



CHAPTER 9

Support Information for Redback Devices

This chapter contains support information for Virtual Network Elements (VNEs) that manage Redback devices in Cisco ANA 3.6.5, and contains the following topics:

- [SmartEdge 800 Multiservice Edge Router, page 9-1](#)
- [Redback SMS Family, page 9-4](#)
- [Supported Technologies on Redback Devices, page 9-6](#)



Note

For more information about the objects and attributes described in this chapter, see the [Cisco Active Network Abstraction 3.6.5 Technology Support and Information Model Reference Manual](#).

SmartEdge 800 Multiservice Edge Router

This section includes the following information about SmartEdge 800 devices:

- [SmartEdge 800—Supported Software Versions, page 9-2](#)
- [SmartEdge 800—Supported Topologies, page 9-2](#)
- [SmartEdge 800—Supported Modules, page 9-2](#)
- [SmartEdge 800—Supported Technologies, page 9-3](#)
- [SmartEdge 800—Supported Service Events, page 9-3](#)



Note

For information about which NE types are supported in Cisco ANA 3.6.5, see [SmartEdge 800 Multiservice Edge Router](#).

SmartEdge 800—Supported Software Versions

Table 9-1 Supported Software Versions for SmartEdge 800—Cisco ANA 3.6.5

Version Name	ANA Version	Certification Level
SEOS 4.0.5.5	3.5.2	V
SEOS 2.5.7.6	3.5.2	V



Note

Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6.5. Specific software versions that have been tested and verified are listed individually and marked as V.

SmartEdge 800—Supported Topologies

Table 9-2 Supported Topologies for SmartEdge 800—Cisco ANA 3.6.5

Topology Type	Link Type	ANA Version
ATM	ATM	3.5.2
Ethernet	Ethernet	3.5.2
Physical Layer	Physical Layer	3.5.2

SmartEdge 800—Supported Modules

Table 9-3 Supported Modules for SmartEdge 800—Cisco ANA 3.6.5

Module Name	ANA Version	Module Description	Certification Level
ETHER-12-PORT	3.5.2	12 port 10/100TX Ethernet	V
ATM-OC3-2-PORT	3.5.2	2 port OC-3c/STM-1 ATM	V
ATM-OC3-4-PORT	3.5.2	4 port OC-3c/STM-1 ATM	V
ATM-DS3-12-PORT	3.5.2	12 port DS3 ATM	V
ATM-OC12-1-PORT	3.5.2	1 port OC-12 ATM	V
ATM-OC12E-1-PORT	3.5.2	1 port OC-12e ATM	V
OC3-8-PORT	3.5.2	8 port OC-3c/STM-1	V
GIGAETHER-4-PORT	3.5.2	4 port Gigabit Ethernet	V
GIGAETHER-10-PORT	3.5.2	10 port Gigabit Ethernet	V
XCRP	3.5.2	Cross Connect Route Processor	V
XCRP3	3.5.2	Cross Connect Route Processor	V

SmartEdge 800—Supported Technologies

The following technologies are supported by the SmartEdge 800 in Cisco ANA 3.6.5:

- [IP](#), page 9-7
- [Ethernet \(IEEE 802.3\)](#), page 9-9
- [ATM](#), page 9-12
- [Point to Point](#), page 9-15
- [L2TP](#), page 9-16
- [Physical Technologies](#), page 9-17
- [Physical Equipment](#), page 9-18
- [Base Logical Components](#), page 9-19
- [Common](#), page 9-20

SmartEdge 800—Supported Service Events

Table 9-4 *Supported Service Events for SmartEdge 800—Cisco ANA 3.6.5*

Event Name	ANA Version	Expedited
All IP Interfaces Down / Active IP Interfaces Found	3.5.2	N
Interface Status Down/Up	3.5.2	N
Card In/Out	3.5.2	N
Link Down/Up	3.5.2	N
Device Unreachable	3.5.2	N
Device Unsupported	3.5.2	N
Discard Packets	3.5.2	N
Dropped Packets	3.5.2	N
Module Unsupported	3.5.2	N
Port Flapping	3.5.2	N
Port Down	3.5.2	N
Card Up/Down	3.5.2	N

