



Configuring Personal Assistant

The following sections describe how to configure Personal Assistant:

- [Personal Assistant Configuration Task List, page 4-1](#)
- [Logging On to and Out of the Personal Assistant Administration Interface, page 4-3](#)
- [Configuring Speech Recognition, page 4-4](#)
- [Configuring Telephony Providers, page 4-7](#)
- [Configuring the Corporate Directory, page 4-7](#)
- [Specifying the Cisco CallManager Internal Directory Configuration \(Personal Assistant Version 1.4\(3\) or Later\), page 4-10](#)
- [Configuring Personal Assistant Servers, page 4-10](#)
- [Configuring Messaging, page 4-12](#)
- [Configuring Enhanced Text to Speech, page 4-14](#)
- [Creating a Simple Automated Attendant, page 4-15](#)
- [Creating Dialing Rules, page 4-16](#)
- [Configuring Directory Lookup Rules, page 4-17](#)
- [Configuring Directory Hierarchies, page 4-18](#)
- [Setting Up Systemwide Rules, page 4-19](#)
- [Integrating Personal Assistant with a Cisco Unity Voice Messaging System, page 4-20](#)
- [Integrating Personal Assistant with an Octel Voice Messaging System, page 4-23](#)
- [Integrating Personal Assistant with Exchange 5.5, page 4-24](#)

Personal Assistant Configuration Task List

Personal Assistant does not function until you complete a minimal configuration. After installing Personal Assistant, you use the administration interface to create speech server clusters and Personal Assistant server clusters, and to configure the connections between these clusters and the various directories, voice mail systems, and other servers that Personal Assistant should use. The

following task list helps you understand what you must do to make Personal Assistant operational, and also indicates which configuration steps are optional. The cross-references lead to sections that provide details for each configuration step.

1. Log on to the Personal Assistant Administration interface. See the [“Logging On to and Out of the Personal Assistant Administration Interface”](#) section on page 4-3.
2. If you are using Personal Assistant speech-recognition capabilities, create and configure the speech server clusters. See the [“Configuring Speech Recognition”](#) section on page 4-4.
3. Create the telephony providers that the Personal Assistant servers will require. You must create these providers before you create the server clusters. See the [“Configuring Telephony Providers”](#) section on page 4-7.
4. Identify the corporate directory to Personal Assistant. See the [“Configuring the Corporate Directory”](#) section on page 4-7.
5. Create and configure the Personal Assistant server clusters. See the [“Configuring Personal Assistant Servers”](#) section on page 4-10.
6. If you are using Personal Assistant version 1.4(3) or later and if Cisco CallManager is using its internal directory, specify the Cisco CallManager internal directory configuration. See the [“Specifying the Cisco CallManager Internal Directory Configuration \(Personal Assistant Version 1.4\(3\) or Later\)”](#) section on page 4-10.
7. Configure the following messaging features, as applicable to your configuration:
 - Calendar-based call routing rules.
 - The ability for users to create call routing rules that send e-mail pages to them.
 - The ability for users to access voice mail while calling Personal Assistant, or to create call routing rules that send callers directly to voice mail.
 - Automatic notification from Personal Assistant when user PINs have been changed (only available if the system is configured to use the Cisco CallManager PIN).

See the [“Configuring Messaging”](#) section on page 4-12.

8. Identify the operator to whom Personal Assistant will transfer calls if a user has problems with Personal Assistant. See the [“Miscellaneous Settings”](#) section on page A-12.



Note From the Miscellaneous Settings page, you can also set up logging, and can modify additional settings. Many settings on the Miscellaneous Settings page are optional, and need to be changed only if you find the default settings inappropriate for your network.

9. If you are using the enhanced Text to Speech feature, configure the settings for your enhanced Text to Speech server. See the [“Configuring Enhanced Text to Speech”](#) section on page 4-14.
10. If you want to use Personal Assistant as a simple automated attendant, which would allow callers to dial users by name rather than by number (thus enabling callers to find an employee without knowing the phone number), configure the AA prompt and route point. See the [“Creating a Simple Automated Attendant”](#) section on page 4-15 and the [“Configuring Personal Assistant Servers”](#) section on page 4-10.
11. If you want to make dialing easier for users, you can configure dial rules that will automatically modify the numbers they dial. For example, if your phone system requires you to dial 9 to access an outside line, you can set up Personal Assistant to look for dialed numbers that are 7 digits and automatically add a 9 to the front of the number. See the [“Creating Dialing Rules”](#) section on page 4-16.

12. Personal Assistant looks up callers in the corporate directory when an internal caller is placing a call to another user. In order for Personal Assistant to find the caller, the number of the caller must match the number as written in the corporate directory. If the numbers do not match, Personal Assistant will not be able to determine the caller. This can happen, for example, if you enable 5-digit calling on the internal network, but you use 7- or 10-digit numbers in the corporate directory.

If you want Personal Assistant to be able to identify callers (which is required for effective call routing rule processing), configure directory lookup rules. See the [“Configuring Directory Lookup Rules” section on page 4-17](#).
13. If you have a large number of users, users might encounter problems when trying to dial a party by name. For example, there might be too many parties that have the same or similar names. To help users narrow the Personal Assistant search, you can create directory hierarchies that will let users specify a location or department to search. See the [“Configuring Directory Hierarchies” section on page 4-18](#).
14. If you want to set up rules to apply to all calls that come through the Personal Assistant system, create and configure systemwide rules. See the [“Setting Up Systemwide Rules” section on page 4-19](#).
15. If you are using Cisco Unity, configure the integration with the messaging system to enable voice mail browsing for your users. See the [“Integrating Personal Assistant with a Cisco Unity Voice Messaging System” section on page 4-20](#).
16. If you are using Octel voice messaging, configure the integration with the messaging system to allow Personal Assistant to distinguish between internal and external Octel numbers. See the [“Integrating Personal Assistant with an Octel Voice Messaging System” section on page 4-23](#).
17. If you are using Exchange 5.5, configure the integration with Exchange to allow Personal Assistant to send e-mail for refresh notification, PIN changes, and paging. See the [“Integrating Personal Assistant with Exchange 5.5” section on page 4-24](#).

Logging On to and Out of the Personal Assistant Administration Interface

You must log on to the Personal Assistant Administration interface to view or change the Personal Assistant configuration. Personal Assistant manages logons based on Windows 2000 local user accounts. You must use an account with administrative privileges on the Windows 2000 system running the administration interface in order to change the Personal Assistant configuration.

To Log On to and Out of the Personal Assistant Administration Interface

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- Step 1** From a supported web browser window, open the Personal Assistant Administrator page by using the format `http://<PA host>/pasystemadmin`, where PA host is the server on which you installed the administration interface.

For example, if you installed the administration interface on a server named paserver, the URL would be `http://paserver/pasystemadmin`.

The Log on screen displays.
 - Step 2** Enter a Windows 2000 local user name that has administrator authority, and its password. The user name must be defined on the system that is running the administrator interface.
 - Step 3** Click **Log in**. Personal Assistant logs you on to the system, and you can access the various configuration pages.

Step 4 Click **Session > Logout** in the menu bar to log out of the system when you are finished configuring Personal Assistant.

The system automatically logs you out after 30 minutes of inactivity.

