# CISCO CRS Router Configuring Manageability User Guide



Contents



## CISCO CRS Router Configuring Manageability

## Product Information

### Specifications

- XML Parser Infrastructure
- Supports Document Object Model (DOM), Simple Application Programming Interface (API) for XML (SAX), and Document Type Definition (DTD) validation capabilities
- Release History:
  - Release 3.2: Initial release
  - Release 3.8.0: Enhanced-performance XML agent introduced
  - Release 3.9.0: XML requests over Secure Socket Layer (SSL) introduced, idle timeout configuration for XML agent introduced
  - Release 4.0.0: Dedicated agent configuration for VPN routing and forwarding (VRF) introduced, CPU time control for XML agent introduced

## Product Usage Instructions

**Configuring Manageability**
This module describes the configuration required to enable the Extensible Markup Language (XML) agent services.

**Information About XML Manageability**
The XML Parser Infrastructure provides parsing and generation of XML documents with Document Object Model (DOM), Simple Application Programming Interface (API) for XML (SAX), and Document Type Definition (DTD) validation capabilities.

How to Configure Manageability

Configuring the XML Agent

**SUMMARY STEPS:**

1. Enter configuration mode: `xml agent [ssl]`
2. Configure iteration size: `iteration on size iteration-size`
3. Configure session timeout: `session timeout timeout`
4. Configure throttle: `throttle {memory size | process-rate tags}`
5. Configure VRF: `vrf { default | vrf-name} [access-list access-list-name]`

**DETAILED STEPS:**

**Command or Action:** xml agent [ssl]

**Purpose:** Enables Extensible Markup Language (XML) requests over a dedicated TCP connection and enters XML agent configuration mode. Use the ssl keyword to enable XML requests over Secure Socket Layer (SSL).

**Example:** RP/0/RP0/CPU0:router:router(config)# xml agent ssl

**Command or Action:** iteration on size iteration-size

**Purpose:** Configures the iteration size for large XML agent responses in KBytes. The default is 48.

**Example:** RP/0/RP0/CPU0:router:router(config-xml-agent)# iteration on size 500

**Command or Action:** session timeout timeout

**Purpose:** Configures an idle timeout for the XML agent in minutes. By default, there is no timeout.

**Example:** RP/0/RP0/CPU0:router:router(config-xml-agent)# session timeout 5

**Command or Action:** throttle {memory size | process-rate tags}

**Purpose:** Configures the XML agent processing capabilities.

**Example:** RP/0/RP0/CPU0:router:router(config-xml-agent)# throttle memory 300

**Command or Action:** vrf { default | vrf-name} [access-list access-list-name]

**Purpose:** Configures the dedicated agent or SSL agent to receive and send messages via the specified VPN routing and forwarding (VRF) instance.

**Example:** RP/0/RP0/CPU0:router:router(config-xml-agent)# vrf my-vrf

**Configuration Examples for Manageability**

## Enabling VRF on an XML Agent: Examples

The following example illustrates how to configure the dedicated XML agent to receive and send messages via VRF1, VRF2, and the default VRF:

1. Enter configuration mode: `xml agent`
2. Configure VRF1: `vrf VRF1`
3. Configure VRF2: `vrf VRF2`

**Example:**

```
RP/0/RP0/CPU0:router:router(config)# xml agent
RP/0/RP0/CPU0:router:router(config-xml-agent)# vrf VRF1
RP/0/RP0/CPU0:router:router(config-xml-agent)# vrf VRF2
```

**FAQ**

**Q: What is XML Manageability?**
**A:** XML Manageability refers to the configuration and management of the XML agent services on the product.

**Q: What are the default values for iteration size and session timeout?**
**A:** The default iteration size is 48 KBytes, and there is no session timeout by default.

**Q: How can I configure the XML agent to use SSL for XML requests?**
**A:** Use the command `xml agent ssl` to enable XML requests over Secure Socket Layer (SSL).

## Configuring Manageability

This module describes the configuration required to enable the Extensible Markup Language (XML) agent services. The XML Parser Infrastructure provides parsing and generation of XML documents with Document Object Model (DOM), Simple Application Programming Interface (API) for XML (SAX), and Document

Type Definition (DTD) validation capabilities:

- DOM allows customers to programmatically create, manipulate, and generate XML documents.
- SAX supports user-defined functions for XML tags.
- DTD allows for validation of defined document types.

**Table 1:** Feature History for Configuring Manageability on Cisco IOS XR Software

| | |
|---|---|
| Release 3.2 | This feature was introduced. |
| Release 3.8.0 | An enhanced-performance XML agent was introduced. |
| Release 3.9.0 | The ability to enable XML requests over Secure Socket Layer (SSL) was intr oduced. The ability to configure an idle timeout for the XML agent was introd uced. |
| Release 4.0.0 | The ability to configure a dedicated agent to receive and send messages via a specified VPN routing and forwarding (VRF) instance was introduced.<br><br>The ability to control CPU time used by the XML agent was introduced. |

This module contains the following topics:

## Information About XML Manageability

The Cisco IOS XR Extensible Markup Language (XML) API provides a programmable interface to the router for use by external management applications. This interface provides a mechanism for router configuration and monitoring utilizing XML formatted request and response streams. The XML interface is built on top of the Management Data API (MDA), which provides a mechanism for Cisco IOS XR components to publish their data models through MDA schema definition files.
Cisco IOS XR software provides the ability to access the router via XML using a dedicated TCP connection,Secure Socket Layer (SSL), or a specific VPN routing and forwarding (VRF) instance.

