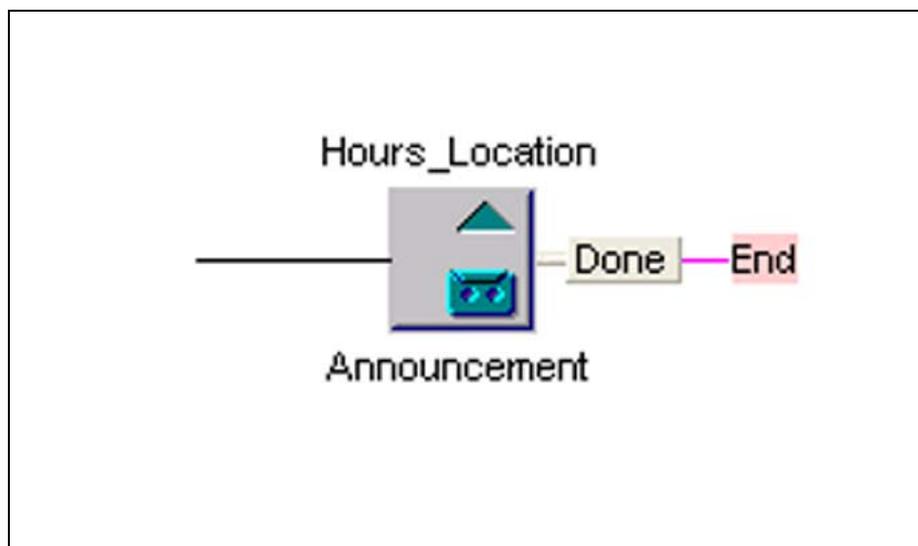
—End—

The previous procedure sets 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

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 plays 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 plays when the caller presses an invalid key.

You can assign these voice recordings in the same way as you assign voice recordings to announcements.
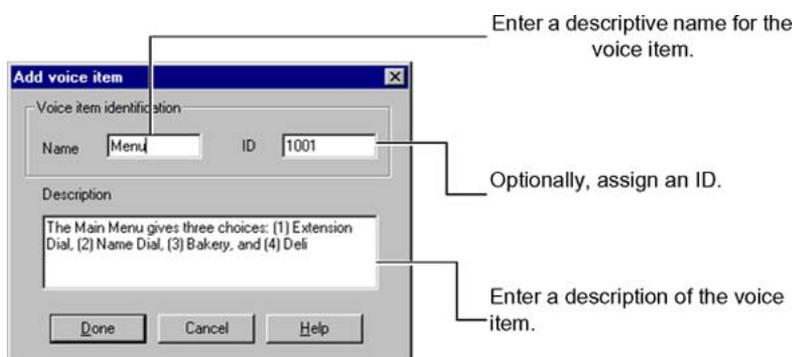
This section shows you how to create a new custom voice item for the Menu choices greeting, but it does not describe how to create or import the voice recording. (For information about creating and importing voice recordings, see Chapter 6 "Working with voice items" (page 75)) You use the default system prompt for the Invalid response prompt.
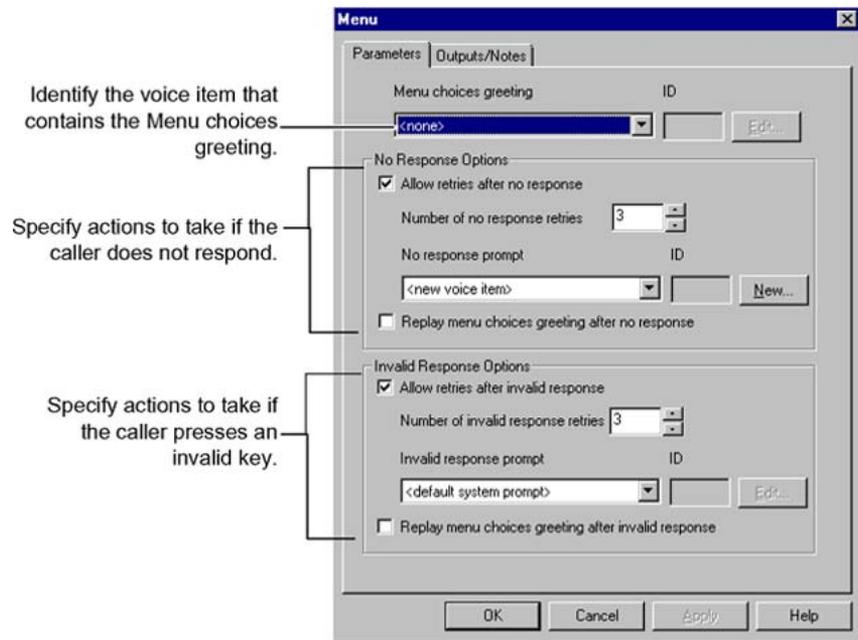
To add a Menu block

Step	Action
1	Drag the Menu block from the palette to the application window.
	Result: The **Add Menu** Block dialog box appears.
2	Enter a name for the block (for example, **MainMenu**), and then click **OK**.
	Note: The name of the block must adhere to the naming convention rules for blocks. For more information about naming convention rules, see "Naming conventions for blocks" (page 41).
	Result: The **Menu** block is added to the window. Note that the block border and the outputs are pink.
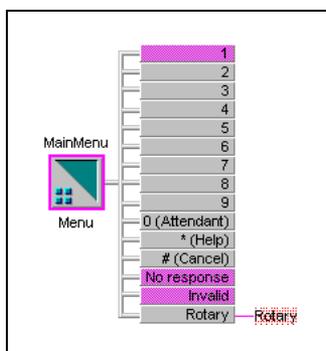
3   To configure the block, double-click it.

Result: The 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 6 "Working with voice items" (page 75)

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 block is the first block that expects a response from the caller. If the caller does not respond, the caller may be using a rotary phone.

10   Click the Cancel output to select it, and then right-click the **End** block.

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.

—End—

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

Adding the Thru-Dial blocks

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 adds 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 can 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. Because 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* (NN44200-601).

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

Step	Action

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

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

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

> *Note:* The name of the block must adhere to the naming convention rules for blocks. For more information about naming convention rules, see .

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 properties dialog box appears.

4   Complete the Parameters tab, and then click **OK**.
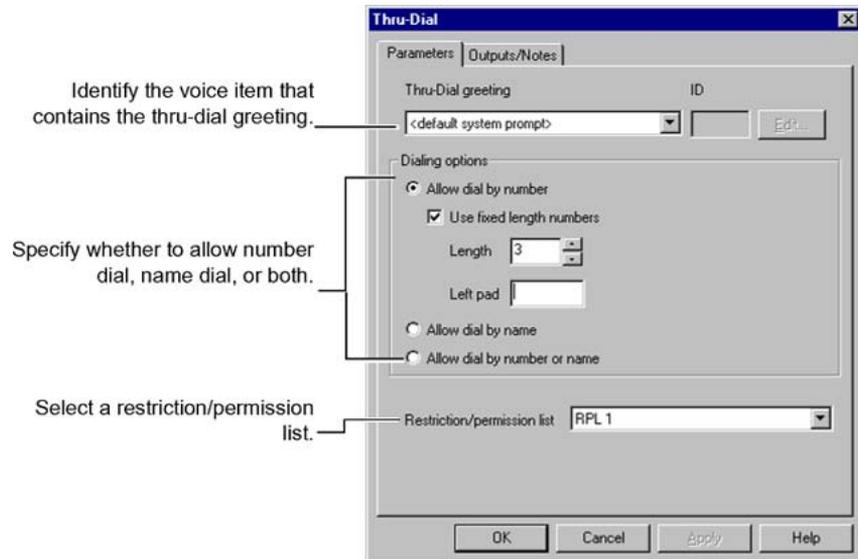
5   Click the Cancel output to select it, and then right-click the Main Menu block.

