



Cisco Voice Provisioning Tool Application Accessibility Notes (for JAWS Accessibility)

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VPT Navigation Overview

To navigate the Cisco Voice Provisioning Tool (VPT), you select options from a list. Depending on the option selected, a specific form or report is activated. When a form is activated, you fill out the appropriate information and submit it; depending on the responses, additional form areas may appear after the information is submitted.

Navigation in VPT is accomplished via two frames:

- The Tree frame contains the primary navigation mechanism, presented as a multi-level or “tree” control. The Tree frame appears on the left side of the screen.

Within tree controls, there are multiple levels with different names:

- Nodes are the top levels and are always displayed. When you first open VPT and read the Tree frame, you will hear a list of two nodes.
 - A list of subnodes is produced when a node is activated (by pressing Enter).
 - Sub-subnodes are produced by pressing Enter from applicable subnodes (note that not all subnodes have sub-subnodes).
 - A leaf is a level that does not have any subnodes. Activating a leaf will change the page that is displayed in the Content frame.
- The Content frame contains forms or reports as specified by the current leaf selection. Each page of content presented in the Content frame may have additional links or buttons with which to carry out context-sensitive navigation or actions. The Content frame appears on the right side of the screen.

There are two additional frames in VPT, which contain the logo and the page header.



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Frame Navigation

JAWS uses the M key to allow you to navigate among frames in a predictable order. Within the VPT application, the M key can be used to navigate among frames in the following order:

1. Logo frame
2. Tree frame
3. Header frame
4. Content frame

From the Tree frame, pressing M twice will bring focus directly to the Content frame. From the Content frame, pressing M twice will bring focus back to the Tree frame.

In JAWS, pressing Insert-F9 will bring up a separate window listing all of the frames on the page, and pressing Insert-F1 will provide a page summary.

Tree Frame Navigation

When nodes in the Tree frame are expanded and collapsed, JAWS does not provide feedback regarding the current expanded or collapsed state. You need to memorize the VPT tree hierarchy.

In VPT version 1.0(1), the tree control has the following static structure:

Node 1: Voice Provisioning

Subnode 1.1: Users

- Leaf 1.1.1: Add New User
- Leaf 1.1.2: Manage Users

Subnode 1.2: Templates

- Sub-subnode 1.2.1: User Templates
 - Leaf 1.2.1.1: Add New User Template
 - Leaf 1.2.1.2: Manage User Templates
- Sub-subnode 1.2.2: Phone Templates
 - Leaf 1.2.2.1: Add New Phone Template
 - Leaf 1.2.2.2: Manage Phone Templates

Subnode 1.3: Bulk Provisioning

- Leaf 1.3.1: Bulk Import
- Leaf 1.3.2: Bulk Export
- Leaf 1.3.3: Manage Bulk Tasks

Subnode 1.4: Phones

- Leaf 1.4.1: Add New Phone/Profile
- Leaf 1.4.2: Manage Phones/Profiles

Node 2: VPT Administration

Subnode 2.1: Administrators

Leaf 2.1.1: Add New Administrator

Leaf 2.1.2: Manage Administrators

Subnode 2.2: Roles

Leaf 2.2.1: Add New Role

Leaf 2.2.2: Manage Roles

Subnode 2.3: Product Systems

Leaf 2.3.1: Add New Product System

Leaf 2.3.2: Manage Product Systems

Subnode 2.4: Plug-Ins

Leaf 2.4.1: Install New Plug-In

Leaf 2.4.2: Manage Plug-Ins

Leaf 2.5: View Audit Log

Leaf 2.6: Configuration

When navigating the tree control, an easy way to recognize a leaf is to note that it will be prefaced with the word “Link” or the phrase “Visited link,” while nodes and subnodes will be prefaced with “This page link.” This is because JAWS distinguishes between links that keep you on the same page and links that go to a different page.

