



## XML Support for BNG Features

Most BNG features, such as AAA, DHCP, Policy Plane, PPPoE, DAPS, and Subscriber Database support XML based router configuration. The Cisco XML API can be used to configure routers or request information about configuration, management, and operation of the routers. For details about using the Cisco XML API, see the latest release of *Cisco IOS XR XML API Guide* listed at [http://www.cisco.com/en/US/products/ps9853/products\\_programming\\_reference\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps9853/products_programming_reference_guides_list.html).

The Cisco XML API uses XML commands to configure the router. The following sections list the supported XML commands for the BNG features.

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## AAA XML Support

The support for XML is available for RADIUS that retrieves the accounting and authorization request statistics. The mapping between CLI and XML entries for the AAA commands are as follows:

| CLI   | XML                            |
|---|--------------------------------|
| <b>radius-server dead-criteria time</b>       | AAA.RADIUS. DeadCriteria.Time  |
| <b>radius-server dead-criteria tries</b>      | AAA.RADIUS. DeadCriteria.Tries |
| <b>radius-server ipv4 dscp &lt;value&gt;</b>  | AAA.RADIUS. IPv4.DSCP          |
| <b>radius-server key {0   7   LINE}</b>       | AAA.RADIUS.Key                 |
| <b>radius-server retransmit &lt;limit&gt;</b> | AAA.RADIUS.Retransmit          |

| CLI  | XML  |
|--|--|
| <b>radius-server timeout &lt;number&gt;</b>  | AAA.RADIUS.Timeout   |
| <b>radius-server source-port extended</b>  | AAA.RADIUS.SourcePort.Extended                               |
| <b>radius-server deadtime</b>  | AAA.RADIUS.DeadTime  |
| <b>radius-server load-balance method least-outstanding</b>   | AAA.RADIUS.LoadBalance.Method.LeastOutstanding               |
| <b>radius-server attribute list &lt;attribute-name&gt;</b>   | AAA.RADIUS.AttributeListTable.AttributeList.Enable           |
| <b>radius-server attribute list &lt;attribute-name&gt; attribute &lt;radius-attributes&gt;</b>                   | AAA.RADIUS.AttributeListTable.AttributeList.Attribute        |
| <b>radius-server vsa attribute ignore unknown</b>  | AAA.RADIUS.VSA.Attribute.Ignore.Unknown                      |
| <b>Radius-server host &lt;&gt; retransmit</b>  | AAA.RADIUS.HostTable.Host.Retransmit                         |
| <b>Radius-server host &lt;&gt; timeout</b>   | AAA.RADIUS.HostTable.Host.Timeout                            |
| <b>radius-server host &lt;&gt; key {0   7   LINE}</b>  | AAA.RADIUS.HostTable.Host.Key                                |
| <b>aaa server radius dynamic-author client &lt;ip-address&gt; vrf &lt;vrf-name&gt; server-key {0   7   LINE}</b> | AAA.RADIUS.DynamicAuthorization.ClientTable.Client.ServerKey |
| <b>aaa server radius dynamic-author ignore {server key   session key }</b>                                       | AAA.RADIUS.DynamicAuthorization.Ignore                       |
| <b>aaa server radius dynamic-author port &lt;port num&gt;</b>  | AAA.RADIUS.DynamicAuthorization.Port                         |

| CLI   | XML  |
|---|--|
| <b>aaa accounting<br/>system default<br/>start-stop<br/>[broadcast] {group<br/>{radius  <br/>NAME1}} [group<br/>NAME2..] aaa<br/>accounting system<br/>rp-failover default<br/>start-stop<br/>[broadcast] {group<br/>{radius  <br/>NAME1}} [group<br/>NAME2..</b> | AAA.AccountingTable.Accounting   |
| <b>aaa radius<br/>attribute<br/>nas-port-id format<br/>FORMAT_NAME</b>  | AAA.RADIUSAttribute.NASPortID.Format   |
| <b>aaa group server<br/>radius<br/>&lt;group-name&gt; {<br/>authorization } {<br/>reply   reject}<br/>&lt;name&gt;</b>  | AAA.ServerGroups.RADIUSServerGroupTable.RADIUSServerGroup.Authorization.Reply              |
| <b>aaa group server<br/>radius<br/>&lt;group-name&gt; {<br/>authorization } {<br/>accept   request }<br/>&lt;name&gt;</b>   | AAA.ServerGroups.RADIUSServerGroupTable.RADIUSServerGroup.Authorization.Request            |
| <b>aaa group server<br/>radius<br/>&lt;group-name&gt; {<br/>accounting } {<br/>accept   request}<br/>&lt;name&gt;</b>   | AAA.ServerGroups.RADIUSServerGroupTable.RADIUSServerGroup.Accounting.Request               |
| <b>aaa group server<br/>radius<br/>&lt;group-name&gt; {<br/>accounting } {<br/>reply   reject}<br/>&lt;name&gt;</b>   | AAA.ServerGroups.RADIUSServerGroupTable.RADIUSServerGroup.Accounting.Reply                 |
| <b>aaa group server<br/>radius<br/>&lt;group-name&gt;<br/>load-balance</b>  | AAA.ServerGroups.RADIUSServerGroupTable.RADIUSServerGroup.LoadBalance.Method.LeastBounding |