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 "To add a Thru-Dial block" (page 69) to step 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.
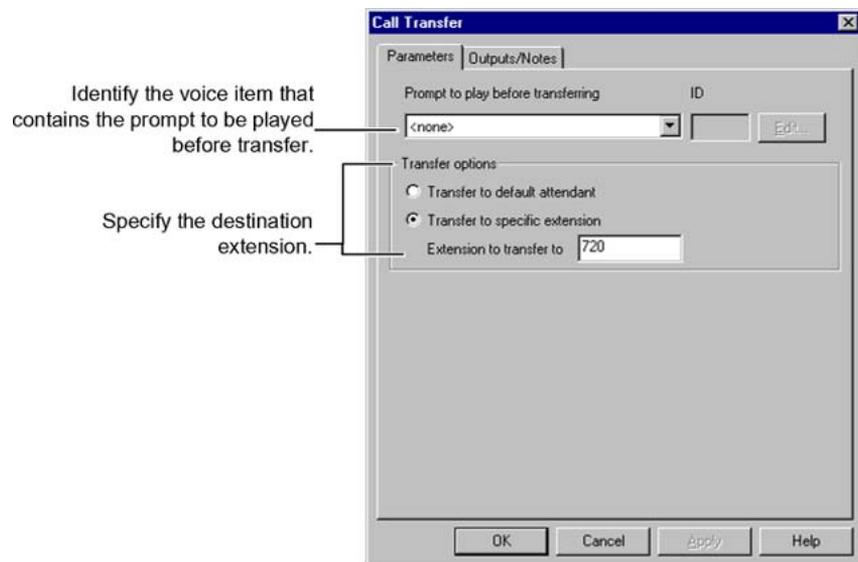

—End—

Adding the Call Transfer blocks

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

To add a Call Transfer block

Step	Action
1	Drag the Call Transfer block from the palette to the application window.
	Result: The Add Call Transfer Block dialog box appears.
2	Enter a name for the block (for example, **Bakery**), and then click **OK**.
	Note: The name of the block must adhere to the naming convention rules for blocks. For more information about naming convention rules, see "Naming conventions for blocks" (page 41).
	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**.

Identify the voice item that contains the prompt to be played before transfer.

Specify the destination extension.

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 step 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.

—End—

To complete your application

To complete the automated 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 about completing your application, see the *Administrator's Guide* (NN44200-601).

After your application is complete, you can add notes to explain its purpose and design. For information about documenting your application, see "Documenting and printing your application" (page 72).

Documenting and printing your application

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 can provide some documentation. With Application Builder, you can 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 add appear in your printouts.

To add a note to a block

Step	Action
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. Because you did not record 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**.

—End—

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.

Step	Action
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.

—End—

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

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" (page 119).

When you are ready to continue, the next step is to record the voice items for your application. See Chapter 6 "Working with voice items" (page 75)

Chapter 6
Working with voice items

In this chapter

Section A: About voice items

In this section

Overview of voice recordings

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 are accessed from any client computer if you do not use 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. Because 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 interacts 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 connects 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

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 reached the maximum number of selections that can 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 are 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 to 3000. (You can use the same ID in two different applications.)

Customized prompts

Customized prompts are system prompts that you replace, or customize, 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, choose responses that are 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 can 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 and ensure clarity in your voice recordings.

Give callers useful feedback

Voice recordings can 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 can 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

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" (page 94).

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", ID 1010 in Application Builder. The description of the application is "Migrated from Announcement Service 65."

Within that file, you see the announcement (voice item) with a name ("Voice1").

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

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 re-record the voice item. Your new recording replaces the previous recording.

To record a voice item

Step	Action
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.
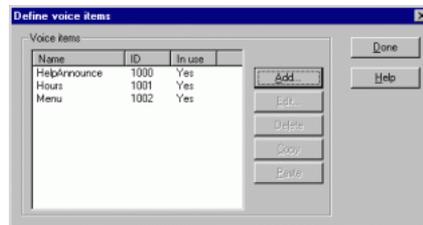
3	Select the voice item to record, and then click **Edit**. **Result:** The Edit voice item dialog box appears.

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 appears.
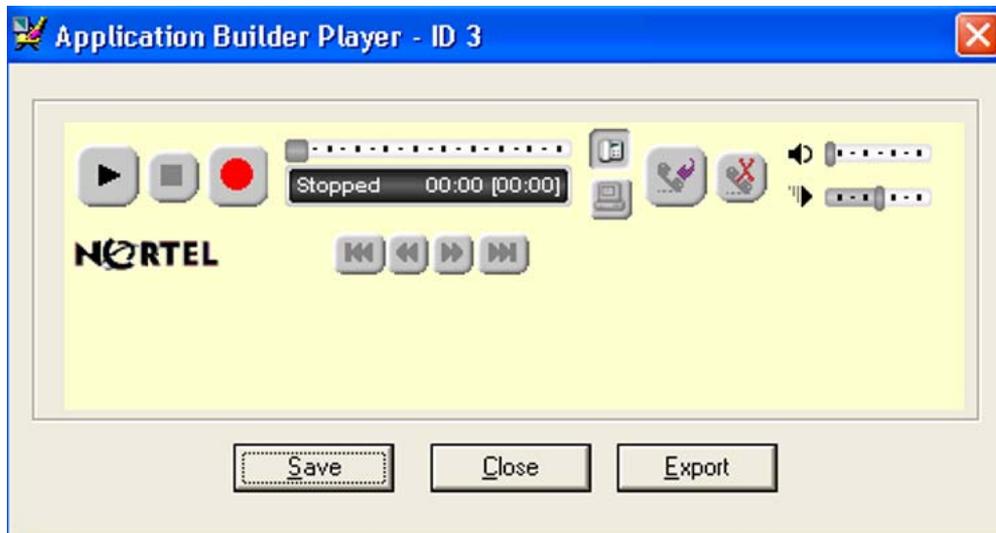
7 Click **Record**.

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, re-record the message by clicking the previous chapter button (|<<), and then record again.

> *Note:* If you re-record without going back to the beginning of your initial recording, you add to the initial recording.

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

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

14 On the Edit voice item dialog box, click **Done**.

15 Click **OK** on the Properties dialog box.

—End—

Importing a voice item

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.

ATTENTION

Risk Voice Quality Degradation

CallPilot converts audio into the following format:

- Audio Format: PCM

- Average data rate: 16 kb/s

- Sample rate: 8 kHz

- Audio sample size: 16 bit

- Channels: 1 (Mono)

There is a risk of degradation in sound quality if the files imported into Application Builder are in another format.

To import a voice item

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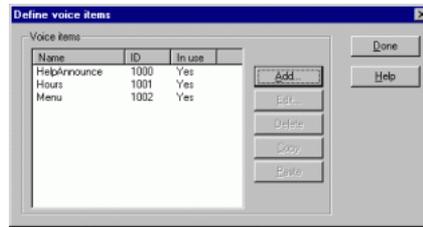
3   Select the voice item into which you want to import, and then click **Edit**.

Result: The Edit voice item dialog box appears.
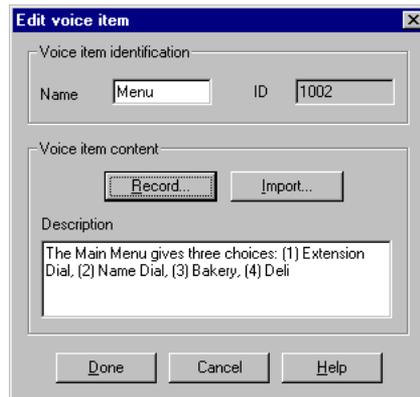
4   Click **Import**.