Redback SMS Family

This section includes the following information about Redback SMS devices:

- [Redback SMS—Supported Software Versions, page 9-4](#)
- [Redback SMS—Supported Topologies, page 9-4](#)
- [Redback SMS—Supported Modules, page 9-4](#)
- [Redback SMS—Supported Technologies, page 9-5](#)
- [Redback SMS—Supported Service Events, page 9-5](#)



Note

For information about which NE types are supported in Cisco ANA 3.6.5, see [Redback SMS Family](#).

Redback SMS—Supported Software Versions

Table 9-5 *Supported Software Versions for Redback SMS—Cisco ANA 3.6.5*

Version Name	ANA Version	Certification Level
6.0.9.18 MAINTENANCE RELEASE	3.5.2	V



Note

Software versions marked with an asterisk (representing a wildcard) are supported by Cisco ANA 3.6.5. Specific software versions that have been tested and verified are listed individually and marked as V.

Redback SMS—Supported Topologies

Table 9-6 *Supported Topologies for Redback SMS—Cisco ANA 3.6.5*

Topology Type	Link Type	ANA Version
Ethernet	Ethernet	3.5.2

Redback SMS—Supported Modules

Table 9-7 *Supported Modules for Redback SMS—Cisco ANA 3.6.5*

Module Name	ANA Version	Module Description	Certification Level
AT2DS3	3.5.2	Two-Port ATM2 DS-3 I/O Module	V
AT2OC3	3.5.2	Two-Port ATM2 OC-3c SMF and MMF I/O Modules	V
AXOC12	3.5.2	Two-Port ATM2 OC-3c SMF and MMF I/O Modules	V
ATDS3	3.5.2	Two-Port ATM2 DS-3 I/O Module	V
ATOC3	3.5.2	Two-Port ATM2 OC-3c SMF and MMF I/O Modules	V

Table 9-7 **Supported Modules for Redback SMS—Cisco ANA 3.6.5 (Continued)**

Module Name	ANA Version	Module Description	Certification Level
CE1	3.5.2	Control Engine 1 Module	V
CE2	3.5.2	Control Engine 2 Module	V
CE3	3.5.2	Control Engine 3 Module	V
ENET	3.5.2	Two-Port 10/100-Mbps Ethernet I/O Module	V
GIGEX	3.5.2	Two-Port 1Gbps Ethernet I/O Module	V
FE	3.5.2	Forwarding Engine 1 Module	V
FE2	3.5.2	Forwarding Engine 2 Module	V
FE3	3.5.2	Forwarding Engine 3 Module	V
GBENET	3.5.2	Two-Port 1Gbps Ethernet I/O Module	V
XGE	3.5.2	Two-Port 1Gbps Ethernet I/O Module	V
XFE	3.5.2	Forwarding Engine 2 Module	V
FABRIC	3.5.2	Switch Fabric 42G	V
TIMING	3.5.2	Timing module	V

Redback SMS—Supported Technologies

The following technologies are supported by the Redback SMS in Cisco ANA 3.6.5:

- [IP, page 9-7](#)
- [Ethernet \(IEEE 802.3\), page 9-9](#)
- [ATM, page 9-12](#)
- [Frame Relay, page 9-14](#)
- [Point to Point, page 9-15](#)
- [L2TP, page 9-16](#)
- [Physical Technologies, page 9-17](#)
- [Physical Equipment, page 9-18](#)
- [Base Logical Components, page 9-19](#)
- [Common, page 9-20](#)

Redback SMS—Supported Service Events

Table 9-8 **Supported Service Events for Redback SMS—Cisco ANA 3.6.5**

Event Name	ANA Version	Expedited
Primary HSRP Interface Active/Inactive	3.5.2	N
Secondary HSRP Interface Active/Inactive	3.5.2	N
All IP Interfaces Down / Active IP Interfaces Found	3.5.2	Y