| CLI   | XML  |
|---|--|
| <b>method<br/>least-bounding</b>  |  |
| <b>aaa group server<br/>radius group1<br/>source-interface</b>                    | AAA.ServerGroups.RADIUSServerGroupTable.RADIUSServerGroup.SourceInterface      |
| <b>aaa group server<br/>radius<br/>&lt;radius-group&gt;<br/>vrf &lt;&gt;</b>      | AAA.ServerGroups.RADIUSServerGroupTable.RADIUSServerGroup.VRF                  |
| <b>aaa group server<br/>radius<br/>&lt;radius-group&gt;<br/>deadtime &lt;&gt;</b> | AAA.ServerGroups.RADIUSServerGroupTable.RADIUSServerGroup.DeadTime             |
| <b>aaa group server<br/>radius &lt;&gt;<br/>server-private<br/>&lt;host&gt;</b>   | AAA.ServerGroups.RADIUSGroupTable.RADIUSGroup.PrivateServerTable.PrivateServer |
| <b>show radius<br/>accounting</b>   | RADIUS.Accounting  |
| <b>show radius<br/>authentication</b>   | RADIUS.Authentication  |
| <b>show radius client</b>   | RADIUS.Client  |
| <b>show radius<br/>dynamic-author</b>   | RADIUS.DynamicAuthorization  |
| <b>show radius<br/>dead-criteria host<br/>&lt;ip&gt;</b>                          | RADIUS.DeadCriteria.HostTable.Host   |
| <b>show radius<br/>server-groups</b>  | RADIUS.ServerGroups  |

## DHCP XML Support

The support for XML is available for DHCP that retrieves the client bindings, profile information, and DHCPv4 proxy statistics. It allows the management clients to perform client bindings based on Circuit-ID, Remote-ID, Mac-Address, user profile information, and DHCPv4 proxy statistics. The mapping between CLI and XML entries for the DHCP commands are as follows:

| CLI   | XML  |
|---|--|
| <b>dhcp ipv4 profile<br/>&lt;name&gt; proxy<br/>relay information<br/>check</b> | DHCPv4.ProfileTable.Profile.Proxy.RelayInformation.Check |

| CLI  | XML  |
|--|--|
| <b>dhcp ipv4 profile</b><br><b>&lt;name&gt;proxy</b><br><b>relay information</b><br><b>option[vpn  </b><br><b>allow-untrusted  </b><br><b>remote-id</b><br><b>&lt;name&gt;]</b>  | DHCPv4.ProfileTable.Profile.Proxy.RelayInformation.AllowUntrusted<br>DHCPv4.ProfileTable.Profile.Proxy.RelayInformation.VPN<br>DHCPv4.ProfileTable.Profile.Proxy.RelayInformation.RemoteID   |
| <b>dhcp ipv4</b><br><b>interface</b><br><b>GigabitEthernet</b><br><b>&lt;interface-name&gt;</b><br><b>proxy profile</b><br><b>&lt;name&gt;</b>   | DHCPv4.InterfaceTable.Interface.Proxy.Profile  |
| <b>dhcp ipv4 profile</b><br><b>&lt;name&gt;proxy</b><br><b>relay information</b><br><b>policy [drop   keep</b><br><b>  replace]</b>  | DHCPv4.ProfileTable.Profile.Proxy.RelayInformation.Policy  |
| <b>dhcp ipv4 profile</b><br><b>&lt;name&gt;proxy</b><br><b>helper-address [</b><br><b>vrf &lt;name&gt; ]</b><br><b>&lt;server-ip-addr&gt;</b><br><b>[ giaddr &lt;ip-addr&gt;</b><br><b>]</b>   | DHCPv4.ProfileTable.Profile.Proxy.VRFTTable.VRF.HelperAddressTable.HelperAddress   |
| <b>dhcp ipv4 profile</b><br><b>&lt;name&gt; proxy</b><br><b>broadcast-flag</b><br><b>policy check</b>  | DHCPv4.ProfileTable.Profile.Proxy.BroadcastFlag.Policy   |
| <b>dhcp ipv4 profile</b><br><b>&lt;name&gt;proxy</b><br><b>class &lt;class-name&gt;</b><br><b>helper-address</b><br><b>[vrf &lt;name&gt;]</b><br><b>&lt;server-ip-addr&gt;</b><br><b>[ giaddr &lt;ip-addr&gt;</b><br><b>] match vrf</b><br><b>&lt;name&gt; match</b><br><b>option [ 124   125  </b><br><b>60   77 ] hex</b><br><b>&lt;value&gt; [ mask</b><br><b>&lt;value&gt; ]</b> | DHCPv4.ProfileTable.Profile.Proxy.ClassTable.Class<br>DHCPv4.ProfileTable.Profile.Proxy.ClassTable.Class.VRFTTable.VRF.HelperAddressTable.HelperAddress<br>DHCPv4.ProfileTable.Profile.Proxy.ClassTable.Class.Match.VRF<br>DHCPv4.ProfileTable.Profile.Proxy.ClassTable.Class.Match.Option |
| <b>dhcp ipv4</b><br><b>interface</b><br><b>&lt;interface&gt; none</b>  | DHCPv4.InterfaceTable.Interface.None   |