5   Select the sound file that you want to import.

6   Click **Open**.

7   Click **OK**.

8   Click **Done** and return to the application window.

—End—

Working with voice items

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.
Paste a voice item from the clipboard into the current application window	1. Choose **Define** → **Voice items**. 2. Click **Paste**. 3. If the application contains a voice item with the same name or ID as the voice item you paste, 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

With Voice Item Maintenance (VIM), you can 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 service directory number (SDN) 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

Step	Action
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.

—End—

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 (#).
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 re-record, follow steps 1 to 3.
	6. To delete the recording, press 76.

Action	Steps
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

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" (page 119).

When you are ready to continue, the next step is to add fax items to your application. See Chapter 7 "Working with fax items" (page 91)

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 Chapter 10 "Putting applications into service" (page 123).

Chapter 7
Working with fax items

Section A: About fax items

What are fax items?

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 not recorded, it does not play. However, if it is recorded and contains only background noise, it does play.

Fax items are stored on the server. They are 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 to 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 through 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 the application (see). 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.

*   delivery choice of caller

    With delivery choice of caller, 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 scan 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 is not 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 are 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

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

This lesson demonstrates the fax feature by showing you how to create a fax-on-demand application for SuperValue Grocery store. The store decides 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:
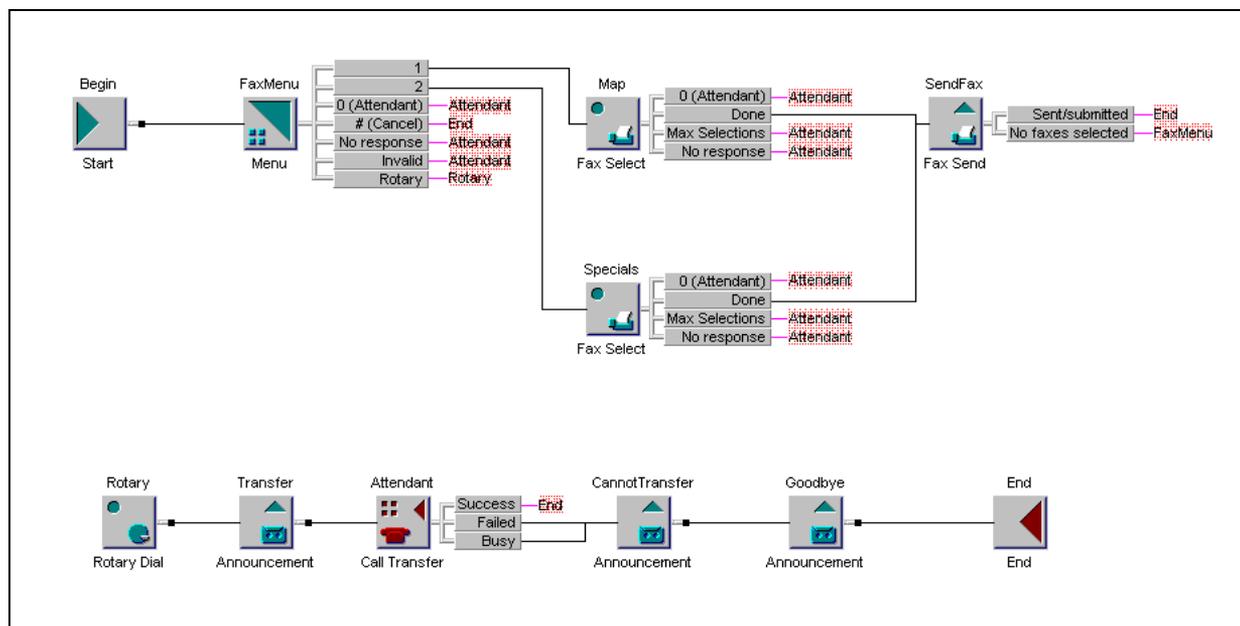
With a menu, callers can choose the fax item that they want. After a caller selects a fax item, the Fax Send block delivers it.

Creating the fax files

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 Networks 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 about scanning, see 'Scan a document into a fax file' on page 158.) The fax item must be 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 this 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

Step	Action
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 **Remove 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**.

—End—

Creating the fax-on-demand application

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

To add the Menu block

Step	Action

1 Create a new application, as you did in Chapter 4 "Creating an application" (page 29).

 Result: The new application appears 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 appears.

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

> *Note:* The name of the block must adhere to the naming
> convention rules for blocks. For more information about naming
> convention rules, see "Naming conventions for blocks" (page 41).

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 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**.
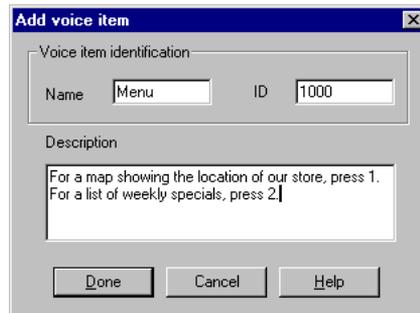
Result: The Edit voice item content dialog box appears.

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

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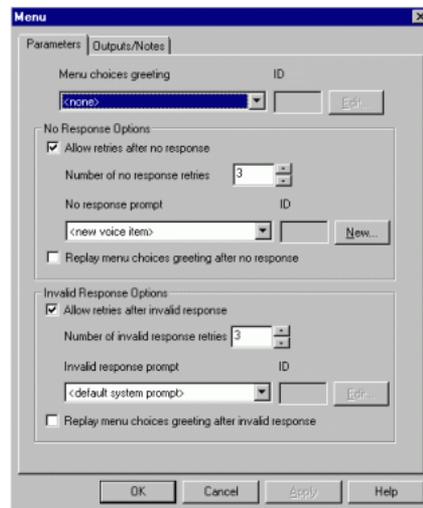
9 Hide the menu key outputs that you are not using. For outputs 3 to 9, right-click the Menu block, point to Hide/Show Outputs, and then click the output number.

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

> *Note:* Because you import 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.

—End—

What to do next

Record or import the content for the menu choices greeting. For more information about voice items, see Chapter 6 "Working with voice items" (page 75).

Adding Fax Select blocks

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

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

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

Result: The Add Fax Select Block dialog box appears.

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

> *Note:* The name of the block must adhere to the naming convention rules for blocks. For more information about naming convention rules, see "Naming conventions for blocks" (page 41).