The tree maintains a fairly consistent structure, providing two leaf nodes for each of several subnodes, representing object types that can be managed with VPT. The two leaf nodes allow records for the objects in question (for example, users, phones, templates, or roles) to be added and managed. Almost all of the leaf nodes are two levels deep in the tree. The exceptions are User Templates and Phone Templates, which are three levels deep, and View Audit Log and Configuration, which are one level deep.

A tree node can be expanded and collapsed by pressing the Enter key. If the Enter key is pressed when a collapsed tree node has the focus, that node will be expanded and the focus will remain on that node. If the Enter key is pressed when an expanded node has the focus, that node is collapsed—any subnodes or leaf nodes are hidden—and the focus remains on the higher-level node. Because JAWS keeps the focus on a node when you select it, you can determine whether a node is open or closed by pressing Enter and seeing if new information appears or disappears.

Selecting a leaf node (by using the Enter key) will cause the corresponding page to be loaded into the Content frame. The leaf node will retain the focus, and the screen reader will start reading the items below the selected leaf. To move the focus to the Content frame when a leaf has been selected, press Control to stop the screen reader, and then press M twice. The screen reader will then read the title of the Content frame and put the focus within the Content frame. You can then invoke an action (for example, press Tab or Shift-Tab) for the screen reader to begin reading within the Content frame.

To quickly move focus to the Tree frame, press Control-Home to get to the Logo frame and then press M once. This keypress sequence is particularly useful for getting to the top level Voice Provisioning node after you have been exploring the tree for some time. Press the Down Arrow once to bring focus to the Voice Provisioning node.

Each time that you log in to VPT, the tree control starts out in a fully collapsed state. When a subnode is expanded, it will expand only one level. However, as tree nodes and their subnodes are expanded, the expansion state is retained for the remainder of the login session. What this means is that when an expanded node is collapsed, the next time it is expanded, the expansion state of any subnodes is retained.

Thus, when a fully expanded tree is collapsed from the root node, and then expanded again from the root node, the tree will appear fully expanded again. If the tree was only partially expanded before collapsing from the root node, then expanding it again will show the tree in the same partially expanded state.

When a login session expires, the state of the tree control is reset to fully collapsed.

Note that if you navigate only the tree control during a session, your navigation actions do not cause the session expiration timer to be reset, which means that the session may time out unexpectedly. Actions such as following a link, pressing a button, or selecting a tree node must be performed in order to reset the session expiration timer. You can avoid untimely session expirations by adjusting the session timeout length in VPT, but doing so must be weighed against the security concerns of allowing sessions to remain open when they are not active.

Menu Bar Navigation

The VPT menu bar, which is a visible part of the VPT user interface, is currently not accessible via the keyboard. However, almost all items in the menu bar are available from buttons or other options within the Content frame. Normal use of Tab and Arrow keys to navigate through the Content frame provides access to all page sections and all buttons.

The menu bar also contains menu items that link to the online Help, which is not accessible any other way from within the VPT user interface. To provide access to the online Help, set up browser shortcuts or bookmarks that link directly to the online Help resources.

Content Frame Navigation

See the following sub-sections:

- [Toggle Sections, page 4](#)
- [Success and Failure Messages, page 5](#)
- [Dynamic Forms and Page Reloading, page 6](#)

Toggle Sections

The User and Phone pages in VPT display content in multiple sections called toggle sections. Toggle sections can be expanded to show their contents or collapsed to hide their contents, in the same way that the Tree node hierarchy works. When a toggle section is collapsed, only its title is displayed.

Pressing Enter when the focus is on the toggle section title will alternately expand and collapse the section, and focus will remain on the section title. JAWS will preface the toggle section titles by saying “This page link” rather than just saying “Link.”

User Pages

For user pages (Add New User, Manage Users, Add New User Template, and Manage User Templates), there are a maximum of three toggle sections, depending on what types of systems are currently selected:

- Basic User Information
- CallManager User Information
- Unity User Information

If there are no selections made from the Template Name, Phone System, or Message System select controls, the CallManager User Information and/or the Unity User Information sections may not appear.