| CLI   | XML  |
|---|--|
| <b>dhcp ipv4 interface</b><br><b>&lt;interface&gt; proxy</b><br><b>[information</b><br><b>option format-type</b><br><b>circuit-id &lt;cir-id&gt;]</b> | DHCPv4.InterfaceTable.Interface.Proxy.CircuitID  |
| <b>dhcp ipv4 vrf</b><br><b>vrfname proxy</b><br><b>profile &lt;name&gt;</b>   | DHCPv4.VRFTable.VRF  |
| <b>show dhcp ipv4 proxy binding</b><br><b>circuit-id &lt;cid&gt;</b><br><b>location</b><br><b>&lt;locationSpecifier&gt;</b>                           | DHCPv4.NodeTable.Node.Proxy.Binding.ClientTable[DHCPv4ProxyCircuitIDFilter (Naming C   |
| <b>show dhcp ipv4 proxy binding</b><br><b>remote-id &lt;rid&gt;</b><br><b>location</b><br><b>&lt;locationSpecifier&gt;</b>                            | DHCPv4.NodeTable.Node.Proxy.Binding.ClientTable[DHCPv4ProxyRemoteIDFilter (Naming Re   |
| <b>show dhcp ipv4 proxy binding</b><br><b>interface</b><br><b>&lt;ifSpecifier&gt;</b>   | DHCPv4.NodeTable.Node.Proxy.Binding.ClientTable[DHCPv4ProxyInterfaceFilter (Naming Int |
| <b>show dhcp ipv4 proxy binding</b><br><b>mac-address</b><br><b>&lt;addr&gt; location</b><br><b>&lt;locationSpecifier&gt;</b>                         | DHCPv4.NodeTable.Node.Proxy.Binding.ClientTable[DHCPv4ProxyMACAddressFilter (Naming    |
| <b>show dhcp ipv4 proxy binding</b><br><b>location</b><br><b>&lt;locationSpecifier&gt;</b>  | DHCPv4.NodeTable.Node.Proxy.Binding.ClientTable[DHCPv4ProxyBriefFilter]                |
| <b>show dhcp ipv4 proxy binding</b><br><b>detail location</b><br><b>&lt;locationSpecifier&gt;</b>   | DHCPv4.NodeTable.Node.Proxy.Binding.ClientTable.Client                                 |
| <b>show dhcp ipv4 proxy binding</b><br><b>summary location</b><br><b>&lt;locationSpecifier&gt;</b>  | DHCPv4.NodeTable.Node.Proxy.Binding.Summary  |
| <b>show dhcp ipv4 proxy binding vrf</b><br><b>&lt;vrfname&gt;</b>   | DHCPv4.NodeTable.Node.Proxy.Binding.ClientTable[DHCPv4PProxyVRFFilter (Naming VRFName  |

| CLI  | XML   |
|--|---|
| <b>show dhcp ipv4 proxy profile name</b><br><profile-name><br><b>location</b><br><locationSpecifier>     | DHCPv4.NodeTable.Node.Proxy.ProfileTable.Profile    |
| <b>show dhcp vrf</b><br><name> ipv4<br><b>proxy statistics</b><br><b>location</b><br><locationSpecifier> | DHCPv4.NodeTable.Node.Proxy.VRFTable.VRF.Statistics |
| <b>show dhcp ipv4 proxy statistics [ location &lt; loc &gt; ]</b>  | DHCPv4.NodeTable.Node.Proxy.Statistics              |