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 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**.
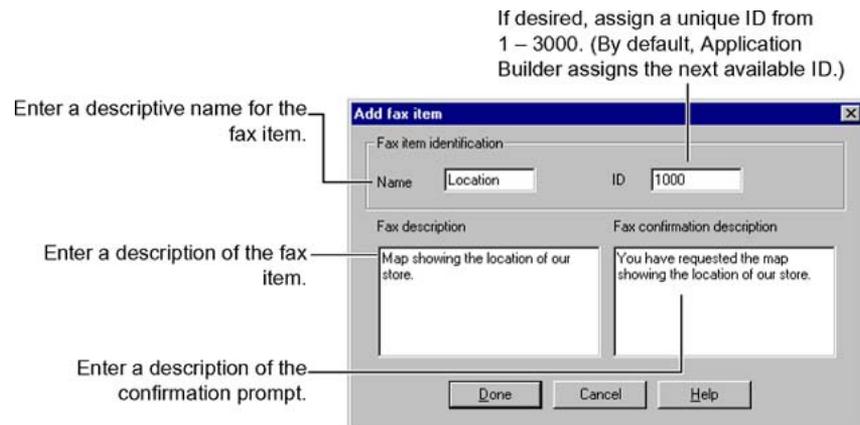
Result: The Edit fax item content dialog box appears.
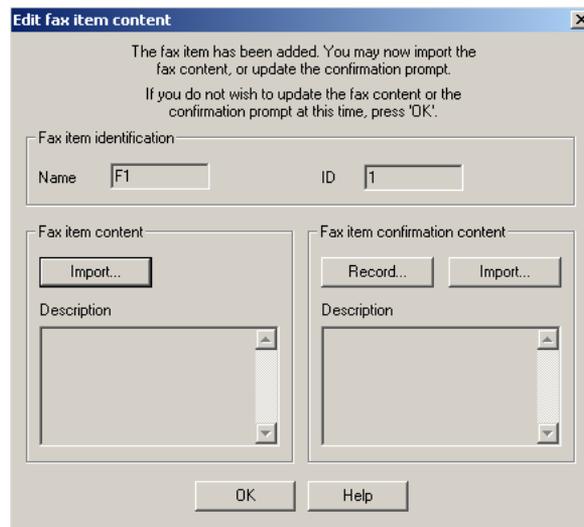
6   To import a fax file, follow these steps:

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 appears.

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**.

Choose whether to allow ———
callers to use the attendant key.
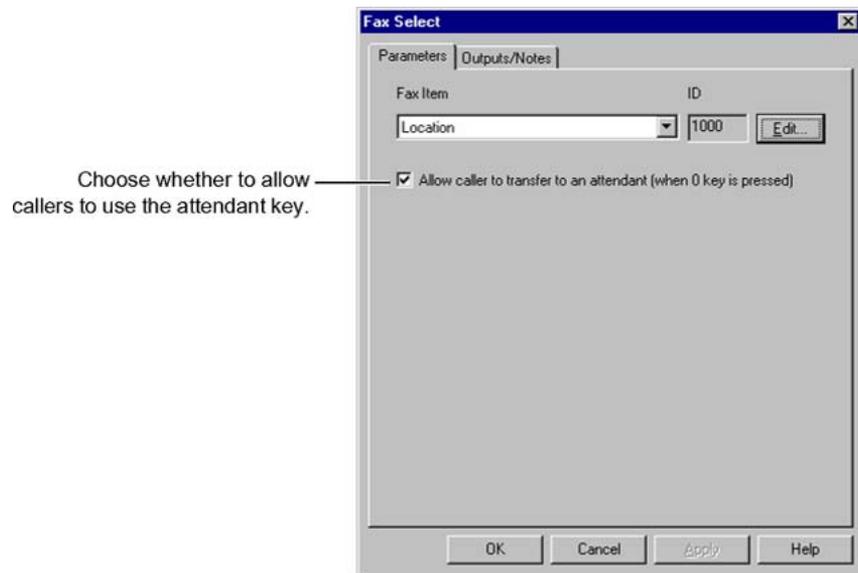
9   Connect the Attendant, Max Selections, and No response outputs to
the Attendant block.

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

—End—

Adding a Fax Send block

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

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

Result: The Add Fax Send Block dialog box appears.

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

> *Note:* The name of the block must adhere to the naming convention rules for blocks. For more information about naming convention rules, see "Naming conventions for blocks" (page 41).

Result: The Fax Send block is added to the window. The block border and the No faxes selected output are pink. The Sent/Submitted 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.)

—End—

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

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**.

Action	Steps
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.
Paste a fax item from the clipboard into the current application window	1. Choose **Define** → **Fax** items. 2. Click **Paste**. 3. If the application contains a fax item with the same name or ID as the fax item you paste, 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

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

Before you use Fax Item Maintenance (FIM) to maintain the fax 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 use fax machines other than the one indicated on the Security tab.

To use Fax Item Maintenance, you must know:

*   the service directory number (SDN) 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

Step	Action
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.

Enable FIM and VIM, and enter the telset maintenance password twice.

Enter the fax number for a verification copy of the fax, and the contact name that appears on the copy.

Choose whether to allow the fax verification number to be changed with FIM.

Choose whether to allow the fax confirmation prompt to be changed with FIM.

File properties

General Security

Defined passwords

☑ Telset maintenance password

Telset maintenance password:

xxxxxxxxxxxxxxxx

Password confirmation:

xxxxxxxxxxxxxxxx

Fax verification

Number: 738   Contact: Gerrie

☑ Allow modification of fax verification number from telset
☑ Allow modification of fax confirmation prompt from telset

OK   Cancel   Apply   Help

4   Click **OK**.

5   Save and close the application.

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

—End—

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 (#).

Action	Steps
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.
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, you can do so before you scan the document. 1. Press 9. 2. To send the fax to the default fax verification number, press number sign (#), press 1, and then go to step 5. 3. To send the fax to a fax verification number other than the default, press number sign (#), next press 2, and then go to step 4. *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. 6. Put the document in the fax machine. 7. Press the **Send** key on the fax machine. **Result:** The fax transmits and Fax Item Maintenance ends.

Action	Steps
	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.
Exit Fax Item Maintenance	Press 83.

Next steps

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" (page 119).

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 8 "Integrating applications" (page 111)

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 Chapter 10 "Putting applications into service" (page 123).

Chapter 8
Integrating applications

In this chapter

Section A: About integrating applications

In this section

Sharing call functions

Sometimes you need to reuse part of an application regularly. Two options are available to 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 need to reuse a few simple blocks, or if you want to copy a set of functions that you cannot save as a separate, complete application.

- **import an application that performs the required functions**--You can import an entire application into another application. With this option, you can 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 this 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. Then, callers can dial people only by number. You connect the Call Transfer block to the number 2 menu key. You also configure this 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

In this section

Exporting an application

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

Step	Action
1	In Application Builder, open the source application (Fax) that you created in "Section B: Lesson -- Creating a fax application" (page 95).
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 is exported, choose **File** → **Properties.** "Yes" indicates that the application is exported.
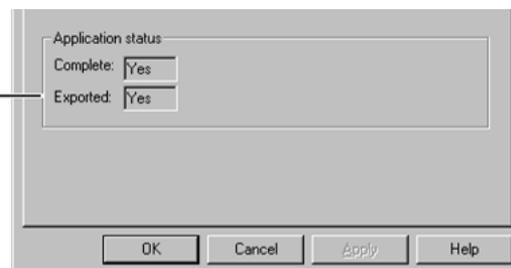
5   Click OK, and then save and close the application.

—End—

Importing an application

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

Step	Action
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.

—End—

What to do next

You must create new content for the Menu voice item. Update the menu to 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" (page 83).

Next steps

When your applications are complete, you can set them up as a service. See Chapter 10 "Putting applications into service" (page 123).

