CHAPTER 1

Cisco ANA Client Overview

This chapter provides an overview of the Cisco ANA Client application suite, and in addition, it provides a brief explanation of the basic concepts, terms and acronyms used in this guide.

- Cisco ANA NetworkVision, page 1-1, provides a description of Cisco ANA NetworkVision, including the Cisco ANA Soft Properties Manager and the Cisco ANA Command Builder.
- Events, Tickets and Alarm Definitions, page 1-3, defines events, tickets and alarms.
- Basic Terminology, page 1-4, defines the terminology used throughout this guide.

Cisco ANA provides a suite of GUI tools that offer an intuitive interface for managing the network and services and performing the required system administration activities. The Cisco ANA Client application suite consists of the following:

- Cisco ANA NetworkVision, as described in Cisco ANA NetworkVision, page 1-1.
- Cisco ANA EventVision. For more information, refer to the *Cisco Active Network Abstraction EventVision User Guide*.
- Cisco ANA Manage. For more information, refer to the *Cisco Active Network Abstraction Administrator Guide*.

Note Changes to the registry should only be carried out with the support of Cisco Professional Services.

Cisco ANA NetworkVision

Cisco ANA NetworkVision is the main GUI for Cisco ANA. It is a surveillance tool providing total visibility for multi-vendor, multi-tier, multi-technology networks. It also supports fault and configuration functionality. The highly optimized, customizable GUIs enable constant, system-wide surveillance of the network and service states, down to the node level.

Cisco ANA NetworkVision supports the creation of multiple network maps in order to represent specific network views. Views can cover specific network segments, customer networks, or any other mix of network elements desired. Once the maps have been created, they are available for all connecting clients (with support for fine grained access privileges).

Cisco ANA NetworkVision enables you to:

- View network inventory and multilayer connectivity
- Troubleshoot, monitor and manage Network Elements (NEs)

- Model and view network maps maintaining up to date topological information on device connections, traffic and routes

The NetworkVision maps based on Cisco ANA's representation of VNEs (Virtual Network Elements) provides a graphic display of active faults and alarms and serves as an easy access point for activation of services. Cisco ANA provides rich functionality for displaying and managing the network maps by providing:

- Multiple concurrent maps per user.
- Easily customizable hierarchy of nested sub-maps, NE aggregations and business tags with easy navigation up and down the hierarchy.
- Dual views of the network in a hierarchical tree, as well as in topological maps, including all network connections.
- NEs and links using color cues and graphic symbols to indicate status and alarms.
- Every NE (either from the tree or map) allows mouse point-and-click drill-down providing detailed internal physical and logical inventory information.

NetworkVision is also the launch point for related tools such as the Command Builder, Soft Properties Manager and the Cisco ANA PathTracer.

For specific details on using Cisco ANA NetworkVision when working with MPLS VPN service network maps, refer to the *Cisco Active Network Abstraction Managing MPLS User Guide*.

Cisco ANA PathTracer

Cisco ANA PathTracer enables end-to-end route tracing to be performed with informative performance information displayed simultaneously for the multiple networking layers. Upon receiving a path's start and endpoint, Cisco ANA PathTracer visually traces the route through the network. For more information about Cisco ANA PathTracer, see Chapter 9, "Working with Cisco ANA PathTracer".

SoftProperties Manager

The Cisco ANA Soft Properties Manager enables you to manage soft properties and Threshold Crossing Alarms (TCA).

The Soft Properties Manager allows you to extend the set of supported properties for each Network Element (NE), by adding soft properties to the Virtual Network Elements (VNEs). These properties extend the Cisco ANA IMO and are available through the client GUI as well as through the BQL API.

Soft properties are retrieved from the NE using SNMP, Telnet/SSH or TL1.

In addition, alarm thresholding enables the user to constantly monitor selected properties and generate an alarm every time they cross a user-defined threshold or violate a condition.

The Soft Properties Manager tool is typically used by integrators and any other users who want to manage the soft properties and TCA alarms that are executed within the Cisco Active Network Abstraction (ANA) platform.

For more information on the Cisco ANA Soft Properties Manager, refer to the *Cisco Active Network Abstraction Customization User Guide*.

Cisco ANA Command Builder

The Cisco ANA Command Builder enables you to execute a programmable sequence of SNMP or Telnet command lines. These commands can include data properties taken from the Cisco ANA information model (built-in), as well as user-defined input parameters entered during runtime.

The Command Builder is launched from a Managed Element (Cisco ANA modeled VNE) such as a port, typically from the NetworkVision's Inventory window. The Managed Element will then be used to develop and test the command. Once the command has been completed it can be published and attached to a wider scope of Managed Elements.

For more information on the Cisco ANA Command Builder, refer to the *Cisco Active Network Abstraction Command Builder User Guide*.

Events, Tickets and Alarm Definitions

Cisco ANA NetworkVision displays Ticket information created by Cisco ANA's discovery and correlation of system and network events and alarms.