## Control Policy XML Support

The support for XML is available for policy plane that retrieves subscriber management and subscriber session related information. The mapping between CLI and XML entries for the control policy commands are as follows:

| CLI  | XML  |
|--|--|
| <b>interface</b><br><intf><br><b>service-policy type control subscriber</b><br><policy-name> | InterfaceConfigurationTable.InterfaceConfiguration.ControlSubscriber.ServicePolicy                     |
| <b>sh sub sess all loc &lt;loc&gt;</b>   | Subscriber.Session.NodeTable.Node.SessionTable   |
| <b>sh sub sess all detail loc &lt;loc&gt;</b>  | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberDetailAllSessionFilter)                      |
| <b>sh sub sess all summary loc &lt;loc&gt;</b>   | Subscriber.Session.NodeTable.Node.Summary  |
| <b>sh sub sess all username loc &lt;loc&gt;</b>  | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberAllUsernameFilter)                           |
| <b>sh sub sess filter interface</b>  | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberInterfaceBriefFilter) {Naming InterfaceName} |

| CLI   | XML   |
|---|---|
| <b>&lt;intf-name&gt;</b><br><b>loc &lt;loc&gt;</b>  |   |
| <b>sh sub sess</b><br><b>filter</b><br><b>interface</b><br><b>&lt;intf-name&gt;</b><br><b>detail loc</b><br><b>&lt;loc&gt;</b>    | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberInterfaceDetailFilter)<br>{Naming InterfaceName}          |
| <b>sh sub sess</b><br><b>filter</b><br><b>ipv4-address</b><br><b>&lt;IPv4-addr&gt;</b><br><b>loc &lt;loc&gt;</b>                  | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberIPv4AddressVRFDetailFilter)<br>{Naming VRF Name, Address} |
| <b>sh sub sess</b><br><b>filter</b><br><b>ipv4-address</b><br><b>&lt;IPv4-addr&gt;</b><br><b>detail loc</b><br><b>&lt;loc&gt;</b> | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberIPv4AddressVRFBriefFilter)<br>{Naming VRF Name, Address}  |
| <b>sh sub sess</b><br><b>filter</b><br><b>mac-address</b><br><b>&lt;mac-addr&gt;</b><br><b>loc &lt;loc&gt;</b>                    | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberMACAddressBriefFilter)<br>{Naming MACAddress}             |
| <b>sh sub sess</b><br><b>filter</b><br><b>mac-address</b><br><b>&lt;mac-addr&gt;</b><br><b>detail loc</b><br><b>&lt;loc&gt;</b>   | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberMACAddressDetailFilter)<br>{Naming MACAddress}            |
| <b>sh sub sess</b><br><b>filter state</b><br><b>&lt;state&gt; loc</b><br><b>&lt;loc&gt;</b>                                       | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberStateBriefFilter) {Naming<br>State}                       |
| <b>sh sub sess</b><br><b>filter state</b><br><b>&lt;state&gt; detail</b><br><b>loc &lt;loc&gt;</b>                                | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberStateDetailFilter) {Naming<br>State}                      |
| <b>sh sub sess</b><br><b>filter</b><br><b>username</b><br><b>&lt;uname&gt; loc</b><br><b>&lt;loc&gt;</b>                          | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberUsernameBriefFilter) {Naming<br>Username}                 |
| <b>sh sub sess</b><br><b>filter</b>   | Subscriber.Session.NodeTable.Node.SessionTable (SubscriberUsernameDetailFilter) {Naming<br>Username}                |



| CLI   | XML   |
|---|---|
| <b>username</b><br><b>&lt;uname&gt;</b><br><b>detail loc</b><br><b>&lt;loc&gt;</b>  |   |
| <b>sh sub sess</b><br><b>filter</b><br><b>ipv4-address</b><br><b>&lt;IPv4 addr&gt;</b><br><b>vrf &lt;vrf&gt; loc</b><br><b>&lt;loc&gt;</b>                  | Subscriber.Session.NodeTable.Node.SessionTable(SubscriberIPv4AddressVRFBriefFilter)<br>{Naming VRF Name, Address}   |
| <b>sh sub sess</b><br><b>filter</b><br><b>ipv4-address</b><br><b>&lt;IPv4-addr&gt;</b><br><b>vrf &lt;vrf&gt;</b><br><b>detail loc</b><br><b>&lt;loc&gt;</b> | Subscriber.Session.NodeTable.Node.SessionTable(SubscriberIPv4AddressVRFDetailFilter)<br>{Naming VRF Name, Address}  |
| <b>sh sub sess</b><br><b>filter vrf</b><br><b>&lt;vrf-name&gt;</b><br><b>loc &lt;loc&gt;</b>  | Subscriber.Session.NodeTable.Node.SessionTable(SubscriberIPv4AddressVRFBriefFilter)<br>{Naming VRF Name, Address }  |
| <b>sh sub sess</b><br><b>filter vrf</b><br><b>&lt;vrf-name&gt;</b><br><b>detail loc</b><br><b>&lt;loc&gt;</b>   | Subscriber.Session.NodeTable.Node.SessionTable(SubscriberIPv4AddressVRFDetailFilter)<br>{Naming VRF Name, Address } |
| <b>sh sub sess</b><br><b>sub-label</b><br><b>&lt;0-ffffff&gt;</b><br><b>loc &lt;loc&gt;</b>   | Subscriber.Session.NodeTable.Node.SessionTable.Session{Naming SessionID}  |
| <b>sh sub man</b><br><b>stat AAA</b><br><b>accounting</b><br><b>loc &lt;loc&gt;</b>   | Subscriber.Manager.NodeTable.Node.Statistics.AAA.Accounting   |
| <b>sh sub man</b><br><b>stat AAA</b><br><b>accounting</b><br><b>total loc &lt;loc&gt;</b>   | Subscriber.Manager.NodeTable.Node.Statistics.AAA.AggregateAccounting  |
| <b>sh sub man</b><br><b>stat AAA</b><br><b>authentication</b><br><b>loc &lt;loc&gt;</b>   | Subscriber.Manager.NodeTable.Node.Statistics.AAA.Authentication   |
| <b>sh sub man</b><br><b>stat AAA</b>  | Subscriber.Manager.NodeTable.Node.Statistics.AAA.AggregateAuthentication  |