Configuring Speech Recognition

You must configure speech services to create speech server clusters. This allows users to talk to Personal Assistant over the phone, for example, dialing parties by name rather than by phone number. See the [“To Configure Speech Recognition” procedure on page 4-4](#). If you are not using speech recognition with Personal Assistant, you can skip this configuration.

You can also fine-tune speech recognition if users are having problems with the speech recognition interface. See the [“To Fine-Tune Speech Recognition” procedure on page 4-5](#). Problems that you can address include:

- Users being asked too often to confirm their commands.
- Users being transferred to the operator too often because:
 - There are a large number of similarly named people in your corporate directory.
 - Errors occur in Personal Assistant understanding spoken commands.
 - Users ask for help from Personal Assistant too often during a session.

Make sure you have the license document included in the Personal Assistant package.

Personal Assistant uses defaults for all speech recognition parameters, and these should work well with most installations. Before fine-tuning the speech recognition parameters, confirm that any reported problems are widespread. If changes are necessary, trial and error is the only way to determine effective settings for these parameters for your specific needs.

To Configure Speech Recognition

Step 1 In the Personal Assistant Administration, select **System > Speech Services**. The Speech Services Configuration page opens.

Step 2 If you want Personal Assistant to automatically refresh cached user information from the corporate directory on a daily schedule, check the **Daily Automatic Refresh** check box, and set the time by using the Refresh Schedule hour and minute lists. This ensures that the corporate directory information stays up-to-date, and that the speech recognition software has the data required to understand spoken commands.



Note Depending on the size of your corporate directory, the number of locales installed, and the number of directory hierarchies configured, it can take a significant amount of time to fetch this information, compile it, and publish it to the speech servers. Pick a time when directory updates are complete for the day, and there is reduced user access to Personal Assistant and the directory.

Step 3 If you want Personal Assistant to send you the refresh status by e-mail when a refresh has completed, check the **Send Refresh Status** check box, and enter your e-mail address in the Administrator E-mail Address field.

Step 4 In the License Key field, enter your speech recognition license key.

After clicking **Save**, Personal Assistant displays the number of licenses, which is the maximum number of simultaneous speech ports and locales available when using this license key.

- Step 5** Create the speech server cluster by doing the following substeps:
- a. For each speech server, in the Speech Recognition Server Hosts field, enter the server IP address or DNS name, and click **Add**. Note that the speech servers are not activated until the next refresh.
 - b. Identify one or two Personal Assistant servers that should be used as the license manager hosts. All Personal Assistant servers include license managers, but you must identify which ones will be actively used for distributing licenses.
 - c. In the Speech Recognition License Manager Hosts field, enter the IP address or DNS name of the Personal Assistant server you want to use, and click **Add**. Cisco recommends that you identify two servers, so that there is a backup license manager. Speech recognition works when there is at least one active license manager.
- Step 6** From the Available Locales list, select the locales you want to support, and click **>>**. You can select multiple locales by using **Ctrl-Click** or **Shift-click**. Personal Assistant allows you to add more than one locale only if your license key allows it.
- Step 7** From the Default Locale list, select the language Personal Assistant will initially use in the speech-recognition interface and on the user web interface.

Note that if you do not set a default locale, users will not have speech recognition and will be unable to access the user web interface.



Note Users can later select a different locale for their use by using the user web interface. Personal Assistant uses the locale the user selects once it identifies who is calling or who is logging on to the user web interface.

- Step 8** Click **Save** to save and activate your changes.



Tip

Select **System > Miscellaneous Settings** and enter the operator extension so that users are transferred to the operator if they encounter too many speech recognition problems.

To Fine-Tune Speech Recognition

- Step 1** In the Personal Assistant Administration, select **System > Speech Services**. The Speech Services Configuration page opens.
- Step 2** If you are trying to resolve problems in which users are being transferred to the operator too quickly, you can make any of the following changes:
- If users are being transferred to the operator because there are many similarly named people in your phone directory, change the Maximum Number for Disambiguation parameter.
- The Maximum Number for Disambiguation setting determines the number of options (people, numbers, and so on) a user can select from when trying to call a person with a common name, such as John Smith. By increasing this number, Personal Assistant presents additional selections and reduces transfers to the operator.

If Maximum Number for Disambiguation is set to “3,” a user will be presented with up to three selections if there are multiple people with the requested name. Therefore, if three people in your company share the name “John Smith,” Personal Assistant plays the recorded name and extension for each of the three, allowing users to select the applicable John Smith. If there are more than three people with the name John Smith, the user is transferred to the operator.

- If Personal Assistant is being interrupted too often and fails to provide users with the applicable prompts, uncheck the Allow Barge-In check box.

Barge-In allows a user to interrupt Personal Assistant and issue a command in the middle of a prompt. However, in situations with excessive background noise, Personal Assistant might be accepting the noise as valid interruptions.

- If users are being transferred to the operator because they are encountering speech-recognition errors, increase the number of errors allowed. When the Max Error Count per Dialog is reached during a dialog, or the Max Error Count per Call is reached during an entire session, the user is transferred to the operator. However, if you set the values too high, users can become frustrated while using Personal Assistant.
- If users are being transferred to the operator because they are requesting help too often, you can increase the number of times they are allowed to request help. When the Max Help Count per Dialog is reached during a dialog, or the Max Help Count per Call is reached during an entire Personal Assistant session, the user is transferred to the operator.

Step 3 If you are trying to resolve problems in which users are being asked to confirm their commands too often, you can change the Rejection Confidence Level and Reconfirm Confidence Level parameters.

The speech-recognition software assigns a percentage confidence level to every recognized utterance. The default Rejection Confidence Level is 45 percent.

- If the software is less confident that it understood the speaker than the Rejection Confidence Level, Personal Assistant tells the user it did not understand the request: “Sorry, I didn’t understand.” The user can then repeat or rephrase the request.
- If the confidence level is between Rejection Confidence Level and the Reconfirm Confidence Level percentages, Personal Assistant tells the speaker its interpretation of the request and asks the speaker to confirm the interpretation: “John Smith? Is this correct?” The speaker can then say yes or no. If yes, Personal Assistant completes the request. If no, the speaker must repeat or rephrase the request.
- If the confidence level is higher than the Reconfirm Confidence Level, Personal Assistant initiates the request without asking for confirmation: “Calling John Smith.” The speaker can stop Personal Assistant by saying “cancel” or “no.”

If you set Reconfirm Confidence Level too high, users will have to reconfirm most commands. If you set it too low, Personal Assistant might initiate too many unintended tasks.

Step 4 Click **Save** to save and activate your changes.

Step 5 If you are installing or upgrading Personal Assistant, continue to follow the applicable task list. Otherwise, if you added or removed a speech server or license manager, click **Refresh Now** to update the Personal Assistant configuration and load the new servers with the information required for them to operate correctly. (Ensure that the refresh is successful by clicking **Last Refresh Details** when the refresh is complete. If the refresh is not successful, see the [“Troubleshooting Failed System Refreshes” section on page 6-11](#) to resolve the problem before proceeding.)

Configuring Telephony Providers

You must configure the telephony interface between Personal Assistant and the Cisco CallManager clusters so that Personal Assistant can successfully receive and transfer phone calls. The settings you enter here must correspond to the Personal Assistant user you created in Cisco CallManager (see the [“Adding Personal Assistant as a JTAPI User”](#) section on page 3-9).