Phone Pages

The phone pages (Add New Phones, Manage Phones, Add New Phone Template, and Manage Phone Templates) also use toggle sections, but they are nested into two levels. A typical phone page will have two sections for phone settings (basic and advanced device settings), and then will have a section for each phone line. Within each line section is a nested section for advanced line settings:

- Basic Phone Configuration (level 0)
 - Advanced Phone Configuration (level 0)
 - Line1 Ex:555/Partition XYZ (level 0)
 - Line 1 Advanced Line Configuration Ex:555/Partition XYZ (level 1)
 - Line2 Ex:123/Partition XYZ (level 0)
 - Line 2 Advanced Line Configuration Ex:123/Partition XYZ (level 1)

...

When the page is first displayed, all of the line sections are collapsed, and the advanced device settings section is also collapsed. Typically, only the basic settings will be needed, so the basic settings section is the only one that is expanded by default.

Note that in the Add New Phone and Add New Phone Template pages, the page is first presented with no Line sections. The Line sections are not displayed until a phone button template has been chosen one or more times, thus determining how many line sections are needed. See the [“Dynamic Forms and Page Reloading” section on page 9](#) for more information.

Success and Failure Messages

When a form is submitted or an action is performed that causes a page refresh (for example, clicking the save button or another button), and when no additional collapsed or expanded sections are brought up, a success or failure message will appear at the top. The screen reader may not notice that the page has reloaded, and consequently it will not read the success or failure message.

Each time that you perform an action like this, you should press M until you reach the top of the Content frame, and then use the Down Arrow key to listen for an “Operation...failed” or a “Successful” message.

When a failure message appears, it will either result from a form validation error (where a required field was left empty), or an operation error. An operation error will present a link that opens a pop-up window containing complete error information. A form validation error will indicate that there were errors on the current page, but it will not provide a link to additional information. The validation errors are placed adjacent to each specific form field or value that was in error. The entire form must be navigated in order to determine which fields were in error.

Note that if a section is collapsed when an action is taken, and a failure message appears, it cannot provide information on validation errors. The section must be expanded before JAWS can read the validation errors.

Dynamic Forms and Page Reloading

Several of the pages in the VPT application are dynamic in nature, meaning that the content that appears on the page depends on certain selections made while filling in forms. When these selections are made and the page is reloaded, you automatically exit forms mode, and JAWS states that the page is reloading, both of which are indications that the page has changed. However, the feedback is not necessarily definitive about the page status.

You should anticipate dynamic page re-loads and form changes, and should also be aware that when a page is processing, JAWS will not immediately indicate the processing status.

Typically, page changes are triggered by certain select controls (also known as combo boxes). To use select controls, press Enter to enter forms mode.

The page will reload if the select control selection is changed by using the Up Arrow or Down Arrow key. A page reload is triggered each time that you press either the Up Arrow or Down Arrow, and after the page reloads, the focus remains on the select control. Note, however, that occasionally the focus will be lost after the page reloads. When this happens, pressing the Tab key once will usually bring the focus back to the select control (exceptions are noted in the discussion of specific pages below).

To open the select control without causing the page to refresh, press Alt-Down Arrow. The selection list will open. Use the Up Arrow and Down Arrow keys to browse the list, then press Enter to select an item and trigger the page reload.

In general, when you are completing an add operation (for example, add user or add phone), the Content frame will refresh with the corresponding Edit page for the user, phone, or other item added. The Edit page is considered a part of a manage task, so the focus will also change in the tree control, which will switch from the Add tree node to the corresponding Manage tree node.

When information is entered and the page refreshes, the focus may or may not stay on the last field encountered. Additional fields may or may not appear after the refresh. JAWS will not automatically inform you whether additional fields have appeared.

In the following sections, we have noted all instances where the page will reload and have indicated where the focus will move. (This focus information is primarily for the benefit of individuals who provide training on the use of VPT with JAWS.)