| CLI  | XML   |
|--|---|
| <b>authentication<br/>total loc &lt;loc&gt;</b>                            |   |
| <b>sh sub man<br/>stat AAA<br/>authorization<br/>loc &lt;loc&gt;</b>       | Subscriber.Manager.NodeTable.Node.Statistics.AAA.Authorization                  |
| <b>sh sub man<br/>stat AAA<br/>authorization<br/>total loc &lt;loc&gt;</b> | Subscriber.Manager.NodeTable.Node.Statistics.AAA.AggregateAuthorization         |
| <b>sh sub man<br/>stat AAA<br/>COA loc<br/>&lt;loc&gt;</b>                 | Subscriber.Manager.NodeTable.Node.Statistics.AAA.ChangeOfAuthorization          |
| <b>sh sub man<br/>stat AAA<br/>COA total loc<br/>&lt;loc&gt;</b>           | Subscriber.Manager.NodeTable.Node.Statistics.AAA.AggregateChangeOfAuthorization |
| <b>sh sub man<br/>stat AAA all<br/>loc &lt;loc&gt;</b>                     | Subscriber.Manager.NodeTable.Node.Statistics.AAA                                |
| <b>sh sub man<br/>stat AAA all<br/>total loc &lt;loc&gt;</b>               | Subscriber.Manager.NodeTable.Node.Statistics.AAA                                |
| <b>sh sub man<br/>stats<br/>summary<br/>total &lt;loc&gt;</b>              | Subscriber.Manager.NodeTable.Node.Statistics.AggregateSummary                   |

## DAPS XML Support

The support for XML is available for distributed address pool service (DAPS) that retrieves the pool parameters for distributed address pool services, and allows the management clients to get number of free, allocated and excluded addresses based on VRF and pool name. The mapping between CLI and XML entries for the DAPS commands are as follows:

| CLI   | XML   |
|---|---|
| <b>pool vrf &lt;vrf-name&gt; ipv4 &lt;poolname&gt;pool ipv4<br/>&lt;poolname&gt;</b>  | PoolService.VRFTable.VRF.IPv4.Pool.Enable                         |
| <b>pool vrf &lt;VRFName&gt; ipv4 &lt;PoolName&gt; *<br/>address-range &lt;RangeStart&gt; &lt;RangeEnd&gt;pool<br/>ipv4 &lt;PoolName&gt; * address-range &lt;RangeStart&gt;<br/>&lt;RangeEnd&gt;</b> | PoolService.VRFTable.VRF.IPv4.Pool.AddressRangeTable.AddressRange |