You must create one JTAPI provider and one Skinny provider for every Cisco CallManager cluster in which Personal Assistant servers have their phone numbers and route points defined. For example, if you have five Cisco CallManager clusters in which Personal Assistant servers have numbers defined, you must define at least ten providers (five JTAPI, five Skinny).

Personal Assistant uses both JTAPI and Skinny protocols, and must have providers for both. JTAPI is used for interceptor ports and route points; Skinny is used for media ports.

See the [“Configuring Personal Assistant Servers”](#) section on page 4-10 for more information on server configuration.

To Configure Telephony Providers

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- Step 1** In the Personal Assistant Administration, select **System > Telephony**. The Telephony Configuration page opens.
 - Step 2** In the Provider Group Name field, enter a meaningful name for the provider group you are adding. When configuring Personal Assistant servers, you will select providers based on the names you enter in this field.
 - Step 3** In the Provider Type field, select the type of telephony service the group is providing.
 - Step 4** Identify the provider, based on provider type:
 - **JTAPI**—For JTAPI providers, enter the DNS name or IP address of the CTI Manager for the Cisco CallManager cluster, and click **Add**. You can identify more than one CTI Manager, but they must be in the same cluster. Then, enter the user name and password for the Personal Assistant user added to Cisco CallManager. Personal Assistant uses this information to log into Cisco CallManager.
 - **Skinny**—Enter the DNS name or IP address of the Cisco CallManager server, and click **Add**. You can identify more than one server, but they must be in the same cluster. Do not enter a user name and password for Skinny providers.
 - Step 5** Click **Insert** to add the provider to the left-hand list of providers.
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Tip

To view or modify the configuration for a provider, or to delete it, click the provider name in the left-hand list. The provider settings are loaded into the page, and you change them if required.

Configuring the Corporate Directory

You must identify the corporate directory so that Personal Assistant can look up information such as phone numbers and locations for all of the employees in the corporation. Personal Assistant uses this information to find the phone number for an employee when someone tries to phone the employee by using the employee name.

Before you begin the procedure, you must know some details about the corporate directory. Review the procedure and contact your directory administrator to obtain any information you do not know.

To Configure the Corporate Directory

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- Step 1** In the Personal Assistant Administration, select **System > Corporate Directory Settings**. The Corporate Directory Settings page opens.
- Step 2** In the Unique User Attribute Name field, enter the unique identifier attribute field used in the corporate directory.
- Personal Assistant uses this attribute to identify each user. For example, even if two users have the same name (John Smith), they have unique e-mail addresses.
- The field that you use depends on your corporate directory. Use the applicable field, as follows:
- For Cisco CallManager DC Directory—enter **cn**
 - For Active Directory—enter **sAMAccountName**
 - For Netscape Directory—enter either **cn** or **uid**
- For any other directory, ask the directory administrator for the name of the unique field.
- Note that the name is case sensitive.
- Step 3** In the Directory Server URL field, enter the URL for the corporate directory, including the port number. The value that you enter depends on your corporate directory. Use the applicable value, as follows: (Note that these options use the default port numbers for each type of directory.)
- For Cisco CallManager DC Directory—Enter `ldap://<Fully qualified domain name of the corporate directory server>:8404`.
 - For Active Directory, single domain—If your users are contained in a single domain, enter `ldap://<Fully qualified domain name of the domain controller>:389`.
 - For Active Directory, multiple domains—If you have defined users in multiple domains, enter `ldap://<Fully qualified domain name of the Global Catalog server>:3268`.
 - For Netscape Directory—Enter `ldap://<IP address of the Netscape Directory server>:389`.
- For any other directory, ask the directory administrator for the value to use.
- Step 4** If the directory requires authentication for access, enter the administrator name in the Directory Admin DN field, and enter the password in the Directory Admin Password field.
- The value that you enter in the Directory Admin DN field depends on your corporate directory. Use the applicable value, as follows:
- For Cisco CallManager DC Directory—Enter `cn=Directory Manager,o=domain.com`.
 - For Active Directory—Enter `<Active Directory administrator user ID>@<Fully qualified domain name>`.
 - For Netscape Directory—Enter `cn=Directory Manager`.
- Note that Directory Manager is the default administrator user ID for Cisco CallManager DC Directory and for Netscape Directory. If your system uses a different administrator user ID, use the applicable value.
- For any other directory, ask the directory administrator for the value to use.
- Step 5** In the Directory Search Base DN for Users field, enter the Distinguished Name (DN) for the user node of your corporate directory.

The value that you enter depends on your corporate directory. Use the applicable value, as follows:

- For Cisco CallManager DC Directory—Enter `ou=<Root user DC Directory node>,o=<Fully qualified domain name>`. For example: `ou=Users,o=Domain.com`.
- For Active Directory—Enter a comma-separated list of each component of the distinguished name for the user node in Active Directory. For example: if the node is `UserNode1.Subdomain1.Domain.com`, enter `dc=UserNode1,dc=Subdomain1,dc=Domain,dc=com`.
- For Netscape Directory—Enter `ou=People,o=<Fully qualified domain name>`. For example: `ou=People,o=UserNode1.Subdomain1.Domain.com`.

For any other directory, ask the directory administrator for the value to use.

- Step 6** In the Directory Search Filter field, enter an LDAP expression for restricting the entries retrieved. For example, you can limit the Personal Assistant directory lookups to a specific location, thus allowing users to use name dialing for employees only in the selected area. If your directory includes a “location” field, and “newyork” is a valid location in your directory, a directory search filter for limiting searches to New York would be “(location=newyork).”

The expression you enter depends on your corporate directory:

- For Cisco CallManager DC Directory—If the user search base is set to the root node or domain, append `!(description=ciscoPABUser)` to the Directory Search Filter. For example, `(&(objectclass=person)!(description=ciscoPABUser))`. Otherwise, Personal Assistant will be unable to distinguish between users in the corporate directory and users in the address book.
- For Active Directory—If your message store is Exchange 5.5, enter `(&(objectclass=user)(objectcategory=Person))`. Otherwise, enter `(&(objectclass=user)(objectcategory=Person)(legacyExchangeDN=*))`.
- For Netscape Directory—Enter `(objectClass=person)`.

Note that the instructions above are valid for the typical configuration. The expression you enter might need additional search-filter parameters, depending on how your directory is structured. The expression must be valid for the directory you are using. If you do not know what to enter, refer to the documentation supplied with the directory, or ask your directory administrator for information on valid LDAP expressions for your corporate directory.

- Step 7** Click **Test** to have Personal Assistant validate the search filter.
- Step 8** If you are using an LDIF file, check the **Use LDIF File** check box, and in the LDIF File Location field, enter the UNC path for the file that you created in the “[Using an LDIF File](#)” section on page 2-7. For example, enter `\\Paserver\ldif\paldifdata.ldif`.
- Step 9** Click **Test** to have Personal Assistant validate the LDIF file.
- Step 10** If the system uses Active Directory, and if the LDAP directory has a restriction on the number of results returned per query, check the **Limit Page Size** check box, and fill in the **Number of Results Per Page**. Otherwise, uncheck the check box.

Consult your LDAP administrator to determine the page size to use.

- Step 11** Click **Save** to save your changes.

If you are installing or upgrading Personal Assistant, continue to follow the applicable task list. Otherwise, changes to corporate directory settings take effect on the next refresh. If you need the changes to take effect immediately, go to the Speech Services Configuration page, and click **Refresh Now**.

