CHAPTER 18

Base Logical Components

This chapter describes the level of support that Cisco ANA provides for the base logical components, as follows:

- Inventory and Information Model Objects (IMOs), page 18-1
- Service Alarms, page 18-4

Inventory and Information Model Objects (IMOs)

This section includes the following tables:

- Managed Element (IManagedElement)
- Logical Root (ILogicalRoot)
- Physical Root (IPhysicalRoot)
- Managed IP (IManagedIP)
- Context (IContext)
- System Service (ISystemService)

Managed Element

The following Managed Element object describes the root object of a network element, from which all it physical (chassis, slots, modules, port connectors) and logical (routing and switching entities, communication and physical termination point) components' objects are being accessed.

Table 18-1 Managed Element (IManagedElement)

Attribute Name	Attribute Description
IP Address	Management IP address
Communication State	Communication state with the managed device and the gateway (*Unknown, Device Unreachable, Agent Unreachable, Device Reachable, Agent Unloaded*)
Investigation State	Investigation state of the Virtual Network Element (VNE) (*Unknown, Initializing, Normal, Incomplete, Unsupported, Device Agent Shutting Down, Device Agent Maintenance, Device Agent Preparing for Maintenance*)

Table 18-1 Managed Element (IManagedElement) (continued)

Attribute Name	Attribute Description
Element Category	Element category (*Unknown, DSLAM, Switch, BRAS, Router, Ethernet Switch, Cloud, Metro Central, Server, EMS, Generic Device Agent, ICMP, PC, Printer, Netra, WiFi Element, Service Control Switch*)
Element Type and its Key	Element type and its key mapped by the registry based on the SNMP system OID
Logical and Physical Roots	Logical and physical roots of the VNE model
Device Name	Device name as configured by the user in the registry
System Name, Description, Location, Contact and Up Time	System name, description, location, contact and up time taken from MIB II (RFC 1213)
Software Version	Software version
Vendor Identity	Vendor identity (*Null, Copper Mountain, Alcatel, Cisco, Redback Networks, Marconi, Lucent, Nokia, ADC, TdSoft, RAD, Nortel Networks, ECI Telecom, Juniper Networks, Sheer Networks, SUN Microsystems, NEC, Huawei, Laurel, UTStarcom*)
Memory and CPU Usage	Memory and CPU usage
Agent Memory and Free Memory Sizes	Agent memory and free memory sizes
Number of Device Components	Number of Device Components (DCs)
Number of Logical Entries	Number of property holders, which are not DCs

Logical Root

The following Logical Root and Physical Root objects, aggregates or contains all the logical and physical components of a Managed Element, and are accessed by the later logical and physical root attributes.

Table 18-2 Logical Root (ILogicalRoot)

Attribute Name	Attribute Description
Managed IPs List	Array of Managed IPs
Contexts List	Array of Contexts
Forwarding Components List	Array of Forwarding Component Containers
Traffic Descriptors List	Array of Traffic Descriptor Containers
Tunnel Containers List	Array of Tunnel Containers
Services List	Array of System Services
Data Link Aggregation Containers List	Array of data link aggregations (Link Aggregation Groups, Cisco's Ethernet Channels)

Physical Root

Table 18-3 Physical Root (IPhysicalRoot)

Attribute Name	Attribute Description
Equipment Holders	Array of equipment holders such as Chassis and Shelf

Managed IP

The following Managed IP object, aggregates or contains all logical components of a Managed Element, which are being managed by one of the multiple managed IP addresses of this element. It is accessed by a Logical Root.

Table 18-4 Managed IP (IManagedIP)

Attribute Name	Attribute Description
System Name, Description, Location, Contact and Up Time	System name, description, location, contact and up time taken from MIB II (RFC 1213)
Software Version	Software version
Contexts List	Array of Contexts
Forwarding Components List	Array of Forwarding Component Containers
Traffic Descriptors List	Array of Traffic Descriptor Containers
Tunnel Containers List	Array of Tunnel Containers
Services List	Array of System Services

Context

The following Context object, aggregates or contains all the logical components of a Managed Element with a single context, such as a virtual router, and is accessed by a Logical Root.

Table 18-5 Context (IContext)

Attribute Name	Attribute Description
Name	Context name
IP Address Pools	Array of IP Address Pools
Forwarding Components List	Array of Forwarding Component Containers
Traffic Descriptors List	Array of Traffic Descriptor Containers
Tunnel Containers List	Array of Tunnel Containers
Data Link Aggregation Containers List	Array of data link aggregations (Link Aggregation Groups, Cisco's Ethernet Channels)

System Service

The following System Service objects, describe a single system service along with its status and up time, and is accessed by a Logical Root.

Table 18-6 System Service (ISystemService)

Attribute Name	Attribute Description
Type	Service type (*Unknown, Radius, Network Time Protocol, Spanning Tree Protocol*)
Status	Service status (*Null, Running, Down, Reset, Initializing, Other*)
Up Time	Service up time

Service Alarms

The following alarms are supported for this technology:

- Component Unreachable/Component Reachable
- CPU Over Utilized/CPU Normal Use
- Device Unsupported
- Memory Over Utilized/Memory Normal Use

Note For a detailed description of these alarms and for information about correlation see the *Cisco Active Network Abstraction Fault Management User Guide, 3.6.*