Cisco Active Network Abstraction - Third-Party Device Management

Overview

For service providers and enterprises evolving their network to Cisco IP next-generation network equipment, Cisco Active Network Abstraction (ANA) delivers network management capability for end-to-end networks consisting of Cisco and non-Cisco equipment that ranges across access, aggregation, edge, and core devices.

ANA virtual network element (VNE) driver technology discovers and maintains an accurate network model of physical and logical services allowing for event monitoring in near real time. Using VNE technology to mediate device-specific management information from each device, ANA provides a “single pane of glass” management view of the network.

For customers with multivendor environments, ANA introduces third-party VNE drivers that are available for common non-Cisco network devices. These ANA third-party VNE drivers are supported and maintained by Cisco as part of the ANA product. This includes VNE upgrades for device releases to maintain management interface compatibility. For non-Cisco devices that are not supported by a standard ANA third-party VNE driver, ANA supports two VNE alternatives for management. ANA provides a generic VNE using standard MIB II to discover the device, but this has limited capabilities. Additionally, customers can also create extensible, user-defined VNE drivers for specific non-Cisco device types. Cisco Advanced Services routinely provides expert support for either of these approaches and further customization.

Benefits

Network operators benefit from using ANA as a highly available and scalable platform to manage both Cisco and non-Cisco devices. ANA provides a single, authoritative view into a network consisting of heterogeneous devices. This reduces operating expenses (OpEx) by providing a unified user experience for real-time device discovery, network topology, and centralized fault management. Additionally, organizations can further reduce OpEx and OSS integration costs by utilizing a single northbound interface regardless of the network equipment vendor.

Cisco ANA Third-Party VNE Drivers

A full list of ANA third-party VNE drivers for the latest release of ANA (3.7.3) is available in the most recent version of the ANA Third Party VNE Reference Guide.

ANA Third-Party VNE Reference Guide

The Cisco Active Network User Reference Guide gives information for supported third-party VNE drivers for all ANA releases.

ANA Third-Party VNE Features

A side-by-side comparison of the options for third-party device management offered within ANA is provided in Table 1.

Table 1. Cisco ANA Third-Party Device Management Options

Features and Functionalities	NMTG developed VNE for Cisco device	NMTG developed VNE for 3rd party device	User-defined VNE with Generic template (Note 2)	Generic VNE (Note 1)
Model for IP and Ethernet topology, logical attributes for routing table, ARP, bridge using standard SNMP MIB	✓	✓	✓	✓
Monitor standard SNMP traps	✓	✓	✓	✓
Device identification	✓	✓	✓	
User extensible with ANA Toolkit	✓	✓	✓	
Physical Inventory discovery using device specific MIB	✓	✓Note3		
L2/L3 Logical inventory and topology discovery using device specific MIB	✓	✓Note3, Note 7		
Support for device specific SNMP traps and syslogs per customer specification	✓	✓Note3		
Image Management and Configuration Archive/Restore	✓			
Maintain compatibility with ANA update release	✓	✓		
Support Service Requests for device OS and management interface changes that impact device inventory discovery and event monitoring	✓Note4	✓		
ANA RTM and SAS Cost (Prime Network will have new RTM structure)	Group 0 to 9	Group NC1, NC2, NC3	Group 0	Group 0
Field extension for additional physical inventory, events and device maintenance upgrade	Note5	Note5	Note5	
Activation scripting using Soft-properties and Command Builder Cost	Note6	Note6	Note6	

Note:
1. Generic VNE is not customizable. It is the default for any not device not recognized by ANS.
2. User-defined Generic VNE created using VNE Customization Builder generic template at run time.
3. Contingency on device configuration and instrumentation available in customer lab devices.
4. VNE for Cisco IP NGN devices are also updated based on interlock with Cisco releases.
5. Field extension of VNE can be done by customer, their SI or AS. The customization is private to customer.
6. Activation are handled typically handled by Soft-properties and Command Builder scripting done by SI or AS.
7. Layer 2: Ethernet, VLAN, Dot1Q, QinQ, EtherChannel, Link Aggregation, POS, ATM, IMA, FR, PPP, DSL, VPLS, Local Switching, LLDP, Layer 3: IP and Routing, MPLS, LDP, MPLS-TE, VRF, RSVP-TE, MP-BGP, OSPF, PW, GRE, BFD; Not all ANA advanced features will be supported for ANA third-party VNEs. For example, the following are not included: Image Management, Configuration Archive Restore, Event Correlation, Impact Analysis, Service Activation.

Requesting a New ANA Third-Party VNE

Requesting a new ANA third-party VNE entails the following:

- The customer communicates the requirement to the Cisco account team and a product enhancement request is submitted
- Requests are prioritized based on customer commitment to provide device lab access, device configuration, management interface specification, and early acceptance test feedback

- The time required to release a new VNE for acceptance after a customer commits to the request depends on a variety of factors including device lab access. Specific estimates will be provided on a case-by-case basis
- At the end of the acceptance period, the final VNE image and documentation are released for general availability
- Customers can then place orders for the newly supported third-party device and for Software Application Support for support and maintenance

Ordering Information

The product numbers given in Table 2 for the Right-to-Manage license for each non-Cisco device managed by ANA can be found as options within the ANA-37x-SOFTWARE product.

Table 2. Right-to-Manage License Numbers for Cisco ANA

Product Number	Description
ANA-3-NC1-RTM	ANA Right-to-Manage for non-Cisco access device
ANA-3-NC2-RTM	ANA Right-to-Manage for non-Cisco aggregation/edge device
ANA-3-NC3-RTM	ANA Right-to-Manage for non-Cisco core device

To place an order contact your local Cisco account representative or visit the Cisco Download Software page at http://www.cisco.com/cisco/software/type.html?mdfid=282861328&flowid=24948 and click ANA VNE Drivers for Non Cisco Devices.

For More Information

For more information about Cisco ANA, visit http://www.cisco.com/go/ana, contact your local Cisco account representative, or send an email to ask_ana_pm@cisco.com. You can also contact ncvd-pteam@cisco.com for any assistance for customer evaluation of any third-party drivers with specific ANA releases.

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