| CLI  | XML   |
|--|---|
| <b>pool vrf</b> <VRFName> <b>ipv4</b> <PoolName> * <b>exclude</b> <RangeStart> <RangeEnd> <b>pool vrf</b> <VRFName> <b>ipv4</b> <PoolName> * <b>exclude</b> <RangeStart> <RangeEnd> <b>pool ipv4</b> <PoolName> * <b>exclude</b> <RangeStart> <RangeEnd> | PoolService.VRFTable.VRF.IPv4.Pool.ExcludeTable.Exclude |
| <b>Pool vrf</b> <VRFName> <b>ipv4</b> <PoolName> <b>utilization-mark high</b> <> <b>pool ipv4</b> <PoolName> <b>utilization-mark high</b> <>   | PoolService.VRFTable.VRF.IPv4.Pool.UtilizationMark.High |
| <b>Pool vrf</b> <VRFName> <b>ipv4</b> <PoolName> <b>utilization-mark low</b> <> <b>pool ipv4</b> <PoolName> <b>utilization-mark low</b> <>   | PoolService.VRFTable.VRF.IPv4.Pool.UtilizationMark.Low  |
| <b>show pool vrf</b> <vrf-name> <b>ipv4</b>  | PoolService.NodeTable.Node.VRFTable.VRF.IPv4            |
| <b>show pool ipv4 name</b> <poolname>  | PoolService.NodeTable.Node.PoolTable.Pool.IPv4.Detail   |
| <b>show pool ipv4 name</b> <poolname> <b>verbose</b>   | PoolService.NodeTable.Node.PoolTable.Pool.IPv4.Verbose  |
| <b>show pool ipv4</b> <b>show pool vrf all ipv4</b>  | PoolService.NodeTable.Node.VRFTable                     |

## PPPoE XML Support

XML support is available for PPP over Ethernet (PPPoE) sessions. The mapping between CLI and XML entries for the PPPoE feature commands are:

| CLI  | XML  |
|--|--|
| <b>pado delay</b> {<delay>}                                  | set PadoDelay.Default {<delay>}                        |
| <b>pado delay circuit-id</b> {<delay>}                       | set PadoDelay.CircuitId {<delay>}                      |
| <b>pado delay remote-id</b> {<delay>}                        | set PadoDelay.RemoteId {<delay>}                       |
| <b>pado delay circuit-id string</b> {<string>} {<delay>}     | set PadoDelay.CircuitIdString{<string>} {<delay>}      |
| <b>pado delay circuit-id contains</b> {<string>} {<delay>}   | set PadoDelay.CircuitIdSubString{<string>} {<delay>}   |
| <b>pado delay remote-id string</b> {<string>} {<delay>}      | set PadoDelay.RemoteIdString{<string>} {<delay>}       |
| <b>pado delay remote-id contains</b> {<string>} {<delay>}    | set PadoDelay.RemoteIdSubString{<string>} {<delay>}    |
| <b>pado delay service-name string</b> {<string>} {<delay>}   | set PadoDelay.ServiceNameString{<string>} {<delay>}    |
| <b>pado delay service-name contains</b> {<string>} {<delay>} | set PadoDelay.ServiceNameSubString{<string>} {<delay>} |
| <b>pppoe session-id space flat</b>                           | set SessionIDSpaceFlat {TRUE}                          |
| <b>pppoe bba-group</b> {<group-name>}                        | PPPoECfg.BBAGroup {<group-name>}                       |

| CLI  | XML  |
|--|--|
| <b>pppoe enable bba-group {&lt;group-name&gt;}</b>   | set PPPoE.EnableBBAGroup {<group-name>}  |
| <b>ac name {&lt;name&gt;}</b>  | set Tags.ACName {<name>}   |
| <b>service name {&lt;name&gt;}</b>   | set Tags.ServiceName(<name>).ServiceNameConfigured   |
| <b>service selection disable</b>   | set Tags.ServiceSelectionDisable   |
| <b>tag ppp-max-payload deny</b>  | set Tags.PPPMaxPayloadDeny   |
| <b>tag ppp-max-payload minimum {&lt;min&gt;}<br/>maximum {&lt;max&gt;}</b>   | set Tags.PPPMaxPayload {<min>,<max>}   |
| <b>mtu {&lt;mtu&gt;}</b>   | set MTU {<mtu>}  |
| <b>sessions max limit {limit} threshold<br/>{&lt;threshold&gt;}</b>  | set Sessions.MaxLimit {<limit>,<threshold>}  |
| <b>sessions access-interface limit {&lt;count&gt;}<br/>[threshold {&lt;threshold&gt;}]</b>                                       | set Sessions.AccessInterfaceLimit<br>{<count>,<threshold>}   |
| <b>sessions mac limit {&lt;count&gt;} [threshold<br/>{&lt;threshold&gt;}]</b>  | set Sessions.MacLimit {<count>,<threshold>}  |
| <b>sessions mac-iwf limit {&lt;count&gt;} [threshold<br/>{&lt;threshold&gt;}]</b>  | set Sessions.MacIWFLimit {<count>,<threshold>}   |
| <b>sessions mac access-interface limit<br/>{&lt;count&gt;} [threshold {&lt;threshold&gt;}]</b>                                   | set Sessions.MacAccessInterfaceLimit<br>{<count>,<threshold>}                                      |
| <b>sessions mac-iwf access-interface limit<br/>{&lt;count&gt;} [threshold {&lt;threshold&gt;}]</b>                               | set Sessions.MacIWFAccessInterfaceLimit<br>{<count>,<threshold>}                                   |
| <b>sessions circuit-id limit {&lt;count&gt;}<br/>[threshold {&lt;threshold&gt;}]</b>   | set Sessions.CircuitIDLimit {<count>,<threshold>}  |
| <b>sessions remote-id limit {&lt;count&gt;}<br/>[threshold {&lt;threshold&gt;}]</b>  | set Sessions.RemoteIDLimit {<count>,<threshold>}   |
| <b>sessions circuit-id-and-remote-id limit<br/>{&lt;count&gt;} [threshold {&lt;threshold&gt;}]</b>                               | set Sessions.CircuitIDAndRemoteIDLimit<br>{<count>,<threshold>,<radius-override>}                  |
| <b>sessions inner-vlan limit {&lt;count&gt;}<br/>[threshold {&lt;threshold&gt;}]</b>   | set Sessions.InnerVLANLimit {<count>,<threshold>}  |
| <b>sessions mac throttle {&lt;request-count&gt;<br/>&lt;request-period&gt; &lt;blocking-period&gt;}</b>                          | set Sessions.MacThrottle<br>{<request-count>,<request-period>,<blocking-period>}                   |
| <b>sessions mac access-interface throttle<br/>{&lt;request-count&gt; &lt;request-period&gt;<br/>&lt;blocking-period&gt;}</b>     | set Sessions.MacAccessInterfaceThrottle<br>{<request-count>,<request-period>,<blocking-period>}    |
| <b>sessions mac-iwf access-interface throttle<br/>{&lt;request-count&gt; &lt;request-period&gt;<br/>&lt;blocking-period&gt;}</b> | set Sessions.MacIWFAccessInterfaceThrottle<br>{<request-count>,<request-period>,<blocking-period>} |
| <b>sessions circuit-id throttle<br/>{&lt;request-count&gt; &lt;request-period&gt;<br/>&lt;blocking-period&gt;}</b>               | set Sessions.CircuitIDThrottle<br>{<request-count>,<request-period>,<blocking-period>}             |