Chapter 9
Saving applications

In this chapter

Ensuring that an application is complete

An application is complete when you connect and configure 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

Step	Action
1	Choose **File → Properties**.
2	Click the **General** tab. If the Complete box contains "Yes," you can export or import the application.
3	Click **OK**.
	—End—

How Application Builder stores files

When you create an application in Application Builder, the 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. At this point, an administrator on another computer or at another site can 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.
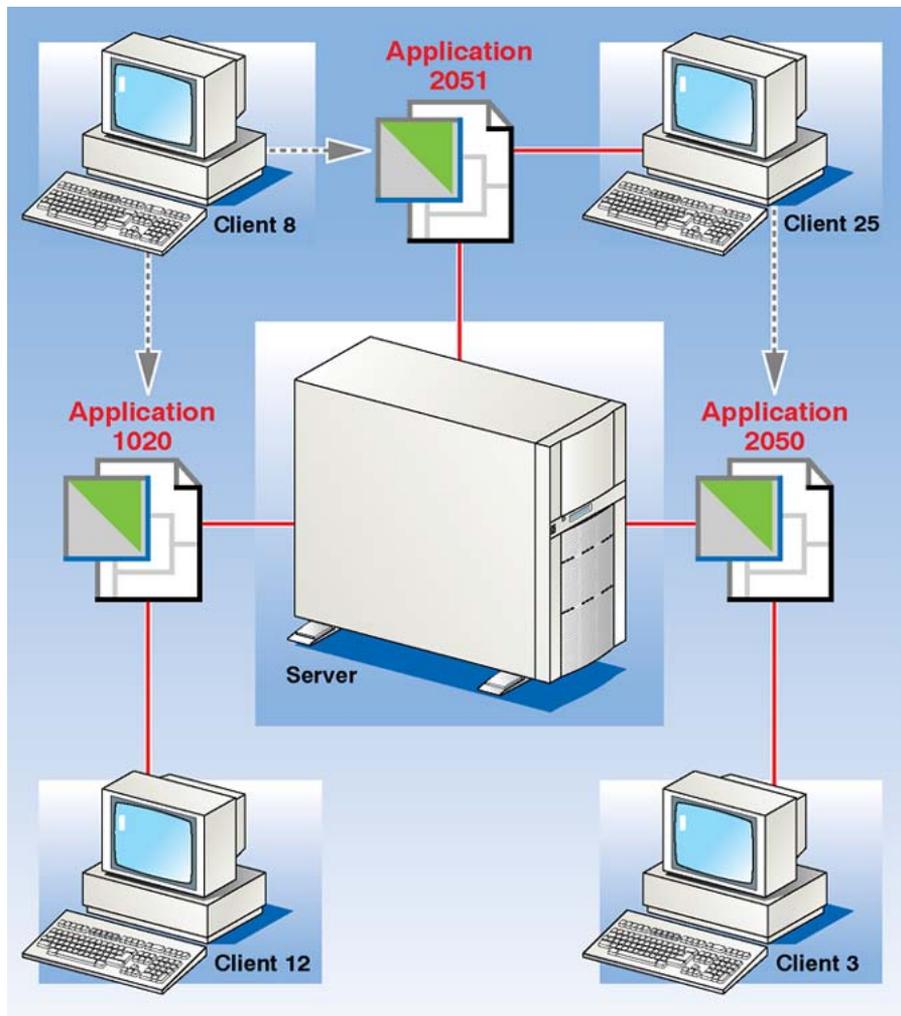
G100879

To view a list of locked applications
Choose **File → Locks**.

Result: The list of locked applications appears.

Saving and closing applications

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.

> **ATTENTION**
>
> If the user attempts to save the 501st application on volume one, an error dialog box appears.
>
> Only 500 applications can be saved on the first volume, 1000 applications on the second volume, and 1000 applications on the third volume.

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

Step	Action
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**.

—End—

To manually save an application

When you complete 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

When 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 did not save 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 10 "Putting applications into service" (page 123)).

Chapter 10
Putting applications into service

In this chapter

How applications become services

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.

After 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 after 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

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 about session profiles, see "Setting up the session profile for applications" (page 124).

3. Test the application from the caller's perspective to ensure that the call flow works as you intended. For more information about testing, see "Testing applications" (page 128).

4. After 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 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

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* (NN44200-601).

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. Because 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 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.

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

Using a cover page for fax services

Two types of cover pages are 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 about fax services, see the *Administrator's Guide* (NN44200-601).

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 can 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, include all 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 Networks 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

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, by doing so, gain valuable design input. As you test the application, you can ensure that the application works as you intended.

When to test

You can test an application only after 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 11
Archiving and restoring applications

In this chapter

How to archive and restore applications

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 can archive all applications on a regular basis to ensure that you have a complete backup of your application services. Archiving 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 need to recover from data loss. When you restore 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.

<div style="border:1px solid black; padding:10px;">

ATTENTION

Make a backup of your data prior to any upgrade.

</div>

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 *Administrator's Guide* (NN44200-601).

Chapter 12
Troubleshooting

In this chapter

Diagnosing problems

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 to 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, an error message appears.

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

- **infinite loops** - An infinite loop is created when the call path between one or more blocks loops back to the first block. This means that calls that pass through the output cannot 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 is not 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
Application Builder requires services that run on the server. If those services are not running or if the server crashes, then Application Builder cannot run.

System requirements
Confirm the Application Builder system requirements. For information about system requirements, see "Installing Application Builder" (page 23).

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

To run Application Builder after the server crashes

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

—End—

To run Application Builder after a required service crashes

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

—End—

To run Application Builder after a required service is not running

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

—End—

Client or server crashes

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 change 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

Step	Action
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.

—End—

To recover an application on another client computer

Step	Action
1	Run Application Builder with the mailbox number and password of the administrator who opened the application.
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.

—End—

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 can contain an infinite loop that uses up system resources.

Solution

Verify that your applications do not contain infinite loops. Infinite loops occur when you connect a block's output back to the same block or more blocks are connected to the first 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. Enable Program Diagnostics to detect infinite loop problems.

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 because the Menu block must wait for the caller to make a menu selection.

Troubleshooting application development problems

The Application Builder online Help contains information to help you troubleshoot problems you can encounter while you design or work 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 troubleshooting information, open the Troubleshooting book in the Application Builder online Help.

Appendix A
Sample applications

In this appendix

Section A: Applications for educational institutions

In this section

The University of City main menu

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.
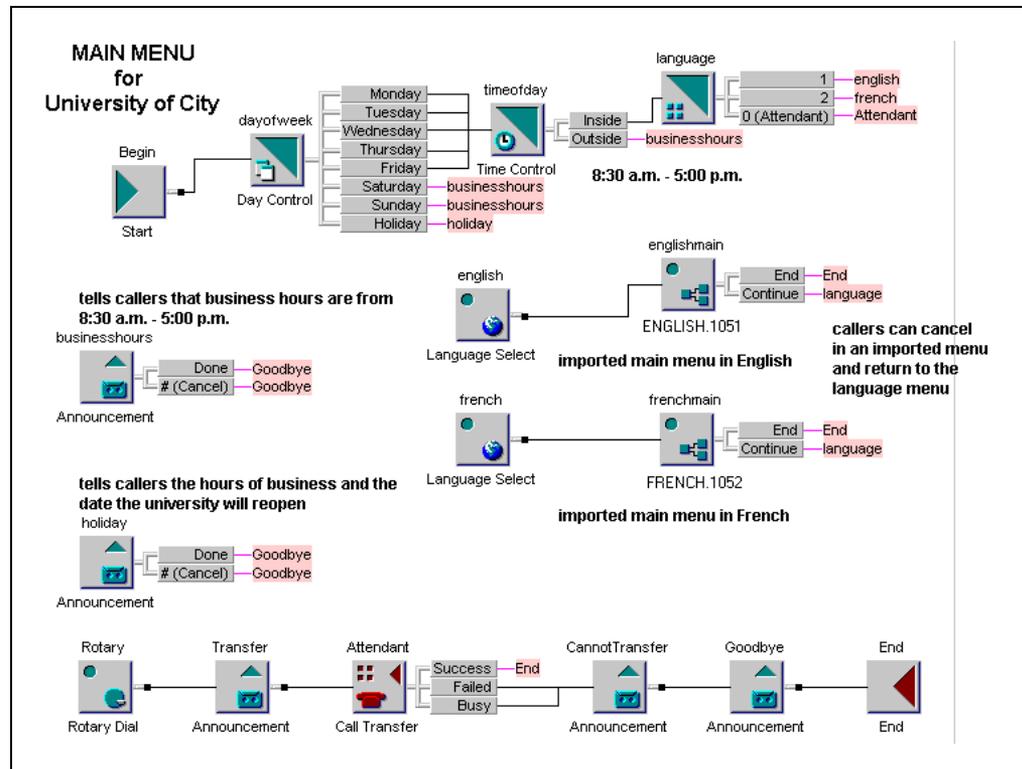
Description of the main menu of university