## How to Configure Manageability

Configuring the XML Agent

**SUMMARY STEPS**

1. xml agent [ssl]
2. iteration on size iteration-size
3. session timeout timeout
4. throttle {memory size | process-rate tags}
5. vrf { default | vrf-name} [access-list access-list-name]

**DETAILED STEPS**

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **xml agent** [**ssl**]<br><br>**Example:**<br>RP/0/RP0/CPU0:router:router(config)# xml agent | Enables Extensible Markup Language (XML) requests over a dedicated TCP connection and enters XML agent configuration mode. Use the **ssl** keyword to enable XML requests over Secure Socket Layer (SSL). |
| **Step 2** | **iteration on size** *iteration-size*<br><br>**Example:**<br>RP/0/RP0/CPU0:router:router(config-xml-agent)#<br>iteration on size 500 | Configures the iteration size for large XML agent responses in KBytes. The default is 48. |
| **Step 3** | **session timeout** *timeout*<br><br>**Example:**<br>RP/0/RP0/CPU0:router:router(config-xml-agent)#<br>session timeout 5 | Configures an idle timeout for the XML agent in minutes. By default, there is no timeout. |
| **Step 4** | **throttle** {**memory** *size* \| **process-rate** *tags*} | Configures the XML agent processing capabilities. |

| | | |
|---|---|---|
| | **Example:**<br>RP/0/RP0/CPU0:router:router(config-xml-agent)# throttle memory 300 | • Specify the memory size in Mbytes. Values can range from 100 to 600. The default is 300.<br>• Specify the process-rate as the number of tags that the XML agent can process per second. Values can range from 1000 to 30000. By default the process rate is not throttled. |
| **Step 5** | **vrf** { **default** \| *vrf-name*} [**access-list** *access-list-name*]<br><br>**Example:**<br>RP/0/RP0/CPU0:router:router(config-xml-agent)#<br>vrf my-vrf | Configures the dedicated agent or SSL agent to receive and send messages via the specified VPN routing and forwarding (VRF) instance. |

## Configuration Examples for Manageability

**Enabling VRF on an XML Agent:** Examples

The following example illustrates how to configure the dedicated XML agent to receive and send messages via VRF1, VRF2 and the default VRF:

- RP/0/RP0/CPU0:router:router(config)# xml agent
- RP/0/RP0/CPU0:router:router(config-xml-agent)# vrf VRF1
- RP/0/RP0/CPU0:router:router(config-xml-agent)# vrf VRF2
- The following example illustrates how to remove access to VRF2 from the dedicated agent:
- RP/0/RP0/CPU0:router:router(config)# xml agent
- RP/0/RP0/CPU0:router:router(config-xml-agent)# no vrf VRF2

The following example shows how to configure the XML SSL agent to receive and send messages through

- VRF1, VRF2 and the default VRF:
- RP/0/RP0/CPU0:router:router(config)# xml agent ssl
- RP/0/RP0/CPU0:router:router(config-xml-agent)# vrf VRF1
- RP/0/RP0/CPU0:router:router(config-xml-agent)# vrf VRF2

The following example removes access for VRF2 from the dedicated XML agent:

- RP/0/RP0/CPU0:router:router(config)# xml agent ssl
- RP/0/RP0/CPU0:router:router(config-xml-agent)# no vrf VRF2

## Additional References

The following sections provide references related to configuring manageability on Cisco IOS XR software.

**Related Documents**

| Related Topic | Document Title |
|---|---|
| Cisco IOS XR commands | *Cisco IOS XR Commands Master List for the Cisco CRS Router* |
| Cisco IOS XR XML API material | *Cisco IOS XR XML API Guide for the Cisco CRS Router* |
| Information about user groups and task IDs | *Configuring AAA Services on Cisco IOS XR Software* module of *Cisco IOS XR System Security Configuration Guide for the Cisco CRS Router* |

**Standards and RFCs**

| Standard/RFC | Title |
| --- | --- |
| No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature. | — |

**MIBs**

| MIB | MIBs Link |
| --- | --- |
| — | To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:<br><br>http://www.cisco.com/go/mibs |

**RFCs**

| RFCs | Title |
| --- | --- |
| No new or modified RFCs are supported by this<br><br>feature, and support for existing RFCs has not been modified by this feature. | — |

**Technical Assistance**

| Description | Link |
| --- | --- |
| The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.<br><br>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.<br><br>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password. | http://www.cisco.com/cisco/web/support/index.html |



## Documents / Resources

| | |
|---|---|
|  | **CISCO CRS Router Configuring Manageability** [pdf] User Guide<br>CRS Router Configuring Manageability, Router Configuring Manageability, Configuring Manageability, Manageability |

## References

- **User Manual**