Specifying the Cisco CallManager Internal Directory Configuration (Personal Assistant Version 1.4(3) or Later)

Personal Assistant uses the directory Cisco CallManager is using to maintain system configuration information such as corporate directory settings and some user information such as call routing rules and user recorded names. In a typical configuration, Cisco CallManager uses its internal directory, DC Directory. When Cisco CallManager is in a cluster, Personal Assistant maintains information on the publisher server. If Cisco CallManager is using its internal directory, you can specify the directory configuration to have Personal Assistant read information from an available subscriber server in the same cluster if the publisher is unavailable.

Note that because Personal Assistant can only read information from a subscriber server, it cannot update configuration information unless the publisher is in service.

To specify the Cisco CallManager internal directory configuration, you identify the subscriber servers in the Cisco CallManager cluster.

Do the following procedure only if you are using Personal Assistant version 1.4(3) or later and if Cisco CallManager is using its internal directory.

To Specify the Cisco CallManager Internal Directory Configuration

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- Step 1** In the Personal Assistant Administration, select **System > Cisco CallManager Directory**. The Cisco CallManager Internal Directory Configuration page opens.
- Step 2** In the Cisco CallManager Subscriber Server field, enter the host name or the IP address of the subscriber server, and click **Add**.
- Personal Assistant adds the server to the list of subscriber servers for the Cisco CallManager cluster.
- Step 3** Repeat [Step 2](#) for each subscriber server.
- Step 4** Click **Save** to save and activate your changes.
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Configuring Personal Assistant Servers

You must configure each Personal Assistant server to define its operating characteristics and to add it to the server cluster.

To Configure Personal Assistant Servers

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- Step 1** In the Personal Assistant Administration, select **Servers > Server Configuration**. The Server Configuration page opens.

This page has two columns:

- The left column lists the Personal Assistant servers you have already added to the Personal Assistant server cluster. Click a server name to view and change the server properties. The primary Personal Assistant server is indicated by a red arrow.

- The right column contains the settings for the selected server. When you initially open the page, this column is empty of settings, so that you can add a new Personal Assistant server. If you later want to add a new Personal Assistant server while viewing the properties of an existing server, click **New** before entering settings.

Step 2 Enter settings for a new server, or change the existing settings, as applicable. See the “[Server Configuration](#)” section on page A-16 for explanations of each setting. At a minimum, you must configure the following settings to enable a fully-functional server:

- **Server Name**—A unique name for the server. This is not the same as the DNS name or IP address of the server. Instead, it is a name used internally by Personal Assistant. Choose a naming convention that is meaningful to you.
- **Hostname or IP Address**—The DNS name or IP address of the Personal Assistant server.
- **Route Address Provider**—The telephony provider you created to supply JTAPI services for the route point. See the “[Configuring Telephony Providers](#)” section on page 4-7 for information on creating the provider. The provider you select must be in the same Cisco CallManager cluster in which the route points are defined.
- **Route Address**—The CTI route point for the Personal Assistant server, as defined in Cisco CallManager. This is the phone number users dial to contact Personal Assistant. See the “[CTI Route Points and Media Ports](#)” section on page 1-3 and the “[Setting Up Personal Assistant Server Load Balancing](#)” section on page 1-13 for detailed information on the CTI route address.
- **Media Port Provider**—The telephony provider you created to supply Skinny services for the media ports. See the “[Configuring Telephony Providers](#)” section on page 4-7 for information on creating the provider. The provider you select must be in the same Cisco CallManager cluster in which the Personal Assistant route point is defined.
- **Media Port Beginning Address**—The start of the range of ports defined in Cisco CallManager that will be used to terminate calls to Personal Assistant. When Personal Assistant answers a call, it is assigned to an available port in this range.
- **Number of Media Ports**—The number of ports you want to support on the server. This number determines how many simultaneous speech-recognition sessions the server can handle. The number you choose depends on the server platform you are using, and whether you are using failover. See the “[Creating Server Clusters](#)” section on page 1-10 for information about the maximum ports that are available for the various hardware platforms and installation configurations.
- **Interceptor Port Provider**—The telephony provider you created to supply JTAPI services for the route points used as Personal Assistant interceptor ports. See the “[Configuring Telephony Providers](#)” section on page 4-7 for information on creating the provider. The provider you select must be in the same Cisco CallManager cluster in which the route points are defined.
- **Interceptor Ports**—The phone extensions for which you want this Personal Assistant server to intercept incoming calls. Personal Assistant intercepts calls to these extensions so that it can apply the applicable call routing rules. This list is central to the functions of Personal Assistant; setting up Personal Assistant to intercept calls to these extensions requires careful planning and changes to the extension properties in Cisco CallManager.

The extensions you enter must be defined in Cisco CallManager. If you defined route points by using wildcards, such as 25XX, you can enter them here.

Read the following sections for detailed explanations and examples:

- [Creating Personal Assistant Interceptor Ports and Configuring Error Handling](#), page 3-4
- [Partitions and Calling Search Spaces](#), page 1-4
- [Defining Partitions and Call Search Spaces for Personal Assistant](#), page 1-18

- [Adding Personal Assistant Without Previously Defined Partitions, page 1-20](#)
- Failover Server Names—The ordered list of servers that should take over for the server if it becomes disabled. Using the Personal Assistant failover capability requires careful planning, and affects the number of telephony ports you can define for the servers. See the [“Creating Server Clusters” section on page 1-10](#) for an explanation of configuring Personal Assistant clusters with and without failover.

Step 3 Save your changes as applicable:

- If you are creating a new server, click **Insert**. Personal Assistant saves the server settings and adds the new server to the list in the left column.
- If you are updating an existing server, click **Save**. Personal Assistant saves and activates your changes.



Tip

Do not configure the debug or trace settings unless instructed to by Cisco Technical Support. Debug and trace settings can have an adverse effect on server performance, and they generate a large amount of data that only Cisco can interpret. These features exist so that Cisco can use them to help identify and fix any problems you encounter with the software. See the [“Collecting Trace and Debug Information” section on page 6-15](#) for more information.

You can remove a server by selecting it in the left column, and then clicking Delete when the server properties are displayed.

The Personal Assistant server restarts automatically when any changes, except those made to the trace and debug settings, are saved. To manually start or stop the servers, or to verify that a particular server is up and running, use the Control Center by selecting System > Control Center. See the [“Starting and Stopping the Servers and License Manager” section on page 6-14](#) for details.

Configuring Messaging

Personal Assistant can provide e-mail paging, calendar-based call routing services, and direct access to the voice mail system. Personal Assistant integrates with Microsoft Exchange to provide calendar-based call routing, and if you are using Cisco Unity, Personal Assistant can integrate with the Exchange server you are already using. Personal Assistant can also automatically send e-mail notification to users when their PINs have been changed. You must configure the messaging parameters to enable these services for your users. If you do not want to enable one or more of these services, leave the settings for the service blank.

Personal Assistant must have administrator access to Microsoft Exchange to obtain a user calendar information. This information is used when evaluating call routing rules that include calendar-based conditions.

You must have the voice mail server set up and configured on a system separate from Personal Assistant.

Personal Assistant must have administrator access to the voice mail system to obtain user mailbox account information and stored voice mail messages. These voice mail settings are also used to redirect calls to user voice mail without ringing the user phone, based on the user rules that include voice mail as a destination.