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

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.
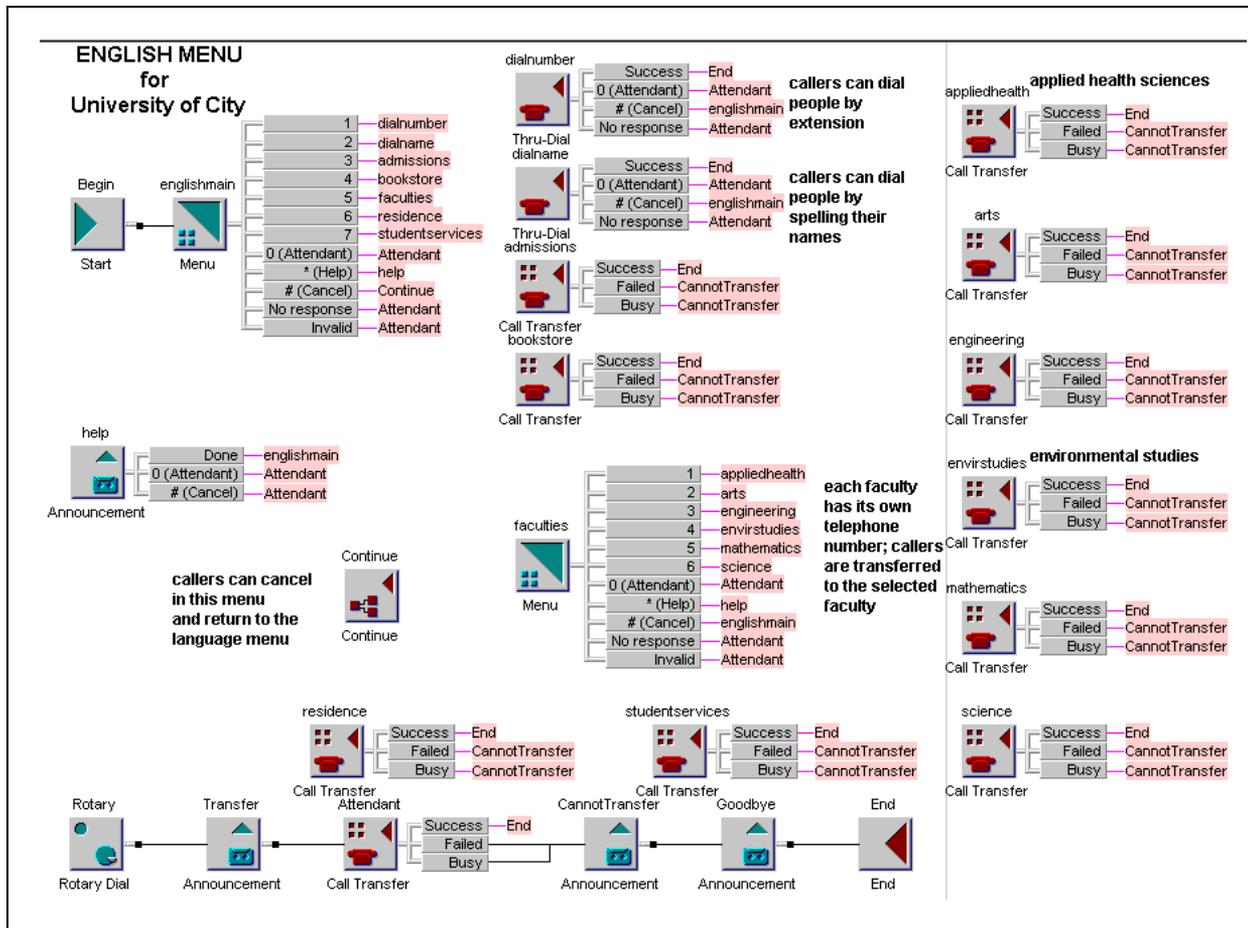
Description of the English menu of the university

With the English menu, callers can:

- 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 can 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 can 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

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.
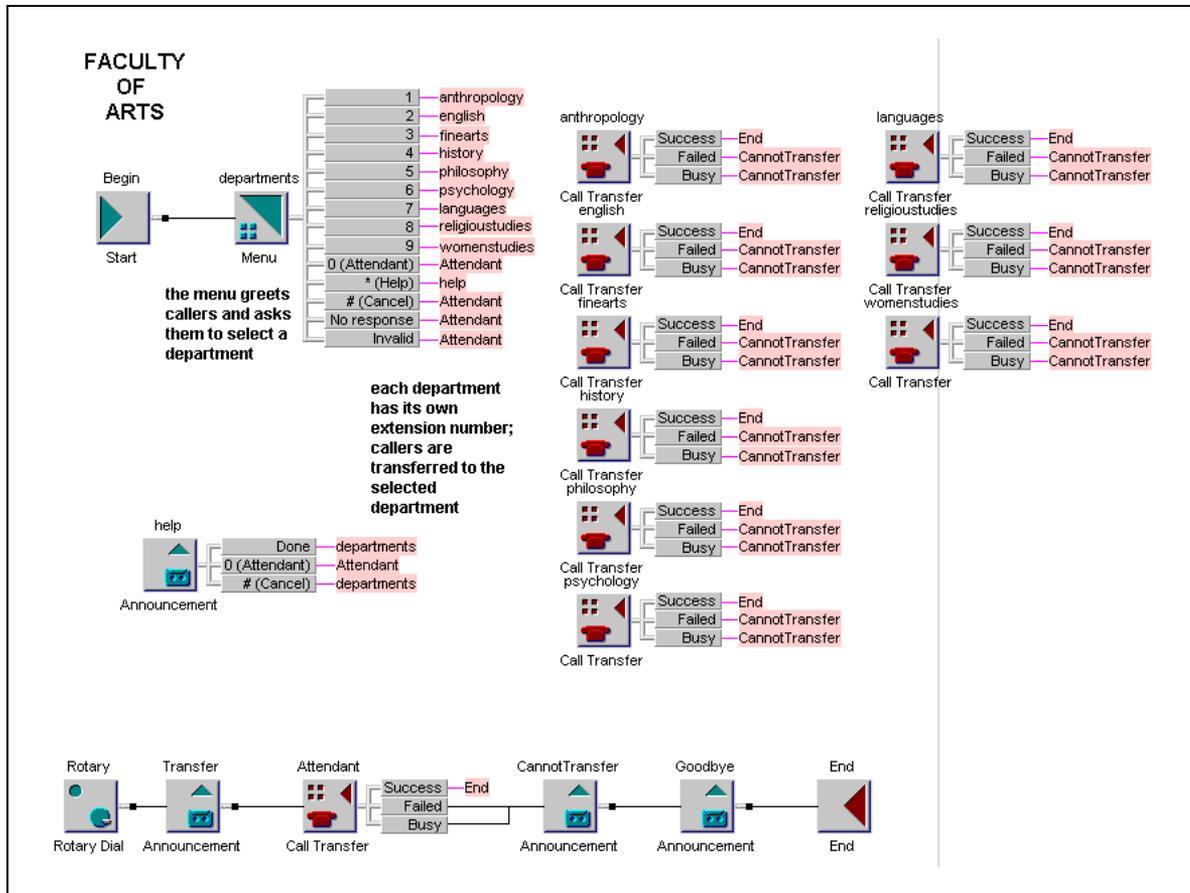
Description of the Faculty of Arts application