Table 9-8 *Supported Service Events for Redback SMS—Cisco ANA 3.6.5 (Continued)*

Event Name	ANA Version	Expedited
Interface Status Down/Up	3.5.2	Y
Card In/Out	3.5.2	Y
Link Down/Up	3.5.2	Y
Device Unreachable	3.5.2	N
CPU Over Utilized	3.5.2	N
Memory Over Utilized	3.5.2	N
Device Unsupported	3.5.2	N
Discard Packets	3.5.2	N
Dropped Packets	3.5.2	N
Module Unsupported	3.5.2	N
Port Flapping	3.5.2	N
Port Down	3.5.2	Y
Rx Over Utilized	3.5.2	N
Tx Over Utilized	3.5.2	N
VPN Leak	3.5.2	N
Cloud Problem	3.5.2	N
Broken LSP Discovered	3.5.2	N
MPLS Black Hole	3.5.2	N
Layer 2 Tunnel Down	3.5.2	N
MPLS TE Tunnel Down/Flapping	3.5.2	N
BGP Neighbor Down	3.5.2	N
Card Up/Down	3.5.2	Y

Supported Technologies on Redback Devices

The following sections list the objects and attributes that are supported on Redback devices in Cisco ANA 3.6.5 per technology:

- [IP, page 9-7](#)
- [Ethernet \(IEEE 802.3\), page 9-9](#)
- [ATM, page 9-12](#)
- [Frame Relay, page 9-14](#)
- [Point to Point, page 9-15](#)
- [L2TP, page 9-16](#)
- [Physical Technologies, page 9-17](#)
- [Physical Equipment, page 9-18](#)
- [Base Logical Components, page 9-19](#)

- [Common, page 9-20](#)

IP

Table 9-9 IP Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—IPIInterface		
IP Address	Y	Y
Subnetwork Mask	Y	Y
IP Interface Addresses Array		Y
Interface Name	Y	Y
Interface Description	Y	Y
IP Interface State	Y	Y
OSPF Interface Cost		
Broadcast Address		
MTU		
Lookup Method		
Address Resolution Type		
ARP Timeout		
Secured ARP		
ICMP Mask Reply		
IGMP Proxy		
HSRP Groups		
IP Multiplexing Table		
IANA Type		
Containing CTPs		
Contained CTPs		
IMO Name—IIPMuxEntry		
Termination Point		Y
Destination IP Subnet		Y
IMO Name—IRoutingEntity		
Routing Table	Y	Y
ARP Entity	Y	
Routing Table Changes		
Name	Y	
Logical Sons	Y	

Table 9-9 IP Attribute Support on Redback Devices—Cisco ANA 3.6.5 (Continued)

Attribute	SE 800	SMS
IMO Name—IRoutingEntry		
Destination IP Subnet	Y	Y
Next Hop IP Address	Y	Y
Type	Y	Y
Routing Protocol Type	Y	Y
Outgoing Interface Name	Y	Y
IMO Name—IARPEntity		
ARP Table	Y	
IMO Name—IARPEntity		
IP Address	Y	
MAC Address	Y	
Port	Y	
Entry Type	Y	
IMO Name—IIPPool		
IP Address Pool Entries	Y	Y
Name	Y	Y
Index		
IMO Name—IIPRangeBasedIPPoolEntry		
Start IP Address		
End IP Address		
Unused Addresses		
Used Addresses		
Reserved Addresses		
IMO Name—IIPSubnetBasedIPPoolEntry		
IP Subnet	Y	Y
Unused Addresses	Y	Y
Used Addresses	Y	Y
Reserved Addresses	Y	Y
IMO Name—HSRPGroupEntry		
Group Number		
Port Description		
Priority		
Coupled Router		
State		
Tracking Interfaces		

Table 9-9 IP Attribute Support on Redback Devices—Cisco ANA 3.6.5 (Continued)

Attribute	SE 800	SMS
Virtual IP Address		
Virtual MAC Address		
IMO Name—I TunnelGRE		
Name		
Tunnel Destination and Source		
IP Address		
IP Interface State		
IANA Type		
Containing CTPs		
Contained CTPs		

Ethernet (IEEE 802.3)

Table 9-10 Ethernet (IEEE 802.3) Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—I LagPortEntry		
Actor and Partner Admin Keys		
Actor and Partner Oper Keys		
Selected and Attached Aggregation Identification		
Actor Port		
Actor Port Priority		
Partner Admin and Oper Port		
Partner Admin and Oper Port Priority		
Actor and Partner Admin States		
Actor and Partner Oper States		
IMO Name—I Ethernet		
MAC Address	Y	Y
Duplex Mode		
Output Flow Control		
Input Flow Control		
IANA Type		
Containing CTPs		
Contained CTPs		

Table 9-10 Ethernet (IEEE 802.3) Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—IVlanInterface		
Mode		
Native VLAN Identification		
Virtual LAN Table		
IANA Type		
Containing CTPs		
Contained CTPs		
IMO Name—IVlanEncapMux		
IANA Type		
Containing CTPs		
Contained CTPs		
IMO Name—IIEEE802		
VLAN Identification	Y	Y
Binding Information	Y ¹	Y
Binding Status	Y ²	Y
IANA Type	Y	
Containing CTPs		
Contained CTPs		
IMO Name—IStpService		
Protocol Type		
Current and Bridge Max Age		
Current and Bridge Hello Time		
Current and Bridge Forward Delay		
Instance Information Table		
Same as ISystemService		
IMO Name—IMstService		
Protocol Properties		
Same as IStpService		
IMO Name—IMstProperties		
Force Version		
Configuration Format, Region Name and Revision Level		
External Root Cost		
Maximum Instances		
IMO Name—IStpInstanceInfo		
Object Identification		

Table 9-10 Ethernet (IEEE 802.3) Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
Identification		
Priority		
Designated Parent and Root Bridges		
Root Cost		
Is Root		
Root Port Identification		
Port Information Table		
IMO Name—IMstInstanceInfo		
Instance Identification		
Same as IStpInstanceInfo		
IMO Name—IPvstpInstanceInfo		
Protocol Type		
Current and Bridg Maximum Age		
Current and Bridge Hello Time		
Current and Bridge Forward Delay		
Same as IStpInstanceInfo		
IMO Name—IRstpInstanceInfo		
Force Version		
Same as IStpInstanceInfo		
IMO Name—IStpPortInfo		
Object Identification		
Priority		
State		
Path Cost		
Is Edge		
Is Point to Point		
Role		
IMO Name—IMstPortInfo		
Hello Time		
Same as IStpPortInfo		
IMO Name—IEthernetChannel		
Group Number		
Bandwidth		
Aggregation Protocol		
IANA Type		

Table 9-10 Ethernet (IEEE 802.3) Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
Containing CTPs		
Contained CTPs		

¹No Subscriber binding info²No Subscriber binding info

ATM

Table 9-11 ATM Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—IAtm		
ATM Address		
Interface Type		
VP and VC Ranges	Y	Y
VC Table	Y	
Cross-Connect Table		
IANA Type	Y	
Containing CTPs		
Contained CTPs		
IMO Name—IAtmVc		
Virtual Channel Identifier	Y	
Virtual Path Identifier	Y	
Shaping Profile		
Discarded and Received Input Data Counters	Y	
Dropped and Forward Output Data Counters	Y	
Ingress Traffic Descriptor	Y	
Egress Traffic Descriptor	Y	
Administrative Status	Y	Y
Operational Status	Y	Y
IANA Type	Y	
Containing CTPs		
Contained CTPs		
IMO Name—IIMAGroup		
Description		

Table 9-11 ATM Attribute Support on Redback Devices—Cisco ANA 3.6.5 (Continued)

Attribute	SE 800	SMS
Speed		
Admin Status		
Oper Status		
Oper Status Last Change		
IANA Type		
Containing CTPs		
IMO Name—IAtmTrafficDescriptor		
Traffic Descriptor Type	Y	Y
Service Category	Y	Y
Cell Loss Priority	Y	Y
Cell Delay Variation	Y	Y
Cell Delay Variation Tolerance	Y	Y
Maximum High Priority and Aggregate Cell Rates	Y	Y
Minimum High Priority and Aggregate Cell Rates	Y	Y
Sustainable High Priority and Aggregate Cell Rates	Y	Y
Peak High Priority and Aggregate Cell Rates	Y	Y
Name	Y	Y
Index		Y
IMO Name—IAtmTrafficShapingDescriptor		
Maximum Burst Size		
Sustainable and Peak Cell Rates		
Cell Delay Variation		
State		
Buffer Size		
Cell Loss Priority Discarded Size		
Name		
Index		
IMO Name—IAtmTrunk		
Same as IAtm		
IMO Name—IAtmLogicalPort/Trunk		
Resource Management Cell Termination		
Resource Management Cell Generation		
Effective Check Input and Output Capacities		
Admin Status		
Oper Status		

Table 9-11 ATM Attribute Support on Redback Devices—Cisco ANA 3.6.5 (Continued)

Attribute	SE 800	SMS
Same as IAtm		
IMO Name—IAtmTrunkVc		
Destination Description		
Same as IAtmVc		

Frame Relay

Table 9-12 Frame Relay Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—Iframerelay/IFrTrunk		
Protocol Type		
VC Table		
Cross-Connect Table		
IANA Type		
Containing CTPs		
Contained CTPs		
IMO Name—IfrVc		
Data Link Connection Identifier		
Traffic Descriptor		
Discard and Received Input Data Counters		
Dropped and Forward Output Data Counters		
Ingress Traffic Descriptor		
Egress Traffic Descriptor		
Administrative Status		
Operational Status		
IANA Type		
Containing CTPs		
Contained CTPs		
IMO Name—IfrTrafficDescriptor		
Committed Rate		
Excess Burst Rate		
Name		
Index		

Table 9-12 **Frame Relay Attribute Support on Redback Devices—Cisco ANA 3.6.5 (Continued)**

Attribute	SE 800	SMS
IMO Name—IFrameRelayLogicalPort/Trunk		
Admin Status		
Oper Status		
Same as IFrameRelay		
IMO Name—IfrTrunkVc		
Destination Description		
Same as IFrVc		
IMO Name—IEncapsulation		
Virtual Connection Interface		Y
Binding Information		Y

Point to Point

Table 9-13 **Point to Point Attribute Support on Redback Devices—Cisco ANA 3.6.5**

Attribute	SE 800	SMS
IMO Name—IvcBasedEncapsulation		
Virtual Connection	Y	Y
Binding Information	Y	Y
Binding Status	Y	Y
IANA Type	Y	Y
Containing CTPs		
Contained CTPs		
IMO Name—Iencapsulation (HDLC/PPP)		
Virtual Connection		
Binding Information		
Binding Status		
IANA Type		
Containing CTPs		
Contained CTPs		

L2TP

Table 9-14 L2TP Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—IL2TPTunnel		
Local and Remote Tunnel Identifications	Y	Y
Local and Remote Tunnel Names		Y
Remote Address	Y	Y
Control Errors	Y	Y
Last Error Code		Y
Tunnel State	Y	Y
Sessions Count	Y	Y
Sessions Table	Y	Y
IMO Name—IL2TPSessionEntry		
Local and Remote Session Identification	Y	
Subscriber Name	Y	Y
Session Type		
Session State	Y	Y
Input and Output Data Counters		Y
IMO Name—IL2TPPeer		
Local and Peer Address	Y	Y
Local and Peer Names	Y	Y
Tunnel Type	Y	Y
Tunnel Mode		Y
Maximum and Current Tunnels Counts	Y	Y
Maximum and Current Sessions Count	Y	Y
Session Authentication Type		
Tunnel Password		
RADIUS Identification		
Hello Time Interval	Y	Y
Control Errors	Y	Y
Media Type		
Group Identification	Y	
Domain Table	Y	
Logical Sessions	Y	
IMO Name—IL2TPGroup		
Group Name	Y	Y

