Cisco Active Network Abstraction

Q. What new features have been introduced in Cisco® Active Network Abstraction (ANA) 3.7.3?

A. For a list of major features please refer to the "Active Network Abstraction - What's New in Release 3.7.3" brochure.

Q. Who should deploy Cisco ANA?

A. Cisco ANA is designed for service providers and other carrier-grade network operators.

Q. What part of the service provider management solution does ANA provide?

A. ANA is a modular and flexible multifunctional management solution. In its simplest form, it can be deployed as a comprehensive element manager for Cisco network elements such as the Cisco CRS-1, 7600, and ASR 9000 families. As a service-aware end-to-end network manager, ANA provides the tools and foundation for an integrated suite of capabilities, including resource inventory management, device configuration and image management, and service assurance.

Cisco ANA supports operators of service provider IP next-generation network (NGN) deployments, particularly:

- Converged IP/Multiprotocol Label Switching (MPLS) core and service edge networks
- IP Radio Access Network (RAN) backhaul Mobile Transport over Packet (MToP) networks
- Carrier Ethernet networks

Q. Does Cisco ANA require Software Application Support (SAS)?

A. The purchase of an annual Cisco SAS maintenance contract is required. The Cisco SAS maintenance contract entitles the customer to free upgrades for minor and maintenance application releases, access to Cisco.com's Software Center for patches and bug fixes, along with Cisco Technical Assistance Center (TAC) support.

Q. Where can I obtain part numbers and pricing information for Cisco ANA?

A. Visit the pricing tool and run a search on the product family (Network Management) or the product description or product number (use ANA-3).

Q. What benefits can customers expect from deploying Cisco ANA?

A. Cisco Active Network Abstraction provides service providers and other carrier-grade network operators with a comprehensive, prepackaged network management solution for IP NGN infrastructure networks. Cisco ANA supports more than 50 families of Cisco devices, allowing coverage of the most demanding service provider, and creates and maintains an accurate "virtual" abstract model of the network in near real time to:

- Simplify management of network elements: Supports all major Cisco service provider network elements, MPLS, Carrier Ethernet, and Cisco Unified RAN Backhaul reference architectures.
- Easily manage networks and services: Integrated networkwide and servicewide monitoring and fault analysis.

- Integrate with network management systems (NMSs)/OSSs: Uses a standards-compliant information model for integration with third-party products, and ANA is easily field customized with built-in tools or through the Cisco partner program and Cisco Advanced Services support.

Q. What networking technologies are supported by Cisco ANA?

A. ANA currently supports the following technologies:

- **Converged IP/MPLS core and service edge:** IP, MPLS, MPLS Traffic Engineering (MPLS-TE), Fast Reroute (FRR), Open Shortest Path First (OSPF) and OSPFv3, Intermediate System-to-Intermediate System (IS-IS), Label Distribution Protocol (LDP), Border Gateway Protocol (BGP), Layer 2 and Layer 3 VPN, Session Border Controller (SBC), Bidirectional Forwarding Detection (BFD)
- **Access and backhaul/IP RAN networks (MToP):** xDSL, ATM, Frame Relay, Point-to-Point Protocol (PPP), Multilink PPP (MLPPP), Ch-T1, Ch-T3, SONET/STM, ATM/TDMoPW (PWE3)
- **Clocking:** Precision Timing Protocol (IEEE 1588), Synchronous Ethernet, Adaptive Clock Recovery
- **Carrier Ethernet:** Ethernet, Dot1q, ISL, QinQ VLAN tagging, LAG/Etherchannel, VTP, Spanning Tree Protocol (STP), SVI, VTP, REP, EFP, E-OAM (CFM IEEE 802.1ag, Link-OAM IEEE 802.3ah, Ethernet Local Management Interface [ELMI]), VLAN-Mappings, VPLS, H-VPLS, Provide Backbone Bridges (PBB IEEE 802.1ah)
- **Tunneling:** Generic routing encapsulation (GRE), Layer 2 Tunneling Protocol (L2TP), Pseudowires, Multisegment Pseudowires
- **Discovery protocol:** Cisco Discovery Protocol, Link Layer Discovery Protocol (LLDP)
- **IPv6:** 6VPE (IPv6 VPN over MPLS core), Carrier Grade Network Address Translation (NAT)
- **Physical technologies:** xDSL, IPoDWDM, SONET/SDH, TDM/DSx, Serial