If you are using Cisco Unity, and you do not know the Cisco Unity mailbox name, do the following two procedures in the order listed. Otherwise, skip to the [“To Configure Messaging” procedure on page 4-13](#).

To Identify the Cisco Unity System Mailbox Name

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- Step 1** On the Cisco Unity server, on the Windows Start menu, click **Programs > Microsoft Exchange > System Manager**.
- Step 2** Expand **Servers**.
- Step 3** Expand **<Cisco Unity Partner Exchange Server Name>**.
- Step 4** Expand **First Storage Group**.
- Step 5** Expand **Mailbox Store**.
- Step 6** Click **Mailboxes**.
- Step 7** From the list of mailboxes in the right pane, identify the Cisco Unity mailbox.
- The name is typically either **Unity Messaging** or **Unity Messaging System <Server Name>**. If you cannot identify the mailbox, see your Cisco Unity administrator.
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To Configure Messaging

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- Step 1** In the Personal Assistant Administration, select **System > Messaging**. The Messaging Configuration page opens.
- Step 2** To enable calendar-based call routing rule services, do the following substeps:
- In the Calendar Server Name field, enter the Exchange server name. (You can use a DNS name or an IP address.)
 - In the Calendar Mailbox Name field, enter the first and last name of the Exchange administrator account. See the [“Messaging Configuration” section on page A-10](#) for detailed information on the account name you must enter.
- Step 3** To enable e-mail paging, do the following substeps:
- In the Paging SMTP Server Name field, enter the DNS name or IP address of your e-mail paging server.
 - In the Paging SMTP Server Port field, enter the SMTP port used to send messages to the SMTP server.
 - In the Paging SMTP Domain Name field, enter the domain in which the paging SMTP server belongs.
- Step 4** To allow users to access their voice mail through Personal Assistant, or to create call routing rules that send incoming calls directly to voice mail, identify the voice mail servers to Personal Assistant by doing the following substeps, as applicable:
- If you are using Cisco Unity, enter the mailbox name for the Cisco Unity system profile in the Mailbox Name field, and enter the number of ports allowed by your license in the Number of Cisco Unity Licenses field. Use the name that you identified in the [“To Identify the Cisco Unity System Mailbox Name” procedure on page 4-13](#). The number of ports determines the allowed number of simultaneous voice mail sessions. These fields are optional for other voice mail systems.
 - In the Redirection Delay field, enter the time in milliseconds to delay transferring the call to the desired voice mailbox after a call is transferred to the voice mail system. This delay ensures that a call connects to the voice mail system before Personal Assistant enters the DTMF sequence to redirect the call to the desired mailbox.

We recommend that you use 2000 milliseconds for a Cisco Unity system, and 4000 milliseconds for other systems, such as Octel.

- c. Add each voice mail server to the list of servers by entering the Voice Mail Server Name (for example, **unity1**), the Pilot Number (the phone number used to reach voice mail), and the internal and external DTMF Redirection Sequences required to direct a call to a specific voice mailbox. Click **Add Server** after entering the information.

The voice mail server name is required only for Cisco Unity voice mail systems. The name must be an unqualified DNS name, for example, `unity1` rather than `unity1.cisco.com`. Do not use IP addresses. See the [“Messaging Configuration” section on page A-10](#) for more information about these fields.

- Step 5 If you configure the system to use the Cisco CallManager PIN, and if you want Personal Assistant to automatically send e-mail notification to users when their PINs are changed, check the **Notify Users of PIN Change** check box, and enter your corporate e-mail address in the Administrator E-mail Address field. (Personal Assistant uses this e-mail address as the return address for the message.)

Note that Personal Assistant does not send e-mail notification if the system is configured to use the Cisco Unity subscriber phone password as the Personal Assistant PIN.

- Step 6 If you are using Cisco Unity, select a field from the Unique Attribute for Corporate Directory list and a field from the Unique Attribute for Message Store list whose entries are likely to match. For example, select **cn** for the corporate directory field and **sAMAccountName** for the message store field. The fields are used to integrate Cisco Unity with Personal Assistant so that users who are also Cisco Unity subscribers can browse voice mail.

To validate your choice of attributes, click **Test Attributes**, enter a value on which to search, and click **Test Value**.

- Step 7 If you are using Cisco Unity, and you want Personal Assistant to use the name the user already recorded in the Cisco Unity voice mail system as the Personal Assistant user spoken name, click **Load Recorded Names**. Personal Assistant plays this name to callers when they try to call the user. Note that Personal Assistant loads only subscriber names recorded in CCITT Mu-Law format (G.711 Mu-Law).

- Step 8 Click **Save** to save and activate your changes.

Configuring Enhanced Text to Speech

If you installed the enhanced Text to Speech server, you must configure Personal Assistant to use it. Otherwise, Personal Assistant uses the default Text to Speech server.

To Configure Enhanced Text To Speech

- Step 1 In the Personal Assistant Administration, select **System > Enhanced TTS**. The Enhanced TTS Configuration page opens.
- Step 2 In the TTS Server Name field, enter the name or IP address of the enhanced Text to Speech server.
- Step 3 In the TTS Port Number field, enter the TTS Port Number you specified when you installed the enhanced Text to Speech server.
- Step 4 In the TTS License Key field, enter the license key for the enhanced Text to Speech feature.
- Step 5 Click **Save** to save and activate your changes.

The Number of Licenses shows the number of ports available for your TTS license key.

Step 6 Click **Test** to validate the configuration.

Note that while the Personal Assistant server and the TTS server are not required to be in the same domain, the test cannot display configuration information if they are in different domains.

Creating a Simple Automated Attendant

You can use Personal Assistant as an automated attendant to provide callers who are not Personal Assistant users with the ability to dial users by name. This allows callers to contact users without knowing their extensions, and without involving a live operator.

When someone calls the automated attendant number, Personal Assistant plays a welcome prompt you supply, and then presents the caller with the dial-by-name speech interface, including spoken Help. This is the same interface your regular Personal Assistant users can use, but it does not include any features other than dial-by-name.

If a caller enters a number on the keypad, Personal Assistant verifies that a user is associated with the number in the corporate directory before transferring the caller. Callers to the automated attendant can reach only those phone numbers that are associated with a person in the corporate directory.

If you support multiple locales, you can set up the automated attendant so that callers can select the language they are most comfortable with. Personal Assistant initially plays the prompt associated with your default locale. Your prompt should direct callers to press 8 if they want to change languages. You might want to include multiple languages in your default locale prompt to assist callers who do not know your default language. For example, if your default locale is American English, but you are supporting Canadian French callers, your English prompt might include a short statement in French instructing the French speaker to press 8 and select French.

To Create an Automated Attendant

Step 1 Create a route point for the automated attendant in Cisco CallManager. This is the phone number people will use to connect to the automated attendant.

Step 2 Record a welcome prompt for the automated attendant. The file must be a WAV file in CCITT Mu-Law format (G.711 Mu-Law). You can use any recording software that will save a file in this format. Personal Assistant does not include a recorder.

Step 3 In the Personal Assistant Administration, select **System > AA Prompt**.

Step 4 Enter the path of the prompt file you created in [Step 2](#), or browse to the location to which you saved the file, and click **Update**.

Note that if you support multiple locales, you can have separate prompts for each locale. For each locale, enter the applicable prompt file path, and click **Update**.