| CLI  | XML   |
|--|---|
| <b>sessions remote-id throttle</b><br>{<request-count> <request-period><br><blocking-period>}                | set Sessions.RemoteIDThrottle<br>{<request-count>,<request-period>,<blocking-period>}             |
| <b>sessions circuit-id-and-remote-id throttle</b><br>{<request-count> <request-period><br><blocking-period>} | set Sessions.CircuitIDAndRemoteIDThrottle<br>{<request-count>,<request-period>,<blocking-period>} |
| <b>sessions inner-vlan throttle</b><br>{<request-count> <request-period><br><blocking-period>}               | set Sessions.InnerVLANThrottle<br>{<request-count>,<request-period>,<blocking-period>}            |
| <b>control-packets priority</b> {<cos>}  | set ControlPackets.Priority {<cos>}   |
| <b>invalid-session-id drop</b>   | set InvalidSessionID {DROP}   |
| <b>invalid-session-id log</b>  | set InvalidSessionID {LOG}  |

## Subscriber Database XML Support

The support for XML is available for subscriber database that retrieves the subscriber association and session information and allows the management clients to get subscriber session state, subscriber session information based on unique subscriber label, subscriber association information based on unique subscriber label or interface name or dynamic template name or type. The mapping between CLI and XML entries for the subscriber database commands are as follows:

| CLI   | XML  |
|---|--|
| <b>show subscriber database association br location</b> <>  | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label {Naming SubscriberLabel}                         |
| <b>show subscriber database association subscriber-label</b><br><> br location<>  | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label {Naming SubscriberLabel}                         |
| <b>show subscriber database association location</b> <>   | Subscriber.Database.NodeTable.Node.Association (SubscriberDatabaseLabelDetailFilter)                             |
| <b>show subscriber database association interface-name</b><br><> br location<>  | Subscriber.Database.NodeTable.Node.Association (SubscriberDatabaseInterfaceBriefFilter) {Naming InterfaceName}   |
| <b>show subscriber database association interface-name</b><br><> location<>   | Subscriber.Database.NodeTable.Node.Association (SubscriberDatabaseInterfaceFilter) {Naming InterfaceName}        |
| <b>show subscriber database association type</b> <<br>ipsubscriber  ppp<br> service-profile<br> subscriber-service> br<br>location <> | Subscriber.Database.NodeTable.Node.Association (SubscriberDatabaseTemplateTypeBriefFilter) {Naming TemplateType} |