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 can 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

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.
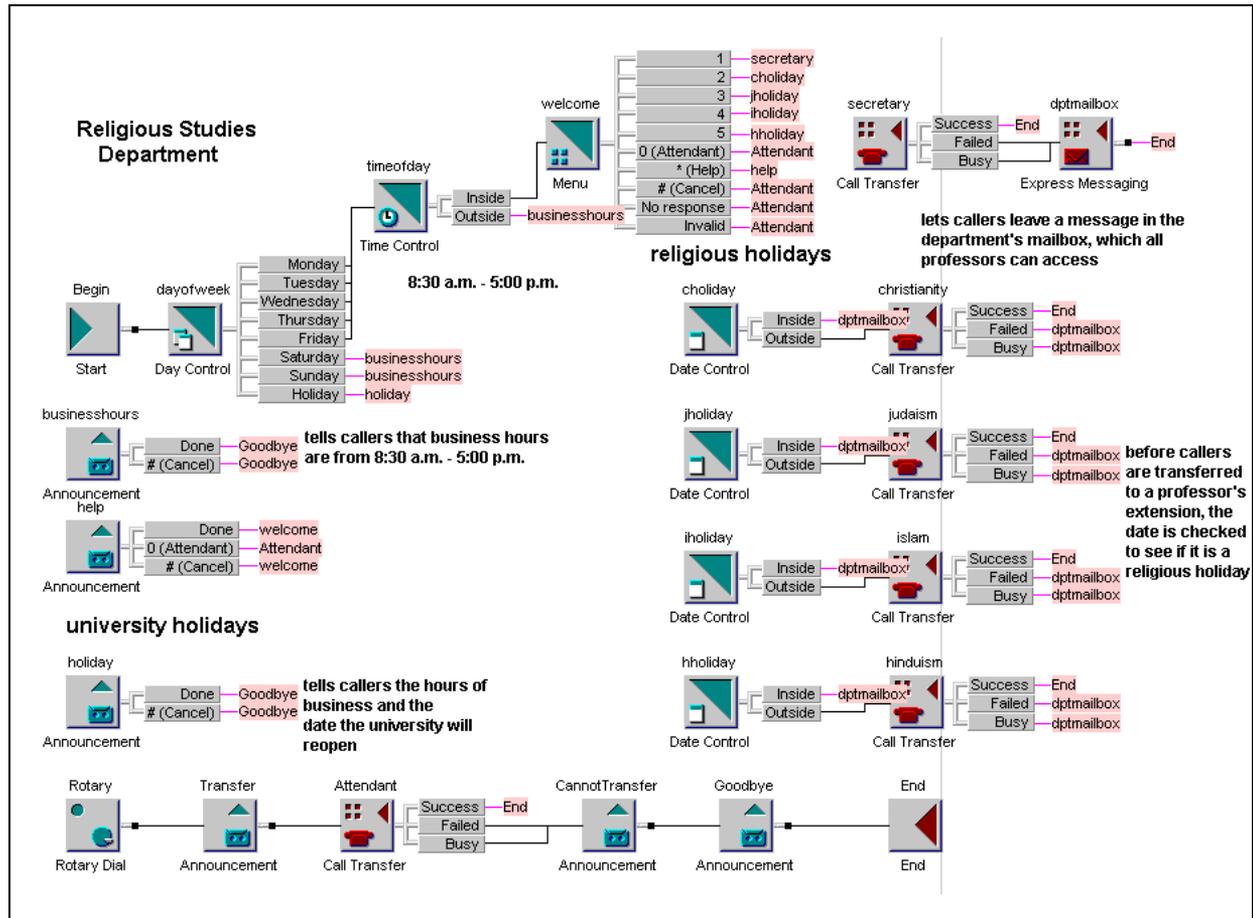
Description of the Religious Studies department menu

Because 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, non business 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
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.
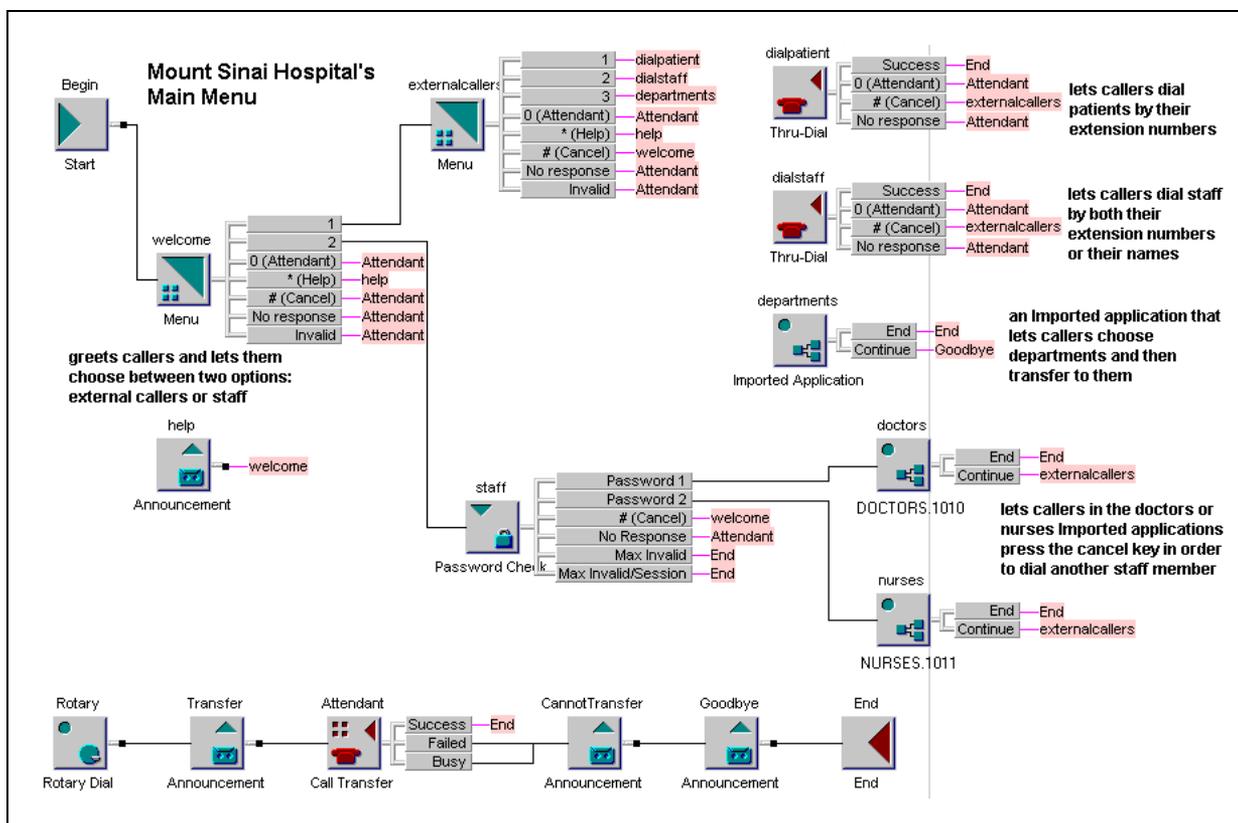
Description of the main menu of the hospital

The Mount Sinai Hospital main menu greets callers and directs external callers to press 1 and staff to press 2. Because 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 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

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.