Q. Can Cisco ANA be integrated with my existing OSS applications?

A. Cisco ANA is flexible and easily adaptable in different deployment scenarios. Cisco ANA is customizable to facilitate deployment in a variety of network scenarios. Its standards-based information model is easily extensible, and with its XML-based API, it provides an effective mediation and integration point for the OSS/BSS layer. A comprehensive developer program and reference implementations are offered to ease the task of system integration. Also, pretested integrated solutions are available, with Cisco Prime™ Performance Manager for performance management, IBM Tivoli (also known as Cisco Info Center) for fault, InfoVista VIN, and Cisco Video Assurance Management Solution (VAMS) for video.

Q. What key categories are provided in Cisco ANA?

A. Cisco ANA creates and maintains an accurate, autodiscovered, "virtual" abstract model of the network in near real time to:

- Manage network elements: Supports all major Cisco service provider network elements, MPLS, Carrier Ethernet, and Unified RAN Backhaul reference architectures.
- Manage networks and services: Integrated networkwide and servicewide monitoring and fault analysis.
- Integrate with NMS/OSS: Uses a standards-compliant information model for integration with third-party products, and ANA is easily field customized with built-in tools or through the Cisco partner program and Cisco Advanced Services support.

Q. What devices are supported in Cisco ANA?

A. Cisco ANA provides virtual network elements (VNEs) to support more than 50 Cisco network element families. For a complete list please contact your local Cisco account team. For incremental or maintenance

device software or hardware modules not supported by ANA, customers or their system integrator may extend the VNE drivers in their ANA system using the VNE Customization Builder command-line feature of ANA. Alternatively, customers could contact their account team for future enhancement requests, or contract Advanced Services to develop or enhance VNE drivers to work with their deployed ANA system.

Q. Does the ANA VNE driver support third-party devices?

A. Yes, ANA uses VNE drivers to mediate the device management interface to internal technology models, and hence functions as a multivendor network management platform. Additional devices can be managed by adding new VNE drivers for the device. Customers can add third-party VNE drivers to supplement the supported Cisco device drivers in ANA, can add user-defined VNE drivers, or can request future product enhancements or contract with Advanced Services to develop VNE drivers to work with their deployed ANA system. For details, please contact your account manager.

Q. Does Cisco ANA support high availability deployments?

A. ANA is two-layer architecture. The units layer supports M+N hot-standby redundancy. When deployed on Linux servers, the gateway layer supports a documented and verified integrated solution with the Red Hat Cluster Suite for local redundancy and an embedded solution for geographical redundancy. Additional support for a documented and verified integrated solution with Veritas applications (customer supplied) is provided when the gateway is deployed on Solaris or Linux for both local and geographical redundancy.

Q. I have installed ANA 3.7.3 but don't see some scripts that used to be in ANA 3.6.x in the ANA UI. Why is that?

A. ANA 3.7.3 installation installs command scripts for Connectivity Fault Management (CFM), Ethernet Local Management Interface (E-LMI), Link OAM, Virtual Circuit Connectivity Verification (VCCV), Carrier Grade NAT (CGN), and Resilient Ethernet Protocol (REP). Users can selectively download the additional packages of command scripts from the ANA Technology Center located at http://developer.cisco.com/web/ana/home.

For 3.7.3, the following script packages are available: IPoDWDM, SBC, and General (also called legacy).

Q. What license changes happened in ANA 3.7?

A. ANA 3.7 includes a new licensing mechanism that makes use of Cisco standard tools (FLEXlm) and that replaces the old licensing mechanism. The system will generate system warning events to warn against license violation.

New ANA 3.7 customers can self-generate and download a Cisco ANA license by logging in to http://www.cisco.com/go/license and providing the PAK, Cisco ANA gateway server host ID, and the gateway server hostname. Customers migrating to ANA 3.7 will need to contact their Cisco account representative to get an ANA 3.7 license.

Q. Where can I find migration instructions from ANA 3.6.x to ANA 3.7?

A. Migration instructions are provided in the "Migrating Cisco ANA" chapter in the Cisco ANA Installation Guide.

Q. Where can I find more information?

A. For more information about Cisco Active Network Abstraction, visit http://www.cisco.com/go/ana, contact your local Cisco account representative, or send an email to ask_ana_pm@cisco.com. Technical integration information can be found at http://developer.cisco.com/web/ana/home.

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