



CHAPTER 19

Common (Shared by Several)

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

- [Inventory and Information Model Objects \(IMOs\), page 19-1](#)
- [Network Topology, page 19-6](#)
- [Service Alarms, page 19-6](#)

Inventory and Information Model Objects (IMOs)

This section includes the following tables:

- [Physical Layer \(IPhysicalLayer\)](#)
- [Bridging Entity \(IBridge\)](#)
- [Bridging Entry \(IBridgeEntry\)](#)
- [VC Multiplexer \(EncapMux\)](#)
- [VC Encapsulation \(IVcBasedEncapsulation\)](#)
- [VC Switching Entity \(IVcSwitchingEntity\)](#)
- [Virtual Cross Connection \(IVcCrossConnect\)](#)
- [Forwarding Component Container \(IFWComponentContainer\)](#)
- [Traffic Descriptor Container \(ITrafficDescriptorContainer\)](#)
- [Tunnel Container \(ITunnelContainer\)](#)

Physical Layer

The following [Physical Layer](#) object, is bound by its Containing Termination Points attribute to a [Port Connector](#) object, and is accessed by the Data Link layer bound by its Contained Connection Termination Points attribute.



Note

The following attributes are configured in the registry and not retrieved from the device.

Table 19-1 Physical Layer (IPhysicalLayer)

Attribute Name	Attribute Description
Media Type	Physical media type (<i>Null, Thin Coax, Thick Coax, Fiber Optic, Multi Mode Fiber Optic, Single Mode Fiber Optic, Short Single Mode Fiber Optic, Long Single Mode Fiber Optic, UTP, STP, FTP, EIA/TIA-232, EIA/TIA-449, V.35, X.21, EIA/TIA-530, EIA/TIA-530A, Generic Serial, EIA/TIA-612/613, Other</i>)
Clocking Source	Clocking source (<i>Unknown, Other, Network, Internal, Loop Timed, External, None, Line, Back Plane, Adaptive Timing</i>)
Maximum Speed	Maximum supported speed with units specification
Is Internal Port	Indicate an internal port, such as between module and backplane (<i>True, False</i>)
Discarded Bandwidth	Current discarded input bandwidth
Dropped Bandwidth	Current dropped output bandwidth
Input Bandwidth	Current utilized input bandwidth
Output Bandwidth	Current utilized output bandwidth
Discarded and Received Input Data Counters	Discarded and received input octets and packets counters
Dropped and Forward Output Data Counters	Dropped and forward output octets and packets counters
Administrative Status	Administrative status (<i>Unknown, Up, Down, Testing</i>)
Operational Status	Operational status (<i>Unknown, Up, Down, Testing, Dormant, Not Present</i>)
Operational Status Last Change	Date of last operational status change
IANA Type	IANA type of the sub/layer
Containing Termination Points	Underlying termination points (connection or physical)
Contained Connection Termination Points	Bound Connection Termination Points

Bridging Entity

The following [Bridging Entity](#) object describes the IEEE 802™ based protocols independent forwarding component of an IEEE 802™ Bridge/Switch, which is bound by its Logical Sons attribute to all the Data Link layers such as [Ethernet](#), [Token Ring](#) and future Wireless LAN and MAN interface objects, which IEEE 802™ based Data Link frames are being bridged or switched between, by this Bridging Entity.

Table 19-2 Bridging Entity (IBridge)

Attribute Name	Attribute Description
Bridge Table	Array of Bridging Entries
Type	Bridge type (<i>Null, Automatic, Regular, Bridge Route</i>)

Table 19-2 *Bridging Entity (IBridge) (continued)*

MAC Address	Bridge internal MAC address used either for running Spanning Tree Protocol (STP) or for bridge's network management
IP Interface	OID of the IP Interface used mainly for routing traffic from that bridge
Name	Bridging entity name
Logical Sons	Array of all IEEE 802™ based data link interfaces (Ethernet Interface , Token Ring Interface ..), which IEEE 802™ based data link frames are being bridged/switched between, by this Bridging Entity

Bridging Entry

The following [Bridging Entry](#) object describes a bridging domain wide bridge table's entry of a [Bridging Entity](#).

Table 19-3 *Bridging Entry (IBridgeEntry)*

Attribute Name	Attribute Description
Destination MAC Address	Destination station MAC address
Outgoing Interface	Outgoing underlying interface (Cisco's Ethernet Channels , Ethernet Interfaces , Virtual LAN Interfaces or Virtual LAN Multiplexers)

VC Multiplexer

The following [VC Multiplexer](#) object is bounded by its Containing Termination Points attribute to either an [ATM Interface](#) or a [Frame Relay Interface](#) object, and is primarily accessed by the Data Link layer [VC Encapsulations](#) bound by its Contained Connection Termination Points attribute.