Mount Sinai Hospital's Nurses' Menu
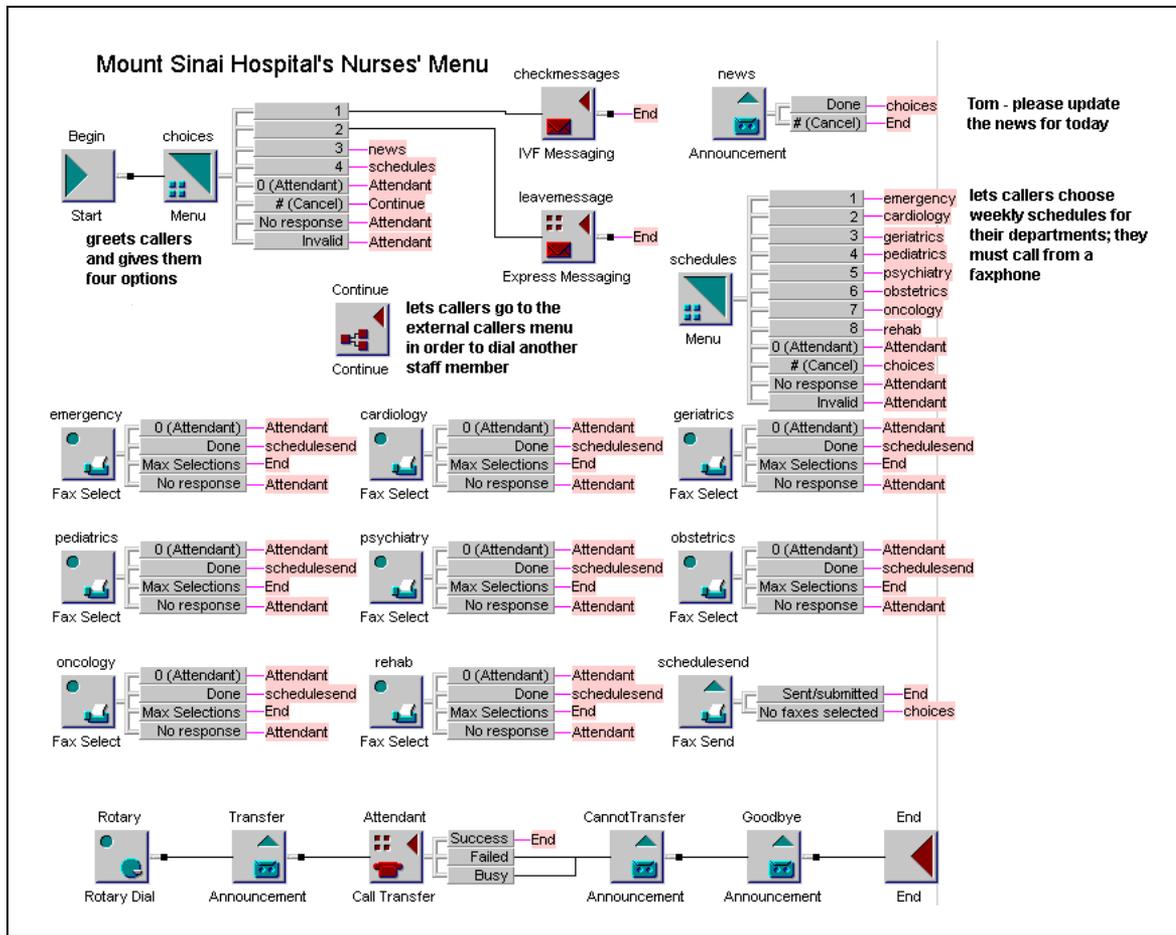
Description of the menu for nurses

From their menu, nurses can access their mailboxes and leave messages for other staff members using 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.

Because 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

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. Through the main menu customers can access various types of Thru-Dials, and different information.
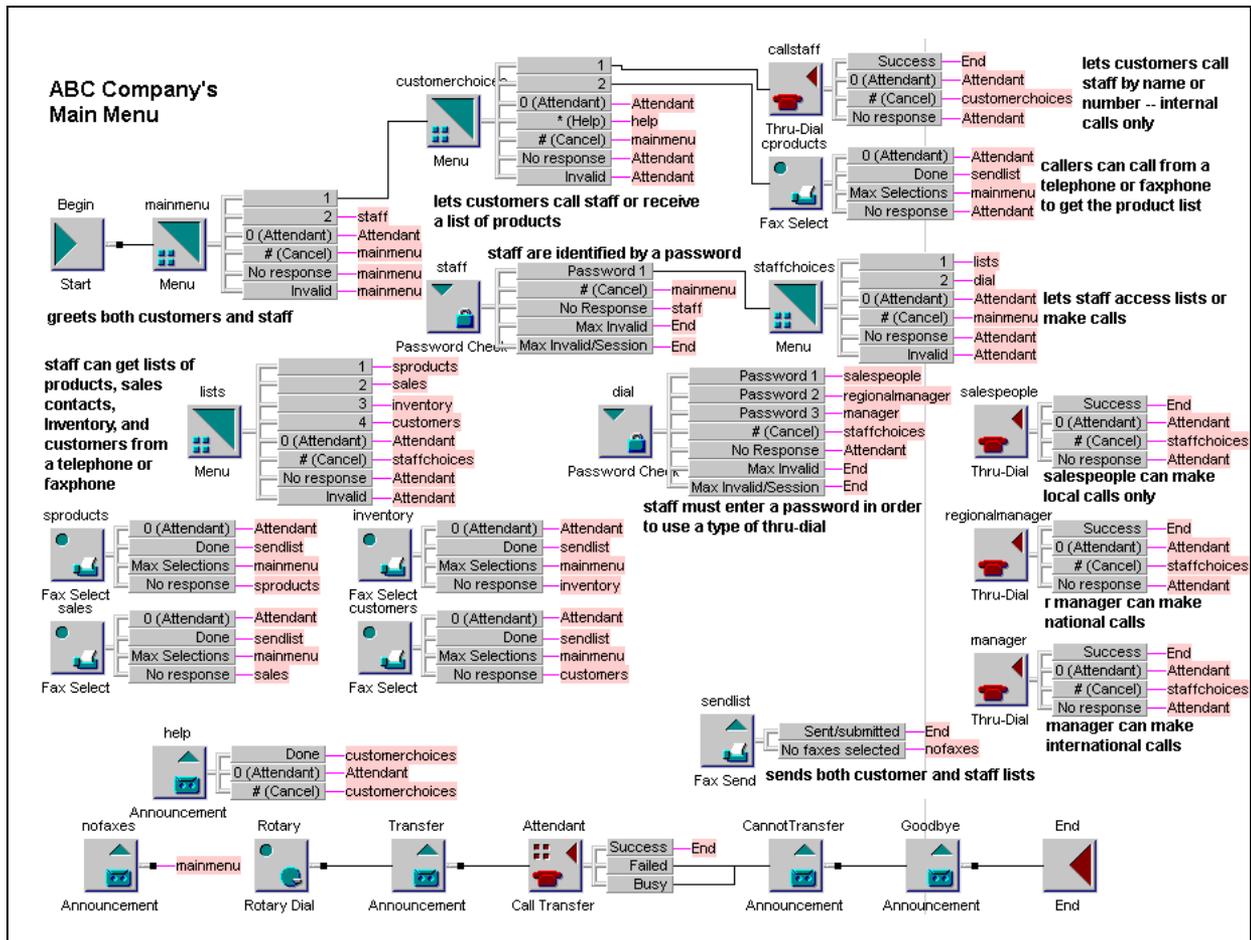
Description of main menu of ABC Company

The first Menu block, "mainmenu", greets callers and ensures that they identify themselves as either customers or staff. Customers are 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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