To verify that the correct prompt file is loaded, click the locale. To restore the default prompt, click **Restore**. (The Restore button is not displayed when the default prompt is used.)

Step 5 Select **Servers > Server Configuration**, and from the left-hand column list of servers, select the Personal Assistant server that you want to manage the automated attendant. (Alternatively, configure a new Personal Assistant server for the automated attendant to use.)

Step 6 In the AA Route Address field, enter the route point that you created in [Step 1](#).

Step 7 Click **Save**. The automated attendant is now operational.

Creating Dialing Rules

You can create global dialing rules to automatically modify outgoing phone numbers. These changes only affect the user when he or she uses Personal Assistant; they do not apply to the telephony system outside of Personal Assistant. For example, if a user simply picks up the phone and dials a number, these rules will not be applied. The user must be connected to Personal Assistant and dialing the number through Personal Assistant for the rules to be applied.

Global dialing rules are applied before any dialing rules that users create for Personal Assistant.

Rules can distinguish between phone numbers based on the initial string of digits in the number, on the length of the number, or both. Rules can remove numbers from the front of the dialed number, add numbers to the front, or both.

For example, you can create a rule that if the number of digits of the phone number is 7, then prefix the number with 9. This rule then automatically enters a 9 when dialing an outside number.

To Configure Dialing Rules

Step 1 In the Personal Assistant Administration, select **System > Dial Rules**. The Dial Rules Configuration page opens.

The page is divided into two sections:

- **Add Rule**—This section contains fields and the Add Rule button.
- **List of Dial Rules**—This is a list of rules, in order of priority. Rules are applied from top to bottom. If a phone number satisfies the conditions of a rule, the rule is applied and no subsequent rules are considered.

Step 2 Enter information in the fields in the Add Rule section to create the desired dialing rule. Each field is optional, but you must at least fill in either the Number of Prefix Digits to Remove field or the New Prefix field in order for the rule to be applied.

- **Phone Number Prefix**—Enter one or more digits at the beginning of the number the user dials. The distinguishing string of digits can be as many digits as the number itself.
- **Number of Digits**—Enter the total number of digits in the phone number the user dials. Do not count hyphens or spaces.
- **Number of Prefix Digits to Remove**—Enter the number of digits that Personal Assistant will delete from the front of the dialed number. For example, if you enter 4, and the dialed number is 1-500-555-6262, Personal Assistant removes 1500, and leaves 555-6262.
- **New Prefix**—Enter the string of digits that Personal Assistant will add to the front of the dialed number, after removing the specified number of digits. For example, you might need to add a prefix of 9 in order to dial an external number.
- **Priority (Personal Assistant version 1.4(5) and later only)**—Enter the position for the rule in the list of rules. If you do not specify a priority, the rule will be placed at the bottom of the list.

Step 3 Click **Add Rule**. Personal Assistant adds the rule to the list of rules.

**Tip**

To change a rule, find it in the list of rules, modify the properties as desired, and click Update on the line with the rule.

To change the priority of a rule, use the up and down arrows until the rule is correctly positioned. For Personal Assistant version 1.4(5) and later, you can also enter the applicable value in the New Priority field, and click Update on the line with the rule.

To delete a rule, find it in the list of rules, and click the Delete icon on the same line as the rule.

Configuring Directory Lookup Rules

You can create directory lookup rules to automatically modify incoming internal phone numbers so that the user information associated with the number can be found in the corporate directory.

For example, if you use 5-digit numbers to call within your phone network, but the corporate directory uses 7- or 10-digit number versions of the 5-digit numbers, Personal Assistant will be unable to match a 5-digit number to the caller. By creating directory lookup rules, you can convert the 5-digit number to the type of number used in the directory, so that Personal Assistant can find the caller associated with the number.

Directory lookup rules do not modify the number that is dialed. These rules only convert the number to something that can be found in the corporate directory for information lookup purposes.

Rules can distinguish between phone numbers based on the initial string of digits, on the length of the number, or both. They can remove numbers from the front of the dialed number, add numbers to the front, or both.

To Configure Directory Lookup Rules

-
- Step 1** In the Personal Assistant Administration, select **System > Directory Lookup Rules**. The Directory Lookup Rules page opens.
- The page is divided into two sections:
- **Add Rule**—This section contains a fill-in-the-blank sentence and the Add Rule button.
 - **List of Directory Lookup Rules**—This is a list of your rules, in order of priority. Rules are applied from top to bottom. If a number satisfies the conditions of a rule, the rule is applied and no subsequent rules are considered.
- Step 2** Enter information in the fields in the Add Rule section to create the desired directory lookup rule. Each field is optional, but you must at least fill in either the Number of Prefix Digits to Remove field or the New Prefix field in order for the rule to be applied.
- **Phone Number Prefix**—Enter one or more digits at the beginning of the number the user dials. The distinguishing string of digits can be as many digits as the number itself.
 - **Total Number of Digits**—Enter the total number of digits in the phone number the user dials. Do not count hyphens or spaces.
 - **Number of Prefix Digits to Remove**—Enter the number of digits that Personal Assistant will delete from the front of the dialed number. For example, if you enter 4, and the dialed number is 1-500-555-6262, Personal Assistant removes 1500, and leaves 555-6262.

- **New Prefix**—Enter the string of digits that Personal Assistant will add to the front of the dialed number, after removing the specified number of digits. For example, you can add an area code and initial digits to a 5-digit extension, turning 56565 into 5555556565. Personal Assistant uses the resulting number to look up the calling party in the corporate directory.
- **Priority (Personal Assistant version 1.4(5) and later only)**—Enter the position for the rule in the list of rules. If you do not specify a priority, the rule will be placed at the bottom of the list.

Step 3 Click **Add Rule**. Personal Assistant adds the rule to the list of rules.



Tip

To change a rule, find it in the list of rules, modify the properties as desired, and click Update on the line with the rule.

To change the priority of a rule, use the up and down arrows until the rule is correctly positioned. For Personal Assistant version 1.4(5) and later, you can also enter the applicable value in the New Priority field, and click Update on the line with the rule.

To delete a rule, find it in the list of rules, and click the Delete icon on the same line as the rule.

Configuring Directory Hierarchies

A directory hierarchy is a set of groupings of directory entries. These groupings can make directory searches more accurate and manageable for callers who are trying to dial a party by name rather than by phone number. For example, a caller can narrow a search by first stating the location or department in which to search. Locations and departments are the types of directory hierarchy groups you can define.

Create directory hierarchies if callers are having problems with speech recognition due to the large number of similarly-named people in the corporate directory.

Changes to the directory hierarchy configuration take effect the next time the system refreshes.

To Configure Directory Hierarchies

- Step 1** In the Personal Assistant Administration, select **System > Directory Hierarchy**. The Directory Hierarchy Configuration page opens.
- This page includes a list of the nodes in the hierarchy that already exist at the bottom of the page.
- To see the nodes for each type of hierarchy, select the type of hierarchy (Location or Department) in the Hierarchy Type field.
- Step 2** In the Hierarchy Type field, select the type of node you want to create. The type you select will determine how callers can select the group. For example, if you create a location, callers can select it by saying “Location” while talking to Personal Assistant on the phone.
- Step 3** In the Name field, enter a meaningful name for the group.
- Step 4** In the Primary Spoken Name field, enter the primary name that callers will use to select the group. This can be the same name used in the Name field.
- Step 5** In the Alternate Spoken Name field, enter any aliases for the primary spoken name, clicking **Add** after entering each alias. Adding aliases allows callers to select the group by different names. For example, if the primary name is NewYorkCity, likely aliases might be NYC, NewYork, BigApple, and so forth.