| CLI  | XML   |
|--|---|
| <b>show subscriber database association type &lt; ipsubscriber  ppp  service-profile  subscriber-service&gt; location &lt;&gt;</b>         | Subscriber.Database.NodeTable.Node.Association(SubscriberDatabaseTemplateTypeFilter) {NamingTemplateType} |
| <b>show subscriber database session state &lt;all&gt; cfgapply  cfgdone  cfggen  cfgunapply  destroying  error  fatgen  init  sync&gt;</b> | Subscriber.Database.NodeTable.Node.Session(SubscriberDatabaseSessionStateFilter) {NamingSession-State}    |
| <b>show subscriber database session subscriber-label &lt;&gt; location &lt;&gt;</b>  | Subscriber.Database.NodeTable.Node.Session.LabelTable.Label {NamingSubscriberLabel}                       |
| <b>association subscriber-label &lt;0x0-0xffffffff&gt; brief location R/S/M</b>  | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label   |
| <b>association subscriber-label &lt;0x0-0xffffffff&gt; brief</b>   | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label   |
| <b>association subscriber-label &lt;0x0-0xffffffff&gt; location R/S/M</b>  | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label   |
| <b>association subscriber-label &lt;0x0-0xffffffff&gt;</b>   | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label   |
| <b>association interface-name &lt;ifname&gt; brief location R/S/M</b>  | Subscriber.Database.NodeTable.Node.Association[SubscriberInterfaceBriefFilter (NamingInterfaceName)]      |
| <b>association interface-name &lt;ifname&gt; brief</b>   | Subscriber.Database.NodeTable.Node.Association[SubscriberInterfaceBriefFilter (NamingInterfaceName)]      |
| <b>association interface-name &lt;ifname&gt; location R/S/M</b>  | Subscriber.Database.NodeTable.Node.Association[SubscriberInterfaceFilter (NamingInterfaceName)]           |
| <b>association interface-name &lt;ifname&gt;</b>   | Subscriber.Database.NodeTable.Node.Association[SubscriberInterfaceFilter (NamingInterfaceName)]           |
| <b>association type ppp brief location R/S/M</b>   | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (NamingTemplateType)]               |
| <b>association type ppp brief</b>  | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (NamingTemplateType)]               |
| <b>association type ppp location R/S/M</b>   | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (NamingTemplateType)]               |
| <b>association type ppp</b>  | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (NamingTemplateType)]               |

| CLI   | XML   |
|---|---|
| <b>association type<br/>ipsubscriber brief location<br/>R/S/M</b>       | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>ipsubscriber brief</b>                          | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>ipsubscriber location R/S/M</b>                 | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>ipsubscriber</b>                                | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>subscriber-service brief<br/>location R/S/M</b> | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>subscriber-service brief</b>                    | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>subscriber-service location<br/>R/S/M</b>       | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>subscriber-service</b>                          | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>service-profile brief<br/>location R/S/M</b>    | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>service-profile brief</b>                       | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>service-profile location<br/>R/S/M</b>          | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type<br/>service-profile</b>                             | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type user-profile<br/>brief location R/S/M</b>           | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type user-profile<br/>brief</b>                          | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type user-profile<br/>location R/S/M</b>                 | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association type user-profile</b>                                    | Subscriber.Database.NodeTable.Node.Association[SubscriberTemplateType (Naming<br>TemplateType)] |
| <b>association brief location<br/>R/S/M</b>                             | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label                                 |
| <b>association brief</b>  | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label                                 |

| CLI   | XML   |
|---|---|
| <b>association location R/S/M</b>   | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label                         |
| <b>association</b>  | Subscriber.Database.NodeTable.Node.Association.LabelTable.Label                         |
| <b>session subscriber-label<br/>&lt;0x0-0xffffffff&gt; location<br/>R/S/M</b> | Subscriber.Database.NodeTable.Node.Session.LabelTable.Label                             |
| <b>session subscriber-label<br/>&lt;0x0-0xffffffff&gt;</b>                    | Subscriber.Database.NodeTable.Node.Session.LabelTable.Label                             |
| <b>session state init location<br/>R/S/M</b>                                  | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state init</b>   | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state destroying<br/>location R/S/M</b>                            | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state destroying</b>   | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfggen location<br/>R/S/M</b>                                | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfggen</b>   | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state fatgen location<br/>R/S/M</b>                                | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state fatgen</b>   | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfgapply<br/>location R/S/M</b>                              | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfgapply</b>   | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfgdone<br/>location R/S/M</b>                               | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfgdone</b>  | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfgunapply<br/>location R/S/M</b>                            | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfgunapply</b>   | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfgerror<br/>location R/S/M</b>                              | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state cfgerror</b>   | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |



| CLI   | XML   |
|---|---|
| <b>session state error location<br/>R/S/M</b> | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state error</b>                    | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state sync location<br/>R/S/M</b>  | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state sync</b>                     | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state all location<br/>R/S/M</b>   | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |
| <b>session state all</b>                      | Subscriber.Database.NodeTable.Node.Session[SubscriberSessionStateFilter (Naming State)] |