In the Cisco ANA context, the relationship between events, alarms and tickets is as follows:

- An event is an indication of a distinct "activity" that occurred at a specific point in time. Events are derived from incoming traps or notifications and from detected status changes. Examples of events include:
- Port status change
- Route entry drop
- Device reset
- Device becoming reachable
- User acknowledgement of an alarm

  Events are written to the ANA database once and never change.
- An alarm represents a fault scenario that occurs in the network or management system. Alarms represent the complete fault lifecycle, from the time that the alarm is opened (when the fault is first detected) until it is closed and acknowledged. Examples of alarms include:
  - Link down
  - Device unreachable
  - Card out
  - Root cause correlation is determined between alarms (namely, between event sequences). It represents a causal relationship between an alarm and the consequent alarms that originate from it.

  For example, a Card-out alarm can be the root cause of several link down alarms, which in turn can be the root cause of multiple Route-lost and Device unreachable alarms, and so on (a consequent alarm can serve as the root cause of other consequent alarms).
- A ticket represents the complete alarm correlation tree of a specific fault scenario. It can be also identified by the topmost ("root of all roots") alarm. Cisco ANA NetworkVision's Ticket Properties dialog box displays only tickets, but allows drilling down to view the consequent alarm hierarchy.

From an operator's point of view, the managed entity is always a complete ticket. Operations such as Acknowledge, Force-Clear or Remove are always applied to the whole ticket. The ticket also assumes an overall, propagated severity (severity equal to the highest severity of the constituent alarms).

Basic Terminology

This section describes the terminology used throughout this guide.

Acronyms

The following acronyms are used throughout this guide:

Table 1-1 Acronyms

Acronym	Full Name	Description
General		
ANA	Active Network Abstraction	Reference for the entire Cisco ANA solution.
VNE	Virtual Network Element	Reference to a network and device agent
Client		
ANA	Active Network Abstraction	User CLI
EV	Cisco ANA EventVision	
NV	Cisco ANA NetworkVision	
VNE		
DC	Device Component	
NE	Network Element	
AVM	Autonomous Virtual Machine	

Basic Concepts and Terms

This section provides a description of the concepts and terms used throughout this guide.

Table 1-2 Basic Concepts and Terms

Aggregation/ Aggregated Node	Managed Element
Alarm	Network Object
Business Element	Physical Element
Business Tag	Physical Link
Business Link	Provider
Device/Network Element (NE)	Severity Propagation
Device/Network Element Components	Subscriber
Event	Ticket
Link	Virtual Cloud / Unmanaged Network

Table 1-2 Basic Concepts and Terms (continued)

Logical Element	VPN
Logical Link	

Table 1-3 Definitions

Term	Description
Event	An event is an indication of a discrete "activity" that occurred at a specific point of time. Events are determined from incoming traps/notifications and from detected device changes.
Alarm	A series of events having the same source and type.
Ticket	A ticket represents a faulty scenario that occurs in the network or management system. Tickets represent the complete fault lifecycle, from the time that the ticket is opened (when the fault is first detected) until it is closed and acknowledged. It is a correlation of multiple alarms (namely, event sequences). It represents a causal relationship between an alarm and the consequent alarms that originated from it. It is identified by the root cause alarm. Only tickets are displayed in Cisco ANA NetworkVision's ticket pane in the Cisco ANA NetworkVision window. Tickets are also displayed in the Inventory Properties window. Drill down to view the consequent alarm hierarchy when opening the ticket's properties.
Severity Propagation	The network objects' calculated status is propagated from the source/children (namely, the network element component) to the final destination (namely, the network element and tree) via defined relationships.
Aggregation/ Aggregated Node	Zero or more map elements joined together as an aggregation.
Physical Element	A user named physical component/device existing in the network.
Logical Element	A user named logical component, for example, a routing table.
Business Element	Cisco ANA supports the mapping of service-related information to the network resources. This mapping is achieved using a business element that is a wrapper to a network element or service. The VPN is a business element, which represents a set of interconnected Sites forming a single virtual private network over a public network. Cisco ANA organizes the business elements in a way that creates a containment hierarchy that reflects the VPN structure.
Managed Element	Anything managed by the system, usually a component managed by the VNE, for example, a device, cloud, ICMP VNE.
Link	A physical or logical link between: • Two devices in the network • A device and an aggregation • Two aggregations
Physical Link	A link between physical Network Objects, for example, a connection between two physical ports.

Table 1-3 Definitions (continued)

Term	Description
Logical Link	An association between two logical elements (based on a chain of physical elements), for example, a tunnel.
Business Link	An association between: • Logical (protocol oriented configuration) to physical • Logical to logical • Business link to anything For example, in a VPN an association between the physical IP interface and VRF (which is the associated routing table).
Device/Network Element (NE)	A user named physical component/device existing in the network.
Device/Network Element Components	A component of a network element, for example, a port, routing table and so on.
Network Object	Network Objects include network element components, network elements and links.
Virtual Cloud / Unmanaged Network	Virtual clouds are used for representing unmanaged network segments and are displayed as a cloud. Cisco ANA establishes if network problems emanate from the unmanaged network, namely, the cloud.
VPN	The VPN is a business element, which represents a set of interconnected Sites forming a single virtual private network over a public network.
Business Tag	A “business” tag is a record that points to a network object. Each business tag has a “key” field, which is a unique identifier for the entity and its name (refer to Business Element). There are three types of tags, namely, subscriber, provider, and label. Business tags are stored in the Cisco ANA Gateway database.
Provider	The party providing the service.
Subscriber	The party receiving the service.