CHAPTER 25

Layer 2 Tunnel Protocol

This chapter describes the level of support that Cisco ANA provides for L2TP, as follows:

Note L2TP technology is currently not supported for Cisco devices.

Technology Description

Please see Part 1: Cisco VNEs in this guide for information about which devices support the various technologies.

L2TP

Layer 2 Tunnel Protocol (L2TP) acts like a data link (Layer 2) protocol for tunneling network traffic between two peers over an existing network (usually the Internet). The two endpoints of an L2TP tunnel are the initiator of the tunnel, the L2TP access concentrator (LAC), and the L2TP network server (LNS), which waits for new tunnels. Once a tunnel is established, the network traffic between the peers is bidirectional.

L2TP is, in fact, a session layer (Layer 5) protocol, as the entire L2TP packet is sent within a User Datagram Protocol (UDP) datagram, while it is common to carry PPP sessions within an L2TP tunnel. L2TP does not by itself provide confidentiality or strong authentication. IPsec is often used to secure L2TP packets by providing confidentiality, authentication, and integrity.

Information Model Objects (IMOs)

This section describes the following IMOs:

- L2TP Interface (IL2TPTunnel)
- L2TP Session Entry (IL2TPSessionEntry)

L2TP Interface

The L2TP Interface object represents one edge of an L2TP tunnel. It aggregates multiple L2TP Session Entries, to which it is bound by its Session Table attributes. It is aggregated by an LT2P peer from which it is created or cloned.

Table 25-1 L2TP Interface (IL2TPTunnel)

Attribute Name	Attribute Description	Scheme	Polling Interval
Local and Remote Tunnel Identifications	Local and remote tunnel identifications	Product	Configuration
Local and Remote Tunnel Names	Local and remote tunnel names	Product	Configuration
Remote Address	Remote IP address	Product	Configuration
Control Errors	Control errors count	Product	Configuration
Last Error Code	Error code value recorded for the last error that caused tunnel disconnection	Product	Configuration
Tunnel State	Tunnel state (*Unknown, Idle, Connecting, Established, Disconnecting*)	Product	Configuration
Sessions Count	Current session count	Product	Configuration
Sessions Table	Array of L2TP Session Entries	Product	Configuration

L2TP Session Entry

The L2TP Session Entry object represents a session within an L2TP tunnel. It is primarily accessed by the L2TP Interface in which it is contained.

Table 25-2 L2TP Session Entry (IL2TPSessionEntry)

Attribute Name	Attribute Description	Scheme	Polling Interval
Local and Remote Session Identifications	Local and remote session identifications	Product	Configuration
Subscriber Name	Subscriber name	Product	Configuration
Session Type	Session type (*Unknown, LAC, LNS*)	Product	Configuration
Session State	Session state (*Unknown, Idle, Connecting, Established, Disconnecting*)	Product	Configuration
Input and Output Data Counters	Input and output data octets and packet counters	Product	Configuration

Vendor-Specific Inventory and IMOs

Vendor-specific IMOs are implemented only for specific vendor devices. The following sections describe objects for specific vendors:

- Redback L2TP Peer
- Redback L2TP Group
- Redback L2TP Domain Entry

Redback L2TP Peer

The Redback L2TP Peer object describes a logical component aggregating multiple L2TP Interfaces and their configurations. It is bound by its Logical Sons attribute and is used primarily for managing the creation of L2TP tunnels.

Table 25-3 Redback L2TP Peer (IL2TPPeer)

Attribute Name	Attribute Description	Scheme	Polling Interval
Local and Peer Addresses	Local and peer IP addresses	Product	Configuration
Local and Peer Names	Local and peer names	Product	Configuration
Tunnel Type	Tunnel type (*Unknown, LAC, LNS*)	Product	Configuration
Tunnel Mode	Tunnel mode (*Null, Static, Dynamic*)	Product	Configuration
Maximum and Current Tunnels Counts	Maximum and current tunnel counts	Product	Configuration
Maximum and Current Sessions Counts	Maximum and current session counts	Product	Configuration
Session Authentication Type	Session authentication type (*Null, None, Simple, Challenge*)	Product	Configuration
Tunnel Password	Tunnel password for the authentication phase of the tunnel establishment	Product	Configuration
RADIUS Identification	RADIUS identifier	Product	Configuration
Hello Time Interval	Time interval at which hello (keepalive) packets should be sent	Product	Configuration
Control Errors	Control errors count	Product	Configuration
Media Type	Underlying media type (*Null, Other, None, UDPLP, Frame Relay, ATM*)	Product	Configuration
Group Identification	OID of LT2P group (*IL2TPGroup*)	Product	Configuration
Domains Table	Array of L2TP Domain Entries	Product	Configuration
Logical Sons	Array of aggregated L2TP Interfaces	Product	N/A

Redback L2TP Group

The Redback L2TP Group object describes a logical component that is load balancing multiple Redback L2TP Peers. The Redback L2TP Peers are grouped by the Redback L2TP Group Peer List attribute and aggregated by a Traffic Descriptor Container object.

Table 25-4 Redback L2TP Group (IL2TPGroup)

Attribute Name	Attribute Description	Scheme	Polling Interval
Group Name	Layer 2 tunnel protocol group name	Product	Configuration
Tunnel Algorithm	Tunnel algorithm	Product	Configuration
Dead Time	Dead time	Product	Configuration
RADIUS Identification	RADIUS identifier	Product	Configuration
Peers List	Array of Redback L2TP Peers	Product	Configuration
Domains Table	Array of L2TP Domain Entries	Product	Configuration
Name	Group name	Product	Configuration
Index	Group index	Product	Configuration

Redback L2TP Domain Entry

The Redback L2TP Domain Entry object describes an Internet domain in which members are allowed to open L2TP sessions within L2TP tunnels, aggregated by the L2TP peers or groups containing the domain. It is aggregated by a Traffic Descriptor Container object.

Table 25-5 Redback L2TP Domain Entry (IL2TPDomainEntry)

Attribute Name	Attribute Description	Scheme	Polling Interval
Domain Name	L2TP domain name	Product	Configuration
Attached To Object	OID of the Redback L2TP Peer or Redback L2TP Group to which this domain is attached	Product	Configuration
Name	Peer or group name	Product	Configuration
Index	Peer or group index	Product	Configuration

Network Topology

Cisco ANA does not support discovery or manual configuration of L2TP data link layer topology.

Service Alarms

The following alarms are supported for this technology: