



CHAPTER 7

Support Information for RAD Devices

This chapter contains support information for Virtual Network Elements (VNEs) that manage RAD devices in Cisco ANA Version 3.7.2 and 3.7.3. For more information about the objects and attributes described in this chapter, see the [Cisco Active Network Abstraction 3.7.2 Reference Guide](#).

This chapter contains the following topics:

- [RAD ACE-3000 Cell-Site Gateway, page 7-1](#)
- [RAD ETX-Series Carrier Ethernet Demarcation Device, page 7-3](#)
- [RAD IPmux-4L TDM Pseudowire Access Gateway, page 7-4](#)
- [RAD LA-210 EFM DSL Network Termination Unit, page 7-5](#)
- [Supported Technologies on RAD Devices, page 7-7](#)

RAD ACE-3000 Cell-Site Gateway

This section includes the following information about RAD ACE-3000 Cell-Site Gateway devices (for information on the NE types supported in Cisco ANA Version 3.7.2 and 3.7.3, see [RAD ACE-3000 Cell-Site Gateway](#)):

- [RAD ACE CSG-Series—Supported Software Versions, page 7-1](#)
- [RAD ACE CSG-Series—Supported Topologies, page 7-2](#)
- [RAD ACE CSG-Series—Supported Modules, page 7-2](#)
- [RAD ACE CSG-Series—Supported Technologies, page 7-2](#)
- [RAD ACE CSG-Series—Supported Service Events, page 7-3](#)

RAD ACE CSG-Series—Supported Software Versions

Table 7-1 **Supported Software Versions for RAD CSG-Series—Cisco ANA Version 3.7.2 and 3.7.3**

Software Version	ANA Version	DP Version
RadOS V5.4	3.7.2	2.0
RadOS V6.1	3.7.2	2.0

RAD ACE CSG-Series—Supported Topologies

Table 7-2 Supported Topologies for RAD CSG-Series—Cisco ANA Version 3.7.2 and 3.7.3

Topology Type	Link Type	ANA Version	DP Version
Ethernet	Ethernet	3.7.2	1.0
ATM	ATM	3.7.2	2.0
ATM	PNNI	3.7.2	2.0
MPLS	MPLS	3.7.2	2.0
PWE3 (Martini)	Tunnel	3.7.2	2.0
GRE Tunnel	GRE Tunnel	3.7.2	2.0
Physical Layer	Physical Layer	3.7.2	2.0

RAD ACE CSG-Series—Supported Modules

Table 7-3 Supported Modules for RAD CSG-Series—Cisco ANA Version 3.7.2 and 3.7.3

Module Name	ANA Version	Module Description	DP Version
ACE-3205	3.7.2	Cell-Site Gateway	1.0
ACE-3105	3.7.2	Cell-Site Gateway	2.0
ACE-3100	3.7.2/3.7.3	Cell-Site Gateway	4.0
ACE-3200	3.7.2/3.7.3	Cell-Site Gateway	4.0

RAD ACE CSG-Series—Supported Technologies

The following technologies are supported by the RAD CSG-Series in Cisco ANA Version 3.7.2 and 3.7.3:

- [IP, page 7-7](#)
- [Ethernet \(IEEE 802.3\), page 7-9](#)
- [ATM, page 7-10](#)
- [DSL, page 7-11](#)
- [Physical Technologies, page 7-12](#)
- [MPLS, page 7-12](#)
- [PWE3, page 7-13](#)
- [Hardware, page 7-13](#)
- [Serial, page 7-14](#)
- [Additional Technologies, page 7-15](#)

RAD ACE CSG-Series—Supported Service Events

Table 7-4 Supported Service Events for RAD CSG-Series—Cisco ANA Version 3.7.2 and 3.7.3

Event Name	ANA Version	Expedited	DP Version
GRE tunnel down	3.7.2	N	3.0
GRE tunnel up	3.7.2	N	3.0
LDP neighbor down	3.7.2	N	2.0
LDP neighbor up	3.7.2	N	2.0
Link Down	3.7.2	N	2.0
Link up	3.7.2	N	2.0
BFD connectivity down	3.7.2	N	2.0
BFD connectivity up	3.7.2	N	2.0

RAD ETX-Series Carrier Ethernet Demarcation Device

This section includes the following information about RAD ETX-Series devices (for information on the NE types supported in Cisco ANA Version 3.7.2 and 3.7.3, see [RAD ETX-Series Carrier Ethernet Demarcation Device](#)):

- [RAD ETX-Series—Supported Software Versions, page 7-3](#)
- [RAD ETX-Series—Supported Modules, page 7-3](#)
- [RAD ETX-Series—Supported Technologies, page 7-4](#)
- [RAD ETX-Series—Supported Service Events, page 7-4](#)

RAD ETX-Series—Supported Software Versions

Table 7-5 Supported Software Versions for RAD ETX-Series—Cisco ANA Version 3.7.2 and 3.7.3

Software Version	ANA Version	DP Version
ETX V2.2	3.7.2	2.0

RAD ETX-Series—Supported Modules

Table 7-6 Supported Modules for RAD ETX-Series—Cisco ANA Version 3.7.2 and 3.7.3

Module Name	ANA Version	Module Description	DP Version
ETX-204AW (Wide Box)	3.7.2	Carrier Ethernet Demarcation Device	2.0
ETX-204 A (Short Box)	3.7.2/3.7.3	Carrier Ethernet Demarcation Device	4.0

RAD ETX-Series—Supported Technologies

The following technologies are supported by the RAD ETX-Series in Cisco ANA Version 3.7.2 and 3.7.3:

- [Ethernet \(IEEE 802.3ad\), page 7-8](#)
- [Ethernet \(IEEE 802.3\), page 7-9](#)
- [Hardware, page 7-13](#)
- [Serial, page 7-14](#)
- [Additional Technologies, page 7-15](#)

RAD ETX-Series—Supported Service Events

Table 7-7 Supported Service Events for RAD ETX-Series—Cisco ANA Version 3.7.2 and 3.7.3

Event Name	ANA Version	Expedited	DP Version
Link Down	3.7.2	N	2.0
Link Up	3.7.2	N	2.0

RAD IPmux-4L TDM Pseudowire Access Gateway

This section includes the following information about RAD IPmux-4L devices (for information on the NE types supported in Cisco ANA Version 3.7.2 and 3.7.3, see [RAD IPmux-4L TDM Pseudowire Access Gateway](#)):

- [RAD IPmux-4L—Supported Software Versions, page 7-5](#)
- [RAD IPmux-4L—Supported Modules, page 7-5](#)
- [RAD IPmux-4L—Supported Technologies, page 7-5](#)
- [RAD IPmux-4L—Supported Service Events, page 7-5](#)

RAD IPmux-4L—Supported Software Versions

Table 7-8 Supported Software Versions for RAD IPmux-4L—Cisco ANA Version 3.7.2 and 3.7.3

Software Version	ANA Version	DP Version
1.00	3.7.2	2.0

RAD IPmux-4L—Supported Modules

Table 7-9 Supported Modules for RAD IPmux-4L—Cisco ANA Version 3.7.2 and 3.7.3

Module Name	ANA Version	Module Description	DP Version
IPmux-4L	3.7.2	TDM Pseudowire Access Gateway. It also offers Ethernet based Access services	2.0

RAD IPmux-4L—Supported Technologies

The following technologies are supported by the RAD IPmux-4L in Cisco ANA Version 3.7.2 and 3.7.3:

- [Ethernet \(IEEE 802.3\), page 7-9](#)
- [Physical Technologies, page 7-12](#)
- [Hardware, page 7-13](#)
- [Serial, page 7-14](#)
- [Additional Technologies, page 7-15](#)

RAD IPmux-4L—Supported Service Events

Table 7-10 Supported Service Events for RAD IPmux-4L—Cisco ANA Version 3.7.2 and 3.7.3

Event Name	ANA Version	Expedited	DP Version
Link Down	3.7.2	N	2.0
Link Up	3.7.2	N	2.0

RAD LA-210 EFM DSL Network Termination Unit

This section includes the following information about RAD LA-210 devices (for information on the NE types supported in Cisco ANA Version 3.7.2 and 3.7.3, see [RAD LA-210 EFM DSL Network Termination Unit](#)):

- [RAD LA-210—Supported Software Versions, page 7-6](#)
- [RAD LA-210—Supported Modules, page 7-6](#)
- [RAD LA-210—Supported Technologies, page 7-6](#)
- [RAD LA-210—Supported Service Events, page 7-6](#)

RAD LA-210—Supported Software Versions

Table 7-11 Supported Software Versions for RAD LA-210—Cisco ANA Version 3.7.2 and 3.7.3

Software Version	ANA Version	DP Version
LA-210 V2.6	3.7.2	2.0
LA-210 V2.7	3.7.2	2.0

RAD LA-210—Supported Modules

Table 7-12 Supported Modules for RAD LA-210—Cisco ANA Version 3.7.2 and 3.7.3

Module Name	ANA Version	Module Description	DP Version
LA-210	3.7.2	EFM DSL Network Termination Unit	2.0

RAD LA-210—Supported Technologies

The following technologies are supported by the RAD LA-210 in Cisco ANA Version 3.7.2 and 3.7.3:

- [Ethernet \(IEEE 802.3\), page 7-9](#)
- [DSL, page 7-11](#)
- [Physical Technologies, page 7-12](#)
- [Hardware, page 7-13](#)
- [Serial, page 7-14](#)
- [Additional Technologies, page 7-15](#)

RAD LA-210—Supported Service Events

Table 7-13 Supported Service Events for RAD LA-210—Cisco ANA Version 3.7.2 and 3.7.3

Event Name	ANA Version	Expedited	DP Version
Link Down	3.7.2	N	2.0
Link Up	3.7.2	N	2.0

Supported Technologies on RAD Devices

The following sections list the objects and attributes that are supported on RAD devices in Cisco ANA Version 3.7.2 and 3.7.3 per technology:

- [IP, page 7-7](#)

- [Ethernet \(IEEE 802.3ad\), page 7-8](#)
- [Ethernet \(IEEE 802.3\), page 7-9](#)
- [ATM, page 7-10](#)
- [DSL, page 7-11](#)
- [Physical Technologies, page 7-12](#)
- [MPLS, page 7-12](#)
- [PWE3, page 7-13](#)
- [Hardware, page 7-13](#)
- [Serial, page 7-14](#)
- [Additional Technologies, page 7-15](#)

IP

Table 7-14 *IP Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3*

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IIPInterface				
IP Address	Y			
Subnetwork Mask	Y			
Interface Name	Y			
IP Interface State	Y			
IMO Name—IRoutingEntity				
Routing Table	Y			
Destination IP Subnet	Y			
Next Hop IP Address	Y			
Type	Y			
Routing Protocol Type	Y			
Outgoing Interface Name	Y			
IMO Name—ITunnelGRE				
Name	Y			
Tunnel Destination and Source	Y			
IP Address	Y			

Ethernet (IEEE 802.3ad)

Table 7-15 Ethernet (IEEE 802.3ad) Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—ILinkAggregationGroup802dot3ad				
dot3adAggMACAddress				Y
dot3adAggActorSystemPriority				Y
dot3adAggActorSystemID				Y
dot3adAggActorAdminKey				Y
dot3adAggActorOperKey				Y
dot3adAggPartnerSystemID				Y
dot3adAggPartnerSystemPriority				Y
dot3adAggPartnerOperKey				Y
GroupNumber				Y
AggregationProtocolType				Y
MacAddress				Y
ChannelAdminStatus				Y
ChannelOperStatus				Y
IMO Name—I LagPortEntry				
Actor and Partner Admin Keys				
Actor and Partner Oper Keys				Y
Selected and Attached Aggregation Identification				Y
Actor Port				Y
Actor Port Priority				Y
Partner Admin and Oper Port ¹				Y
Partner Admin and Oper Port Priority ²				Y
Actor and Partner Admin States				Y
Actor and Partner Oper States				Y

1. ETX-Series supports only Partner Oper Port.

2. ETX-Series supports only Partner Oper Port Priority.

Ethernet (IEEE 802.3)

Table 7-16 Ethernet (IEEE 802.3) Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IEthernet				
MAC Address	Y		Y	Y
Duplex Mode	Y	Y	Y	Y
IMO Name—IVlanInterface				
Mode		Y	Y	
Virtual LAN Table		Y	Y	
IANA Type		Y	Y	
vlanencapType		Y	Y	
IMO Name—IIEEE802				
VLAN Identification		Y	Y	

ATM

Table 7-17 ATM Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IAtm				
VC Table	Y			
Cross-Connect Table	Y			
IMO Name—IAtmVc				
Virtual Channel Identifier	Y			
Virtual Path Identifier	Y			
Operational Status	Y			
IMO Name—IIMAGroup				
Description	Y			
Admin Status	Y			

Table 7-17 ATM Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
Oper Status	Y			
Oper Status Last Change	Y			
GroupNumber	Y			
ImaVersion	Y			
ConfiguredBandwidth	Y			
NumberOfLinks	Y			
NumberOfActiveLinks	Y			
MinimumNumberOfTxLinks	Y			
MinimumNumberOfRxLinks	Y			
ClockMode	Y			
FrameLength	Y			
interfaceName	Y			
groupStatus	Y			
IANA Type	Y			
IMO Name—IAtmTrafficDescriptor				
Traffic Descriptor Type	Y			
Service Category	Y			
Cell Loss Priority	Y			
Cell Delay Variation Tolerance	Y			
Maximum High Priority and Aggregate Cell Rates	Y			
Minimum High Priority and Aggregate Cell Rates	Y			
Sustainable High Priority and Aggregate Cell Rates	Y			
Peak High Priority and Aggregate Cell Rates	Y			
Index	Y			

DSL

Table 7-18 DSL Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IDsl / Ildsl / ISdsl / Ishdsl				
Same as IPhysicalLayer	Y		Y	
IMO Name—IADsl				
Same as IDsl	Y			
IMO Name—IADsl2				
Same as IADsl	Y			

Physical Technologies

Table 7-19 *Physical Technologies Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3*

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IDS1Pdh / IDS3Pdh				
Framing Type	Y	Y		
Loopback Type	Y	Y		
Same as IPhysicalLayer	Y	Y		

MPLS

Table 7-20 *MPLS Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3*

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—ILse				
LDP Service	Y			
IMO Name—ILdpService				
Local Identification Status	Y			
LDP Peers	Y			
IMO Name—ILdpPeer				
Peer Identification	Y			
Distribution Method	Y			
Protocol Type	Y			
Session Status	Y			
Protocol Version Hold Time	Y			
Hold Time	Y			
Hello Time Interval	Y			

PWE3

Table 7-21 PWE3 Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IPTPLayer2MplsTunnel				
Local and Remote Router Addresses	Y			
Local and Remote Virtual Connection Labels	Y			
Tunnel Identification	Y			
Tunnel Status	Y			
PsuedowireType	Y			
LocalMTU	Y			
RemoteMTU	Y			
SignalingProtocol	Y			

Hardware

Table 7-22 Physical Equipment Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IChassis				
Description	Y	Y	Y	Y
Equipment Holder Type	Y	Y	Y	Y
IMO Name—IModule				
Module Name	Y	Y	Y	Y
Module Description	Y	Y	Y	Y
Software Version	Y	Y	Y	Y
Operational Status	Y	Y	Y	Y
Hardware Type & Version	Y	Y	Y	Y
IMO Name—IManagedElement				
IP Address	Y	Y	Y	Y

Table 7-22 *Physical Equipment Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3 (Continued)*

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
Communication State	Y	Y	Y	Y
Investigation State	Y	Y	Y	Y
Element Category	Y	Y	Y	Y
Element Type and Key	Y	Y	Y	Y
Device Name	Y	Y	Y	Y
System Name	Y	Y	Y	Y
System Description	Y	Y	Y	Y
Up Time	Y	Y	Y	Y
Software Version	Y	Y	Y	Y
Vendor Identity	Y	Y	Y	Y
Sys Contact	Y	Y	Y	Y
Sys Location	Y	Y	Y	Y

Serial

Table 7-23 *Common Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3*

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IPhysicalLayer				
Media Type	Y	Y	Y	
Clocking Source	Y	Y		
Maximum Speed	Y	Y	Y	Y
Administrative Status	Y	Y	Y	Y
Operational Status	Y	Y	Y	Y
IANA Type	Y	Y	Y	Y
Connector Description	Y	Y	Y	Y
IMO Name—IBridge				

Table 7-23 Common Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
Type		Y	Y	
Name		Y	Y	
IMO Name—IVcSwitchingEntity				
Cross Connect Table	Y			

Additional Technologies

Table 7-24 Additional Technologies Attribute Support on RAD Devices—Cisco ANA Version 3.7.2 and 3.7.3

Attributes	ACE CSG-Series	IPmux-4L	LA-210	ETX-Series
IMO Name—IPower Supply				
Voltage names	Y	Y	Y	Y
Voltage Description	Y	Y	Y	Y
Voltage Status	Y	Y	Y	Y
Voltage Type	Y	Y	Y	Y
IMO Name—IFan				
Fan Name	Y			Y
Fan Value	Y			Y
IMO Name—IIMAGroup				
Ima Group Rx Speed	Y			
Ima Group Tx Speed	Y			
IMO Name—IADSL2+				
Adsl2+ Maximum Rx Speed	Y			
Adsl2+ Maximum Tx Speed	Y			
IMO Name—ISHDSL				
Shdsl Speed	Y			