Table 19-4 *VC Multiplexer (EncapMux)*

Attribute Name	Attribute Description
Virtual Connection Count	Bounded virtual connection count
IANA Type	IANA type of the sub/layer
Containing Termination Points	Underlying termination points (ATM Interface or Frame Relay Interface)
Contained Connection Termination Points	Bound Connection Termination Points (VC Encapsulations)

VC Encapsulation

The following Data Link layer [VC Encapsulation](#) object, is bound by its Containing Termination Points attribute to an ATM or Frame Relay [VC Multiplexer](#) object, and is primarily accessed by a network layer such as an [IP Interface](#) as well as a Data Link layer such as [Ethernet Interface](#) and [Point To Point Protocol Encapsulation](#) bound by its Contained Connection Termination Points attribute.

Table 19-5 *VC Encapsulation (IVcBasedEncapsulation)*

Attribute Name	Attribute Description
Virtual Connection	Virtual connection (ATM Virtual Connection or Frame Relay Virtual Connection)
Binding Information	Binding information (<i>User Name, ...</i>)
Binding Status	Binding status (<i>Not Bound, Bound</i>)
IANA Type	IANA type of the sub/layer
Containing Termination Points	Underlying termination points (connection or physical)
Contained Connection Termination Points	Bound Connection Termination Points

Virtual Connection Switching Entity

The following [Virtual Connection Switching Entity](#) object describes the standard forwarding component of an ATM or Frame Relay Switch, which is bound by its Logical Sons attribute to all the Data Link layers such as [ATM Interface](#) or [Frame Relay Interface](#) objects, which cells or frames respectively are being switched between, by this [Virtual Connection Switching Entity](#).

Table 19-6 *VC Switching Entity (IVcSwitchingEntity)*

Attribute Name	Attribute Description
Cross Connect Table	Array of Virtual Cross Connections
Logical Sons	Array of all ATM Interfaces or Frame Relay Interfaces , which cells or frames respectively are being switched between, by this Virtual Connection Switching Entity

Virtual Cross Connection

The following [Virtual Cross Connection](#) object describes either a [Virtual Connection Switching Entity](#) wide or an [ATM Interface](#) specific Cross Connect table's entry.

Table 19-7 *Virtual Cross Connection (IVcCrossConnect)*

Attribute Name	Attribute Description
Ingress and Egress Virtual Connection	Ingress and egress virtual connections (ATM Virtual Connection or Frame Relay Virtual Connection)
Ingress and Egress Port	Ingress and egress ports (<i>Port Connectors</i>)

Forwarding Component Container

The following [Forwarding Component Container](#) object aggregates a single type Forwarding Components, such as [Routing Entity](#), [Bridging Entity](#) and [Virtual Connection Switching Entity](#).

Table 19-8 Forwarding Component Container (IFWComponentContainer)

Attribute Name	Attribute Description
Forwarding Components	Array of a single type forwarding components
Type	Forwarding component (<i>Null, Routing Entities, Bridges, VRFs, LSEs, VC Switching Entities, L2TP Peers, MPBGPs, IMA Groups</i>)

Traffic Descriptor Container

The following [Traffic Descriptor Container](#) object, which basically is a container of any table's entries, aggregates a single type Traffic Descriptors such as [OSPF Entry](#).

Table 19-9 Traffic Descriptor Container (ITrafficDescriptorContainer)

Attribute Name	Attribute Description
Traffic Descriptors	Array of a single type traffic descriptors
Type	Descriptor type (<i>Null, ATM Traffic Profiles, ADSL Traffic Descriptors, SDSL Traffic Descriptors, IDSL Traffic Descriptors, SHDSL Traffic Descriptors, MPLS Properties, CAC Profiles, ATM Access Profiles, OSPF Networks, BGP Neighbor, Access Lists, Tunnel Traffic Descriptors, QoS Policies, QoS Classes, IS-IS Database, QoS WRED, ATM Traffic Shaping Profile, Frame Relay Traffic Profiles, Rate Limit, Filter, Policier, IP Pools, ISAKMP Policies, IPsec Maps, Process List, Installed Software, L2TP Peer Group, L2TP Domain Group, QoS Object Table, QoS Class Map, QoS Policy Map, QoS Match Statments Table, QoS Queueing Config Table, QoS Service Policy Table, ADSL2 Traffic Descriptors, ADSL2 Spectrum Descriptors</i>)

Tunnel Container

The following [Tunnel Container](#) object aggregates single type tunnel interfaces, which are either [MPLS TE Tunnel Interfaces](#) or [PTP Layer 2 MPLS Tunnel Interfaces](#).

Table 19-10 Tunnel Container (ITunnelContainer)

Attribute Name	Attribute Description
Tunnel Edges	Array of either PTP Layer 2 MPLS Tunnel Interfaces or MPLS TE Tunnel Interfaces

Network Topology

The Cisco Discovery Protocol (CDP), although a proprietary one, plays a major role in discovery of all Cisco's network equipment. Hence it is used as part of the physical topology discovery of Cisco's equipment by searching for the existence of local CDP neighbors signature, gathered from the physical layer, in any remote side's port of the same type.

Service Alarms

The following alarms are supported for this technology:

- Cloud Problem
- Discard Input Packets/Normal Discard Input Packets
- Dropped Output Packets/Normal Dropped Output Packets
- Link Down/Link Up
- Port Down/Port Up
- Receive Utilization/Receive Utilization Normal
- Transmit Utilization/Transmit Utilization Normal

**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*.