



CHAPTER 16

Introducing the VNE Customization Builder (VCB)

These topics introduce the Virtual Network Element (VNE) Customization Builder (VCB) in Cisco Prime Network:

- [About the VCB, page 16-1](#)
- [A Quick Tour of the VCB, page 16-3](#)
- [View VCB Events in Cisco Prime Network Events, page 16-5](#)
- [Unsupported Tickets in Cisco Prime Network Vision, page 16-6](#)
- [Testing and Certifying VCB Customizations - Overview, page 16-7](#)

Additional information about the VCB is available on the [Cisco Developer Network \(CDN\)](#).

About the VCB

The VCB is a tool that allows advanced users to extend the “out-of-the-box” support and capabilities of Prime Network.

The VCB can be used to:

- Enable discovery of currently unsupported device types by creating user-defined VNE drivers, known as U-VNEs.
- Clone from an existing VNE driver to manage new devices that belong to an existing supported device family.
- Extend the discovery and management capabilities of existing VNE drivers to enable Prime Network to:
 - Recognize cards that would otherwise be treated as “Unknown”.
 - Process syslogs, traps, or service events as Prime Network events.
 - Recognize additional software versions, such as maintenance releases of Cisco IOS and other software.
- Produce a list of unsupported traps for a particular MIB and add them as Prime Network events.

The VCB writes extensions into a local registry file, `site.xml`, thereby avoiding impact on the Prime Network code. You do not need to know a great deal about the Prime Network registry to use the VCB.

VCB displays the details of the Cisco and the non-Cisco drivers in different tabs in the VCB GUI as Prime Network 3.9 supports separate installation directories and registry service for Cisco and non-Cisco drivers. Non-Cisco VNEs do not support pluggable module specification, and the pluggable module information is retrieved from the network element itself.

**Note**

The Non-Cisco Drivers tab in VCB GUI is displayed only after successful installation of a non-Cisco device package in Prime Network.

VCB GUI vs. VCB CLI

VCB functions can be performed using the GUI interface that is available in the Prime Network Administration application (from the Tools menu), or by executing VCB commands in the Command Line Interface (CLI).

The VCB tool in Prime Network Administration provides a simple and intuitive GUI for performing VCB functions. If you are new to the VCB, we recommend using this VCB GUI. If you are already familiar with using the CLI to perform VCB functions, or you want to perform more advanced VCB functions that are not yet included in the GUI, you can use the CLI.

**Note**

Prime Network 3.9 web browser based GUI is supported on the following browsers:

- Mozilla Firefox 7.0
- Google Chrome 12, 13, and 14
- Apple Safari 5.1
- Internet Explorer 8 and 9 (on Microsoft Windows 7)

**Note**

The system supports a maximum of two simultaneous VCB user sessions.

The VCB procedures in this guide focus on the VCB GUI. VCB CLI commands are detailed in the following sections:

- [Using the CLI to Create and Manage U-VNEs, page 17-17](#)
- [Using the CLI to Add and Manage Modules, page 18-9](#)
- [Using the CLI to Customize Events, page 19-14](#)
- [Chapter 21, “VCB Template Reference”](#).

VCB Task Flow

The VCB task flow is:

1. **Plan**—Research the NE, module, or event that you intend to add or modify
2. **Define Customizations**—Define your customizations using the VCB GUI or CLI, preferably in a lab or staging environment.

3. **Test**—Verify and certify your customizations using your own test resources, such as a simulator.
4. **Move to Production**—During a maintenance window, put tested, certified extensions into your production environment.

A Quick Tour of the VCB

This section provides information on:

- [Accessing the VCB, page 16-3](#)
- [Filtering the VCB Tables, page 16-4](#)
- [Exporting VCB Tables, page 16-5](#)

**Note**

You must be an Administrator to use the VCB. For more information on user authorization, see the [Cisco Prime Network 3.9 Administrator Guide](#).

Accessing the VCB

You can access the VCB through Prime Network Administration or by specifying a URL in your web browser.