- [Add New User and Manage Users Pages, page 6](#)
- [User Template Page, page 7](#)
- [Add New Phone/Profile and Manage Phone/Profile Pages, page 7](#)
- [Phone Template Page, page 8](#)
- [Add New Product System Page, page 8](#)

Add New User and Manage Users Pages

On user pages, the following controls will trigger page reloads: Add New User, and Manage Users.

The Add New User page shows a form with only a few elements on it. After a new user is successfully added, the page becomes a Manage Users page, and the focus in the Tree frame moves to Manage Users.

- **Template Name**—Selecting an option in the Template Name select control will bring up both a CallManager User Information section and a Unity User Information section. After the refresh occurs and you press the Tab key, the focus moves to the Add New User leaf in the Tree frame. Press M twice to return to the top of the Content frame.

- **Phone System Select**—Selecting an option in the Phone System select control will bring up a CallManager User Information section. After the refresh occurs and you press the Tab key, the focus moves to the Add New User leaf in the Tree frame. Press M twice to return to the top of the Content frame.
- **Messaging System Select**—Selecting an option in the Messaging System select control will bring up a Unity User Information section. After the refresh occurs and you press the Tab key, the focus moves to the Add New User leaf in the Tree frame. Press M twice to return to the top of the Content frame.

After a page has refreshed once, performing an operation that causes the page to refresh again will keep focus in the Content frame when you press the Tab key. The focus will return to the select control that was accessed immediately before the last refresh.

If no selections were made in the select controls listed above while adding the new user, they can be made when the entered record is called up by using the Manage Users page. Performing an operation that causes the page to refresh again will keep focus in the Content frame when you press the Tab key. The focus will return to the select control that was accessed immediately before the last refresh.

User Template Page

Under the User Template subnode are leaf nodes for Add New User Template and Manage User Templates. The Phone System Select and Messaging System Select controls that refresh the page have names and functions that are identical to those on the Add New User and Manage User pages, and activating these controls routes the focus exactly as on the Users pages. (Note that Template Name is a text field.)

Add New Phone/Profile and Manage Phone/Profile Pages

The Add New Phone/Profile page shows a form with only a few elements on it. After a new user is successfully added, the page becomes a Manage Phones/Profiles page, and the focus in the Tree frame moves to Manage Phones/Profiles.

- **VPT Phone Template**—Selecting an option in the VPT Phone Template select control will bring up an expanded Basic Phone/Profile Configuration section and a collapsed Phone/Profile Configuration section. Values for the Phone System and Device Type selection controls will be entered automatically. Pressing the Tab key moves the focus back to the VPT Phone Template select control.

If no value is entered for VPT Phone Template, the other select controls function as follows:

- **Phone System Select**—Selecting an option in the Phone System select control will refresh the page, but no additional sections will appear. After the refresh occurs and you press the Tab key, the focus moves to a variable location in the Tree frame. Press M twice to return to the top of the Content frame.
- **Device Class**—Selecting an option in the Device Class select control will refresh the page, but no additional sections will appear. After the refresh occurs and you press Tab, the focus moves to a variable location in the Tree frame. Press M twice to return to the top of the Content frame.
- **Device Type**—The Device Type select control has no selectable values unless a value has previously been selected for the VPT Phone Template or Phone System Select controls. Selecting an option in this select control brings up an expanded Basic Phone/Profile Configuration section and a collapsed Phone/Profile Configuration section. Pressing the Tab key moves the focus back to the Device Type select control.

- Phone Button Template—Selecting an option in the Phone Button Template select control (which is in the Basic Phone/Profile Configuration section) will bring up a collapsed Line 1 section. Pressing the Tab key moves the focus back to the Phone Button Template select control.

All of these controls are required with the exception of the VPT Phone Template. Under Manage Phones/Profiles, the VPT Phone Template appears as a select control with no selectable options. The rest of the fields are shown as uneditable text, except for Phone Button Template.