- Step 6** In the LDAP Search Filter field, enter the LDAP search filter that defines the group. You must know the correct LDAP expression used by your corporate directory, and the specific names of the fields in your directory, to create a valid filter. If you are using an LDIF file, Personal Assistant uses this filter, along with information from the file, to create the hierarchies.
- To see if the expression is valid and returns the entries that you expect, click **Test Filter**.
- Step 7** Click **Save**. Personal Assistant adds the node to the list of nodes.

**Tip**

To change a node, click it in the list of nodes. Personal Assistant opens the Update Hierarchy Node page, where you can change certain node characteristics. You cannot change the hierarchy type. To change the hierarchy type, you must create a new node of the desired type.

The list of nodes includes a count of the number of entries in the corporate directory that match the node filter. This number is determined when Personal Assistant refreshes directory information.

Setting Up Systemwide Rules

You can set up rules to apply to all calls that come through the Personal Assistant system. For example, you might want to send all calls to user voice mailboxes after regular work hours.

To set up systemwide rules, you create and activate systemwide rule sets, and turn on systemwide rule processing. Turning on systemwide rule processing involves setting the conditions under which Personal Assistant applies active rules to incoming calls.

For example, you can create and activate a systemwide rule set with a single rule to direct calls to voice mail. You set the systemwide rule processing condition to “Apply System Rules When No User Rule is Applicable.” A user activates a rule set with the single rule, for example to forward calls from the extension 1234 to a mobile phone number. When a call comes in for that user from extension 1234, Personal Assistant determines that the user rule applies, and applies it. When a call comes in for that user from any other extension, Personal Assistant determines that the user rule does not apply and uses the systemwide rule to forward the call to the user voice mailbox.

Creating and Activating Systemwide Rules

To create and activate systemwide rules, you set up destinations and destination groups, callers and caller groups, a personal address book, and rules and rule sets, in much the same way a user would.

However, when creating systemwide rules, in addition to regular destinations, you can select from one of five virtual destinations—User Work Phone, User Home Phone, User Mobile Phone, User Pager, User Voice Mail—that map to actual user destination values when a rule is applied.

You can also use the call-forwarding rule tester to see how Personal Assistant would forward an incoming call based on your systemwide rules. Note that the call-forwarding rule tester for systemwide rules always assumes that the option Always Apply System Rules is selected.

For example, you can create the rule “Direct the call to destination User Voice Mail and do not screen the call.” When Personal Assistant intercepts a call, it searches the directory for the user voice mail number, and routes the call there.

To Create and Activate Systemwide Rules

Step 1 In the Personal Assistant Administration, select **Systemwide Rules > Systemwide Rules**. The Systemwide Rule Sets page opens.

Step 2 Use the systemwide rule sets pages to create and activate systemwide rule sets.

Refer to the *Cisco Personal Assistant User Guide* for instructions on how to set up destinations and destination groups, callers and caller groups, a personal address book, and rules and rule sets.



Note To return to the main configuration page of the Personal Assistant Administration interface from the Systemwide Rule Sets page, click **System Configuration > Return to System Configuration**.

Turning on Systemwide Rule Processing

Turning on systemwide rule processing involves setting the conditions under which Personal Assistant applies active rules to incoming calls.

To Turn on Systemwide Rule Processing

Step 1 In the Personal Assistant Administration, select **Systemwide Rules > Systemwide Rule Options**. The System Rule Options page opens.

Step 2 Select one of the following options:

- **Never Apply System Rules**—Use only user rules and turn off systemwide rule processing.
- **Always Apply System Rules (Ignore User Rules)**—Use only systemwide rules and turn off user rule processing.
- **Apply System Rules When No User Rule is Applicable**—Process calls by using the active user rules first. If no user rule applies, use the systemwide rules.
- **Apply User Rules When No System Rule is Applicable**—Process calls by using the active systemwide rules first. If no systemwide rule applies, use the user rules.

Use caution when setting the Always Apply System Rules and Apply User Rules When No System Rule Is Applicable options. The systemwide rules will take precedence over user rules.

Step 3 Click **Save**.

Integrating Personal Assistant with a Cisco Unity Voice Messaging System

When Personal Assistant is integrated with a Cisco Unity voice messaging system, Personal Assistant users can use speech or touch-tone key pad commands over the phone to navigate through the Cisco Unity voice mail system.

Do the following six procedures, in the order given, to configure and test the integration.

To Add the Personal Assistant Server to the Domain of the Cisco Unity Server

- Step 1** On the Windows Start menu, click **Settings > Control Panel > System**.
 - Step 2** Click the **Network Identification** tab.
 - Step 3** Click **Properties**.
 - Step 4** In the Identification Changes dialog box, click **Domain**, and enter the name of the domain to which the Cisco Unity server belongs. (For example, “Unified.cisco.com.”)
 - Step 5** Click **OK**.
 - Step 6** In the Domain Username and Password dialog box, enter the name and password of an account that has permission to add computers to the domain.
 - Step 7** Click **OK** three times.
 - Step 8** Click **Yes** to restart the server.
-

You must configure two Personal Assistant services— PAServer and PAWebAdmin—to log on as an account with domain administrator privileges for the Cisco Unity domain.

To Configure Two Personal Assistant Services to Log on with Cisco Unity Domain Administrator Privileges

- Step 1** On the Windows Start menu, click **Programs > Administrative Tools > Services**.
 - Step 2** In the right pane, double-click **PAServer**.
 - Step 3** Click the **Log On** tab.
 - Step 4** Click **This Account**.
 - Step 5** Click **Browse**.
 - Step 6** In the Select User dialog box, in the Look In list, click the name of the domain to which the Cisco Unity server belongs.
 - Step 7** Double-click the name of an account with Cisco Unity domain administrator privileges.
 - Step 8** Enter and confirm the password.
 - Step 9** Click **Apply**.
 - Step 10** Click the **General** tab.
 - Step 11** Click **Stop**.
 - Step 12** Click **Start**.
 - Step 13** Click **OK**.
 - Step 14** Repeat [Step 2](#) through [Step 13](#) with the **PAWebAdmin** service.
 - Step 15** When you are done setting the accounts, close the Services window.
-

If the Cisco Unity message store is Exchange 5.5, skip to the [“To Add the Outlook Path to the System Path Variable”](#) procedure on page 4-22.

If the Cisco Unity message store is Exchange 2003 or Exchange 2000, do the following procedure to enable the Exchange administrator to access all of the Exchange user mailboxes. Otherwise, Personal Assistant will not be able to access the Exchange user mailboxes.