To open the VCB tool:

Step 1 In Prime Network Administration, choose **Tools > VNE Customization Builder**.

or

In your web browser, enter the following URL:
`https://gateway IP address:8043/prime-network-web`

Enter the login credentials. On successful validation of login credentials, the Cisco Prime Network Home page is displayed.

**Note**

When there is a mismatch in the login credentials you provide in Prime Network web based GUI, Prime Network displays an invalid login credentials error. To provide your login credentials in the login page again, you must click the Back button in the web browser and provide the credentials again.

Step 2 Click the VNE Customization Builder link under Tools in the Site Map area. The VCB opens, and the VNE Drivers page is displayed.

Figure 16-1 VCB - VNE Drivers Page

SysOID	Device Type	Type	Cloning Reference	Overriding System Default
.1.3.6.1.4.1.111.2.3.9.1		System Default		
.1.3.6.1.4.1.119.2.3.30		System Default		
.1.3.6.1.4.1.12350.1		System Default		
.1.3.6.1.4.1.1271.1		System Default		
.1.3.6.1.4.1.1271.2		System Default		
.1.3.6.1.4.1.1271.3		System Default		
.1.3.6.1.4.1.1286.1.3	ECI HiFocus	System Default		
.1.3.6.1.4.1.164.6.1.12		System Default		
.1.3.6.1.4.1.164.6.1.12		System Default		
.1.3.6.1.4.1.164.6.1.12		System Default		
.1.3.6.1.4.1.164.6.1.12		System Default		
.1.3.6.1.4.1.1751.1.18		System Default		
.1.3.6.1.4.1.1751.1.18		System Default		
.1.3.6.1.4.1.1751.2.12		System Default		
.1.3.6.1.4.1.1949.1.3.3	Utstarcom AN-2000 IB	System Default		
.1.3.6.1.4.1.1996.1.2		System Default		
.1.3.6.1.4.1.1996.1.3		System Default		
.1.3.6.1.4.1.2352.1.1	RedBack SMS1000	System Default		

**Note**

You can reorder the columns by dragging and dropping the column headers. You can also determine which columns will be displayed by using the Settings tool in the toolbar above the table.

Filtering the VCB Tables

The VCB tool provides a simple and an advanced filter.

To apply a simple filter:

- Step 1** In the VCB tool, click the **Filter** button or select **Quick Filter** from the drop-down list in the Show field above the table.

A free text field is displayed under each column heading and enables you to filter information in each column. The table is filtered as you type.

- Step 2** To clear the filter and perform a new search, click the **Filter** button.

To apply an advanced filter:

- Step 1** In the VCB tool, select Advanced Filter from the drop-down list in the Show field above the table.

- Step 2** Select the attribute, operator and conditions by which you want to filter the table.

- Step 3** To add another filter rule, click the "+" sign.
- Step 4** Click **Go** to apply the filter.
-

Exporting VCB Tables

The VCB tool allows you to export tables to a CSV file
To export to CSV:

- Step 1** In the VCB tool, click the Export button in the tool bar.
The system automatically gives the CSV file a name.
- Step 2** Choose whether you want to save or open the file and click OK.

**Note**

The export to CSV feature does not work on certain Internet Explorer browsers if the default Internet Explorer settings are used. This is because https content cannot be stored locally on the hard drive. To enable saving content locally, uncheck the "Do not save encrypted pages to disk" option in the Internet Explorer advanced Internet options.

View VCB Events in Cisco Prime Network Events

A System event is generated for all write operations add, update, override, and delete.

**Note**

While adding syslogs and traps, Prime Network Events displays the event name while for other events, the SysOID is displayed.

To perform this:

- Step 1** Open Prime Network Events.
- Step 2** Log into the Prime Network gateway using the administrator credentials. For more details on Prime Network events, see the Working with the Prime Network Events Client in the [Cisco Prime Network 3.9 User Guide](#).

When you launch Prime Network Events, messages are displayed if the server and client have different versions of the application that launches the client. For more information about these messages, see the [Cisco Prime Network 3.9 Installation Guide](#).

The first time you log in, the Ticket tab is displayed in the Prime Network Events window.

When you log in again, the tab and filter that were visible when you last logged out of the application are displayed.

Step 3 Click the System tab.

The System tab lists the events related to the everyday working of the internal system and its components. These events may be related to Prime Network and Prime Network gateway resources, representing the system log.

Step 4 Click Filter tool displayed in the Prime Network Events toolbar to filter the VCB events. Enter your filter criteria to filter the VCB events, and click OK.

Unsupported Tickets in Cisco Prime Network Vision

Prime Network 3.9 VCB supports viewing the SysOID of unsupported event tickets such as device not supported, module not supported in Cisco Prime Network Vision. The description field of the ticket in the tickets pane helps you to identify the unsupported event tickets. You can then view the Vendor specific SysOID in the details of the selected ticket.



Note

You must be familiar with Cisco MIBs to work with addressing the support required by the network element.

To retrieve the SysOID of the network element that needs to be addressed, you must:

Step 1 Open Cisco Prime Network Vision. Choose Start > Programs > Cisco Prime Network > Cisco Prime Network Vision.

Step 2 Log into the Prime Network gateway using the administrator credentials.

Step 3 Double-click the unsupported event ticket in the ticket pane.

Step 4 The ticket details window opens and displays the details of the selected ticket. For more information, see *Working with Tickets in Cisco Prime Network Vision* in [Cisco Prime Network 3.9 User Guide](#).

Step 5 Copy the vendor specific SysOID and provide device/module support using Cisco Prime Network VCB.

For more details on providing device/module support for the selected SysOID, see the following chapters:

- [Enabling Support for Additional Device Types and Software Versions](#)
 - [Enabling Support for Additional Modules](#)
-

Testing and Certifying VCB Customizations - Overview

Procedures for testing and certifying customizations are provided throughout this guide. Testing and certifying ensures that you:

- Do not create unintended or undesired results in your production network
- Do obtain the best possible result, a customization that most closely fits technologies, topologies, and other aspects that you need to model

For more information, see [The VCB Log File, page 16-7](#) and [Test Resources, page 16-7](#).

The VCB Log File

The VCB log file is useful for debugging issues that might occur when you use the VCB.

Use the **-logfile** option to specify the name of the log file and the **-debuglevel** option to define the logging level to use. The relevant command is:

```
vcb mode command [command args] -debuglevel INFO -logfile logfilename -user username -password password
```

When debugging, set the debug level to INFO. The log file is created in the *NETWORKHOME/Main/logs* directory. Error messages are written to the log file and are displayed on the console.

Test Resources

To perform the necessary tests on VCB customizations, make use of the tools and resources listed in [Table 16-1](#).



Note

Some tools listed in [Table 16-1](#) are resources to consider in addition to Prime Network.

Table 16-1 *Testing Tools and Resources*

Tool/Resource	Purpose
Prime Network Vision client	<ul style="list-style-type: none"> • Adding an instance of the U-VNE that you created with the VCB and verifying its capabilities. • Verifying the physical and logical inventory of the device. • Verifying that events from the device are being received. • Checking VNE performance.
Direct communication with device	Communicating directly with the device and measuring performance-related issues, such as CPU and memory usage (both with and without the VNE) in various scenarios.

Table 16-1 *Testing Tools and Resources (continued)*

Tool/Resource	Purpose
VNE documentation	<p data-bbox="662 317 1479 411">Chapter 21, “VCB Template Reference” provides the list of technologies and properties that are supported by the template on which the U-VNE is based.</p> <p data-bbox="662 426 1479 520">The <i>Cisco Prime Network 3.9 Reference Guide</i> provides the list of technologies and properties supported by the developed VNEs in a particular version of Prime Network.</p>
Trap simulator (not supplied with Prime Network).	Enables testing of new events.