CHAPTER 1

Introduction

This chapter introduces Virtual Network Elements (VNEs) and describes the types of information available in this guide.

This chapter contains the following topics:

Introduction to VNEs

VNEs (Virtual Network Elements) are independent software processes that run on the Prime Network Unit Servers. Each VNE is assigned to manage a single network element (NE) using the NE's management interfaces (for example, SNMP and/or Telnet). The VNEs maintain a live model, or abstraction, of each NE and the entire network.

As the VNE loads, it starts investigating the NE and automatically builds a live model of the NE, including its physical and logical inventory, its configuration and its status. After modeling the NE, the VNE begins negotiating with peer VNEs, which represent the peer NEs, in order to determine NE connectivity and topology at different layers. This model of the network topology, NE state, and NE inventory is constantly being updated by the VNEs, which track every change that occurs in the NEs and the network.

The VNEs communicate between themselves to analyze end-to-end flows, which provide information for root-cause and impact analysis, service path tracing, and more.

Understanding the Tables

This section describes key information that can be found in the VNE support information chapters in this guide.

This section contains the following topics:

Software Versions

The Software Version column in the tables in this Guide identifies the NE software versions that are compatible with Prime Network (formerly known as Cisco ANA) and that can be running on the NEs that Prime Network supports. For example: The "Cisco 7600 Series—Supported Software Versions" table lists Cisco IOS software version 12.2(18)SXD. This means that Prime Network will work with any supported Cisco 7600-series router (such as the Cisco 7603) that is running IOS release 12.2(18)SXD.

Prime Network may support subsequent maintenance releases of NE software versions, but only if these later NE software versions do not require changes in Prime Network to maintain compatibility. Changes in any of the following NE software components can affect compatibility with Prime Network, and may require Prime Network software changes: XML interfaces, SNMP commands, MIBs, and CLI commands. In cases where a new NE software version remains compatible without requiring changes in Prime Network, support will include recognition of the new NE software version. However, it may not include support for additional software and features (such as new hardware modules) in the NE software version.

Also, for Prime Network to recognize a later NE software image, the name of the NE software rebuild should be similar to a software image in the train already supported in Prime Network. For example, Cisco ANA 3.7 supports IOS 12.2(33)SRC4 for 7600 devices. If IOS 12.2(33)SRC5 is released, Prime Network will recognize IOS 12.2.(33)SRC5 with the same level of support as IOS 12.2(33)SRC4 on 7600 devices. But Prime Network will not support any additional software or hardware features introduced in IOS 12.2(33)SRC5.

Prime Network will not recognize any other maintenance or special build whose version string does not match the indicated naming pattern. For example: IOS 12.2(33)SRC4xyz (or any other variation) will not be recognized.

When an NE software release is not recognized, Prime Network attempts to model the NE using the default version for that device series. The default version is a device-specific fallback set of commands and MIB instrumentation that allows Prime Network to discover and query for basic device properties, including:

- Managed element information.
- Basic physical inventory.
- Logical Inventory (including the Routing Table, ARP, BGP and OSPF information). Modelling of other technologies is done on a best-effort basis.

The default version does not correspond to any specific supported NE software version. Building of the physical model and its containment structure depends on the instrumentation (MIB and CLI commands) used by the default version. The default version may show you different containment structures (modules and cards) from what you will see for an explicitly supported NE software version. You can discover whether the default version is being used for a particular VNE by looking in the AVM log located in *install directory*/main/logs (search for ***default version***).

Cisco frequently qualifies new NE software versions for compatibility with Prime Network, and updates the online version of this Guide accordingly. If you are not sure whether the current version of Cisco ANA supports a recently released NE software version, check the online version of this Guide on Cisco.com for an update. The NE software version should appear in the updated version of this Guide if it has been qualified as compatible with this Prime Network release. If the online version of this Guide does not list the new software version, contact Cisco Professional Services or your Cisco Sales Representative.

Product Versions

Product Version column found in the tables in this Guide lists the version of Cisco ANA or Cisco Prime Network during which a VNE supporting the specified NE module, software, topology, or other feature was first introduced. It is therefore the earliest Cisco ANA version that supports that NE. All later versions of Prime Network also support the NE. For example: If the Guide indicates that Cisco 7600 routers are supported on Cisco ANA 3.6.0, they are also supported on Cisco ANA 3.6.1, 3.6.2, and so on. However, items with Cisco-ANA3.7.X-DP8 or Cisco-ANA3.7.X-DP9 mentioned in Product Version column are supported on ANA 3.7.X platforms only. Cisco Prime Network 3.8 support for these items will be available with PrimeNetwork-3.8.X-DP1 to be released in December 2011 time frame.

Expedite Legend

Table 1-1 describes the meaning of the Expedite column found in the service event (service alarm) tables in this Reference Guide.

Table 1-1 Expedite Legend in Service Event Tables

Value	Descriptions
Y	The service event is expedited by a syslog or trap generated by the device. This means that the syslog or trap causes the VNE to poll the device without waiting for the usual polling cycle, thus enabling quicker detection of the event.
N	The service event is not expedited.This means that the VNE will poll this device during the next regularly scheduled polling cycle.