Table 9-14 L2TP Attribute Support on Redback Devices—Cisco ANA 3.6.5 (Continued)

Attribute	SE 800	SMS
Tunnel Algorithm	Y	Y
Dead Time	Y	Y
RADIUS Identification		
Peers List	Y	Y
Domains Table	Y	Y
Name	Y	
Index		
IMO Name—IL2TPDomainEntry		
Domain Name	Y	Y
Attached To Object	Y	
Name	Y	
Index		

Physical Technologies

Table 9-15 Physical Technologies Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—IsonetSdh		
Specific Type		
Loopback Type	Y	
Scrambling Mode	Y	
Same as IPhysicalLayer		
IMO Name—IDS0Bundle		
Bundled Time Slots		
Bundle Location		
IANA Type		
Containing CTPs		
Contained CTPs		
IMO Name—IDS1Pdh / IDS3Pdh		
Framing Type	Y	Y
Cell Mapping Type		Y
Loopback Type		Y
Scrambling Mode		Y
Same as IPhysicalLayer		

Physical Equipment

Table 9-16 *Physical Equipment Attribute Support on Redback Devices—Cisco ANA 3.6.5*

Attribute	SE 800	SMS
IMO Name—IChassis		
Description	Y	
Equipment Holder Type		Y
Contained Equipment Holders		
Contained Equipments		
IMO Name—IShelf		
Description		
Status		
Equipment Holder Type		
Contained Equipment Holders		
Contained Equipments		
IMO Name—IModule		
Module Name	Y	Y
Module Description	Y	Y
Software Version	Y	Y
Operational Status	Y	Y
Hardware Type + Version	Y	Y
Managed IP Address		
Redundant Equipment		
Configured Redundancy		
Redundancy Status		
Operational Status Last Changed		
Supported Physical Termination Points		
Serial Number (soft property)	Y	Y

Base Logical Components

Table 9-17 Base Logical Components Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—IManagedElement		
IP Address	Y	Y
Communication State	Y	Y
Investigation State	Y	Y
Element Category	Y	Y
Element Type and Key	Y	Y
Device Name	Y	Y
System Name	Y	Y
System Description	Y	Y
Up Time	Y	Y
Software Version	Y	Y
Vendor Identity	Y	Y
Memory and CPU Usage		
IMO Name—IContext		
Name	Y	Y
Bounded Connections		
IP Address Pools		
Forwarding Components List		
Traffic Descriptors List		
Tunnel Containers List		
Data Link Aggregation Containers List		
IMO Name—ISystemService		
Type		
Status		
Up Time		Y

Common

Table 9-18 Common Attribute Support on Redback Devices—Cisco ANA 3.6.5

Attribute	SE 800	SMS
IMO Name—IPhysicalLayer		
Media Type	Y	Y
Clocking Source	Y ³	Y
Maximum Speed	Y	Y
Is Internal Port	Y	Y
Discarded Bandwidth		
Dropped Bandwidth		
Input Bandwidth		
Output Bandwidth		
Discarded and Received Input Data Counters	Y	
Dropped and Forward Output Data Counters	Y	
Administrative Status	Y	Y
Operational Status	Y	Y
Last Changed	Y	Y
IANA Type	Y	Y
Containing CTPs		
Contained CTPs		
IMO Name—IBridge		
Bridge Table	Y	Y
Type	Y	Y
MAC Address		Y
IP Interface		Y
Name	Y	Y
Logical Sons		Y
IMO Name—IBridgeEntry		
Destination MAC	Y	Y
Outgoing Interface	Y	Y
IMO Name—IVcSwitchingEntity		
Cross Connect Table		
Logical Sons		

³Supported for Sonet Interfaces only