Phone Template Page

Under the Phone Template subnode are leaf nodes for Add New Phone Template and Manage Phone Templates. The Phone System, Device Class, Device Type, and Phone Button Template controls have names and functions identical to those on the Add New Phone/Profile page. (Note that Phone Template is a text field.)

- For Phone System, the focus routes automatically to the Phone System select control; you do not need to press the Tab key.
- For Device Class, pressing the Tab key moves the focus to the Tree frame. Press M twice to return to the top of the Content frame.
- For Device Type, pressing the Tab key moves the focus back to the Device Type select control.

In each line section, there is a edit control (text box) for the Directory Number and a select control for the Partition. Changing either the Directory Number or the Partition will cause the page to reload so that the system can verify that a line with the same Directory Number and Partition does not already exist. After the page reloads, the focus moves back to the last field that was modified.

Add New Product System Page

The Add New Product System page content will refresh and additional fields will appear after an option is chosen from the Product System Type select control. The fields added are dependent on the option chosen. Focus remains on the Product System Type select control after the page reloads.

Pop-Up Windows

On certain VPT pages, clicking a button opens a modal pop-up browser window that is used to collect additional information. When you have successfully added information or made a selection, the pop-up window will close and transfer the information to the applicable window. You receive no confirmation, other than the presence of the new information in the current window.

Clicking the following buttons will open a modal pop-up window:

- Associate Phone/Profile—On the Add New User page and Manage Users page, in the expanded CallManager User Information section.
- Add Phone/Profile—On the Add New User page and Manage Users page, in the expanded CallManager User Information section.
- Add IP Phone Service—On the Add New Phone/Profile page and Manage Phone/Profile page, in the Basic Phone/Profile Configuration section.
- Unassign Line—On the Add New Phone/Profile page and Manage Phone/Profile page, in each Line section.
- Next (when using the Bulk Export function)—From the initial page, after either User or Phone is selected.

- Add More (when using the Bulk Export function)—At the bottom of the Step 2: Select Users to Export page.
- Modify—On the Add New Role page and Manage Roles page. The Modify button is associated with each product system name; it allows privileges to be assigned.

Summary of JAWS Hints for Use with VPT

Navigation Tree

- Expand and collapse nodes by pressing Enter.
- Determine whether a node is open or closed by pressing Enter. If new information appears, the node is open; if information disappears, the node is closed.
- Selecting a leaf node (by pressing Enter) will cause the corresponding page to be loaded into the Content frame to the right of the navigation tree; the leaf node will retain the focus.
- To quickly move to the top of the tree node, press Control-Home to move to the top of page, then press M to move to next frame.
- JAWS will read nodes and subnodes as “This page link” and will read leaf nodes as “Link.”

Frame Navigation

- Press the M key to navigate between frames.
- Press Insert-F9 to bring up a separate window that lists all of the frames on the page; press Insert-F1 to provide a page summary.

Menu Bar

- Menu bar elements, with the exception of the Help index, can be accessed by use of the arrow keys.

Dynamic Forms and Page Reloading

- Each time that information is submitted by pressing a button (for example, Save), you should press M until you move to the top of the Content frame, and then use the Down Arrow key to listen for an “Operation... failed” or a “Successful” message.
- You can expand and collapse section headers in the same way that you expand and collapse tree nodes.
- When you press the Down Arrow to access combo boxes, an automatic page reload will be triggered. Pressing Alt-Down Arrow to open a combo box prevents an automatic reload, and pressing Enter will trigger the reload.
- When a page is processing, you should be patient, because JAWS will not immediately indicate the processing status.



Note

During the testing of VPT with JAWS, inconsistent results were noted. For example, nodes were sometimes prefaced with “This page link” and sometimes only with “Link.” While the inconsistencies noted make it difficult to write authoritative documentation, none of them will impede the ability of JAWS users to successfully navigate and use VPT.

The information in this document is accurate for testing done with JAWS 7.0 and Internet Explorer 6.0 on 2/8/06.

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