To Grant Send-As and Receive-As Permissions to the Account That the Personal Assistant Services Log On As

-
- Step 1 On the Cisco Unity Server, click **Start > Programs > Microsoft Exchange > System Manager**.
 - Step 2 Expand **Servers**.
 - Step 3 Right-click **<Cisco Unity Server Name>**, and click **Properties**.
 - Step 4 Click the **Security** tab.
 - Step 5 Click **<Administrator User Name>** in the list.
 - Step 6 If the **Allow Inheritable Permissions from Parent** check box is not in the Permissions list (the administrator user does not have inherited permissions), skip to [Step 8](#). Otherwise, in the Permissions list, uncheck the **Allow Inheritable Permissions from Parent** check box. The Security window opens.
 - Step 7 In the Security window, click **Copy**.
 - Step 8 In the Permissions list, check the **Receive As** and **Send As** check boxes.
 - Step 9 Click **Advanced**.
 - Step 10 At the top of the Access Control window, click **Deny Permissions**, and click **Remove**.
 - Step 11 Repeat [Step 10](#) for the other three deny statements.
 - Step 12 Click **OK** twice.
-

If you are using Personal Assistant version 1.4(3) or later, skip to the [“To Ensure That the Personal Assistant Server Can Connect to the Cisco Unity Server by Using the DNS Name” procedure on page 4-23](#).

If you are using Personal Assistant version 1.4(2) or earlier, do the following procedure. Otherwise, Personal Assistant will not be able to use the Mail control panel.

To Add the Outlook Path to the System Path Variable

-
- Step 1 On the Personal Assistant server, log on to Windows by using an account that is a member of the Local Administrators group.
 - Step 2 Right-click **My Computer**, and click **Properties**.
 - Step 3 Click the **Advanced** tab.
 - Step 4 Click **Environment Variables**.
 - Step 5 Under System Variables, click **Path**.
 - Step 6 Click **Edit**.
 - Step 7 Append **;%PAROOT%\bin\outlook** to the end of the entry in the Variable Value field.
 - Step 8 Click **OK** three times.
-

The Personal Assistant server must be able to connect to the Cisco Unity server by using the DNS name <Cisco Unity server name>.<Cisco Unity domain name>.cisco.com. To enable the Personal Assistant server to resolve the Cisco Unity server name, you might need to add the name and IP address of the Cisco Unity server to the Personal Assistant server hosts file.

To Ensure That the Personal Assistant Server Can Connect to the Cisco Unity Server by Using the DNS Name

- Step 1** On the Personal Assistant server, open a command window, enter **ping <Cisco Unity Server Name>.<Cisco Unity Domain Name>.cisco.com**, and press **Enter**.
- Step 2** If the connection is successful, skip to the following “[To Test the Integration with Cisco Unity](#)” procedure. Otherwise, continue with [Step 3](#).
- Step 3** Browse to the directory **C:\Winnt\System32\Drivers\Etc**, and open the **hosts** file in Notepad.
- Step 4** Add an entry in the following format:
- <Cisco Unity Server IP Address> <Cisco Unity Server Name>.<Cisco Unity Domain Name>.cisco.com.**
- For example: 172.16.10.1 mlewando.unified.cisco.com
- Note that there is a space between the IP address and the DNS name.
- Step 5** Save and close the file.
- Step 6** Open a command window, enter **ping <Cisco Unity Server Name>.<Cisco Unity Domain Name>.cisco.com**, and press **Enter** to verify that the Cisco Unity server can be accessed by using the name you entered in [Step 4](#).
-

To Test the Integration with Cisco Unity

- Step 1** Call the Personal Assistant number from any user extension.
- Step 2** Say “voice mail.”
- Step 3** When you access Cisco Unity voice mail for the first time, a Personal Assistant profile in Exchange is automatically created and you are transferred to the Cisco Unity number. If your call is transferred to Cisco Unity, continue to follow the tasks in the “[Personal Assistant Configuration Task List](#)” section on [page 4-1](#). If your call is not transferred to Cisco Unity, continue with [Step 4](#).
- Step 4** If your call is not transferred to Cisco Unity, the Personal Assistant profile in Exchange may not have been created correctly. To verify whether the profile was created and to manually create it if necessary, see the “[Users Cannot Log On to Cisco Unity Voice Mail](#)” section on [page 6-7](#).
- Step 5** Repeat [Step 1](#) through [Step 3](#).
-

Integrating Personal Assistant with an Octel Voice Messaging System

When Personal Assistant is integrated with Octel voice messaging systems, Personal Assistant allows users to forward incoming calls to their Octel mailboxes by using rules. Personal Assistant distinguishes which calls Octel would treat as internal calls (calls from callers who have an Octel mailbox on the same

Octel system as the people who are being called), and which calls Octel would treat as external calls (calls from callers who do not have Octel mailboxes). Based on this determination, Personal Assistant sends the applicable DTMF redirection sequence to the Octel server when forwarding the call.

By default, Personal Assistant uses the following heuristics to determine if an incoming call is internal or external to the Octel system.

Personal Assistant identifies both the user who made the call and the called user, and then looks up their mailbox and pilot# information in Personal Assistant settings.

A call is considered internal to Octel only if all of the following conditions are true:

- The caller ID is known.
- The caller and called numbers map to Octel mailboxes on the same Octel server.
- The caller ID length does not exceed 7 digits.

Instead of having Personal Assistant use heuristics, you can explicitly define which extensions are internal to Octel by using the MailboxInfo.properties file. The MailboxInfo.properties file is in the Program Files\Cisco Systems\Personal Assistant\Etc directory.

A Sample MailboxInfo.properties File

```
# MailboxInfo.properties
# Contains information about valid Octel mailbox numbers.
# Comment lines begin with '#'.
#
# Patterns may include digits 0-9, 'X' to match any digit, or a range, as in "[2-4]".
# Mailbox mask may include digits and 'X' only and will
# be used along with calling number to find the mailbox number.
#
# Format
# include : number-pattern to include : voicemail-pilot # : mailbox-mask
# exclude : number pattern to exclude
#
include : 251XX : 28000 : XXXXX
exclude : 2512[3-8]
exclude : 25130
```

The sample MailboxInfo.properties file shows that all 5-digit phone extensions starting with 251 (matching 251XX) have a matching Octel mailbox (mask XXXXX) on an Octel server with pilot number 28000, except for extensions 25123 to 25128 and extension 25130.

Integrating Personal Assistant with Exchange 5.5

If you are using Exchange 5.5, add the internet mail service connector on the Exchange 5.5 server. Otherwise, Personal Assistant will be unable to send e-mail for refresh notification, PIN changes, and paging.

To Add the Internet Mail Service Connector

-
- Step 1 On the Exchange server, on the Windows Start menu, click **Programs > Microsoft Exchange > Microsoft Exchange Administrator**.
 - Step 2 In the left pane, expand <**Organization**>.

- Step 3 Expand <Site>.
 - Step 4 Expand **Configurations**.
 - Step 5 Click **Connections**.
 - Step 6 Click **File > New Other > Internet Mail Service**.
 - Step 7 In the Internet Mail Wizard window, click **Next**.
 - Step 8 Click **Next**.
 - Step 9 In the list, click the name of the Exchange server.
 - Step 10 Click **Next**.
 - Step 11 Click **No**, and click **Next**.
 - Step 12 Click **Use DNS to Send Mail**, and click **Next**.
 - Step 13 Click **All Internet Mail Addresses**, and click **Next**.
 - Step 14 Enter @<**Fully qualified domain name of the site**>, and click **Next**.
 - Step 15 Click **Create/Use the Mailbox Called Administrator**, and click **Next**.
 - Step 16 Enter the password for the service account, and click **Next**.
 - Step 17 Click **Finish**.
 - Step 18 Click **OK** to close the status message boxes, if applicable.
 - Step 19 Close Exchange Administrator.
-

