



Manageability Commands on the Cisco ASR 9000 Series Router

This chapter describes the Cisco IOS XR software commands used to enable the HTTP server, enable router management through Extensible Markup Language (XML) agent services, and support the Common Object Request Broker Architecture (CORBA) infrastructure.

The XML Parser Infrastructure provides parsing and generation of XML documents with Document Object Model (DOM), Simple 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.
-
- [shutdown \(VRF\), page 2](#)
 - [http server, page 4](#)
 - [iteration, page 6](#)
 - [session timeout, page 8](#)
 - [show xml schema, page 10](#)
 - [show xml sessions, page 12](#)
 - [throttle, page 14](#)
 - [vrf \(XML\), page 15](#)
 - [xml agent, page 17](#)
 - [xml agent ssl, page 18](#)
 - [xml agent tty, page 19](#)

shutdown (VRF)

To configure the dedicated XML agent to not receive or send messages via the default VRF, use the **shutdown** command in xml agent vrf configuration mode. To enable the dedicated XML agent to receive or send messages via the default VRF, use the **no** form of this command.

shutdown

no shutdown

This command has no arguments or keywords.

Command Default

The default VRF instance is enabled by default.

Command Modes

xml agent vrf configuration

xml agent ssl vrf configuration

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
config-services	read, write

Examples

The following example illustrates how to configure the XML dedicated agent to send and receive messages via VRF1 only:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf VRF1
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf default
RP/0/RSP0/CPU0:router(config-xml-agent-vrf)# shutdown
```

The following example illustrates how to configure the XML SSL agent to send and receive messages via VRF1 only:

```
RP/0/RSP0/CPU0:router(config)# xml agent ssl
RP/0/RSP0/CPU0:router(config-xml-agent-ssl)# vrf VRF1
RP/0/RSP0/CPU0:router(config-xml-agent-ssl)# vrf default
RP/0/RSP0/CPU0:router(config-xml-agent-ssl-vrf)# shutdown
```

The following example illustrates how to enable the default VRF after it has been disabled:

```
RP/0/RSP0/CPU0:router(config)# xml agent  
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf default  
RP/0/RSP0/CPU0:router(config-xml-agent-vrf)# no shutdown
```

Related Commands

Command	Description
vrf (XML), page 15	Configures a dedicated agent to receive and send messages via the specified VPN routing and forwarding (VRF) instance.

http server

To enable the HTTP server on the router and enable access to the Craft Works Interface (CWI), use the **http server** command in global configuration mode. To disable the HTTP server, use the **no** form of this command.

http server [**ssl**] [**access-group** *name*]

no http server

Syntax Description

ssl	(Optional) Enables Secure Socket Layer (SSL).
access-group <i>name</i>	(Optional) Enables access to the CWI from IP addresses that meet the conditions of the access control list (ACL) specified for the <i>name</i> argument.

Command Default

The HTTP server is disabled.

Command Modes

Global configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **http server** command to enable the HTTP server on your router.

To display the home page of the router, use a Web browser pointed to `http://x.x.x.x`, where `x.x.x.x` is the router IP address. If a name has been set, use `http://router-name`.

Use the **ssl** keyword to run HTTP over a secure socket. This command enables the HTTP server to run SSL when accessing web pages or files provided by the HTTP server of the router and disables access through the regular HTTP port.

Enabling the HTTP server enables authentication by default. After the HTTP server has been enabled, you then are prompted to provide a username and password to access web pages on the HTTP server.



Note

The **http server** command enables the HTTP server process on Management Ethernet interfaces by default. For information about how to enable HTTP server on other inband interfaces, see the *Implementing Management Plane Protection on Cisco IOS XR Software* module in *Cisco ASR 9000 Series Aggregation Services Router System Security Configuration Guide*.

Task ID	Task ID	Operations
	config-services	read, write

Examples

The following example shows how to enable the HTTP server on the router:

```
RP/0/RSP0/CPU0:router(config)# http server
```

The following example shows how to enable SSL to run HTTP over a secure socket:

```
RP/0/RSP0/CPU0:router(config)# http server ssl
```

The following example shows how to enable SSL to run HTTP over a secure socket and to enable access to the CWI from only IP addresses that meet the conditions of the access group named test:

```
RP/0/RSP0/CPU0:router(config)# http server ssl access-group test
```

The following sample output from the **show ipv4 access-lists** commands displays the IPv4 access list named test:

```
RP/0/RSP0/CPU0:router# show ipv4 access-lists test

ipv4 access-list test
 10 deny ip host 171.71.163.96 any
 20 permit ip host 64.102.48.34 any
```

iteration

To configure the iteration size for large XML agent responses, use the `iteration` command in `xml agent` configuration mode. To revert to the default iteration settings, use the `no` form of this command.

iteration {`off` | `on size iteration-size`}

no iteration

Syntax Description

off	Disables iteration, meaning that the entire XML response is returned, regardless of its size. Use of this option is not recommended.
on	Enables iteration, meaning that large XML responses are broken into chunks according to the iteration chunk size.
size iteration-size	Specifies the size of the iteration chunk, in Kbytes. Values can range from 1 to 100,000.

Command Default

Iteration is enabled; the `iteration-size` is 48.

Command Modes

XML agent
TTY XML agent
SSL XML agent

Command History

Release	Modification
Release 3.9.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

When the XML agent returns a large response, it splits the response into chunks and returns one chunk at a time. External clients then need to send a `GetNext` request to obtain the next chunk. Use the **iteration** command to control the size of iteration chunks. A larger chunk value allows larger chunks to be received in a shorter period of time, possibly making the router system busier. A smaller chunk value allows smaller chunks to be received over a longer period of time, but does not make the router busy. You can also specify to disable iteration completely using the **iteration off** command.



Note

It is not recommended to disable iteration, since this could result in large transient memory usage.

To specify the TTY or SSL iteration size specifically, use the **iteration** command from the appropriate command mode.

Task ID

Task ID	Operations
config-services	read, write

Examples

The following example shows how to configure the iteration chunk size to 100 Kbytes.

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml)# iteration on size 100
```

The following example shows how to disable iteration:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml)# iteration off
```

The following example shows how to turn on iteration with the default iteration size:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml)# no iteration off
```

The following example shows how to change the iteration size to the default iteration size.

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml)# no iteration on size 100
```

The following example shows how to change the iteration size of the TTY agent to 3 Kbytes:

```
RP/0/RSP0/CPU0:router(config)# xml agent tty
RP/0/RSP0/CPU0:router(config-xml-tty)# iteration on size 3
```

The following example shows how to turn off the iteration of the SSL agent:

```
RP/0/RSP0/CPU0:router(config)# xml agent ssl
RP/0/RSP0/CPU0:router(config-xml-ssl)# iteration off
```

Related Commands

Command	Description
xml agent, page 17	Enables Extensible Markup Language (XML) requests over a dedicated TCP connection and enters XML agent configuration mode.
xml agent tty, page 19	Enables Extensible Markup Language (XML) requests over Secure Shell (SSH) and Telnet and enters TTY XML agent configuration mode.
xml agent ssl, page 18	Enables Extensible Markup Language (XML) requests over Secure Socket Layer (SSL) and enters SSL XML agent configuration mode.

session timeout

To configure an idle timeout for the XML agent, use the **session timeout** command in xml agent configuration mode. To remove the session timeout, use the **no** form of this command.

session timeout *timeout*

Syntax Description

<i>timeout</i>	Amount of idle time in minutes that must pass before the XML agent closes the session. Values can range from 1 to 1440.
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Command Default

There is no session timeout.

Command Modes

xml agent
xml agent ssl
xml agent tty

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
config-services	read, write

Examples

The following example illustrates how to configure the dedicated agent to close the session after 5 minutes of idle time:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# session timeout 5
```

The following example illustrates how to configure the XML TTY agent to close the session after 60 minutes of idle time:

```
RP/0/RSP0/CPU0:router(config)# xml agent tty
RP/0/RSP0/CPU0:router(config-xml-agent-tty)# session timeout 60
```

The following example illustrates how to configure the XML TTY agent to have no timeout (the default):

```
RP/0/RSP0/CPU0:router(config)# xml agent tty  
RP/0/RSP0/CPU0:router(config-xml-agent)# no session timeout
```

Related Commands

Command	Description
xml agent, page 17	Enables Extensible Markup Language (XML) requests over a dedicated TCP connection and enters XML agent configuration mode.

show xml schema

To browse the XML schema and data, use the **show xml schema** command in EXEC mode.

show xml schema

Syntax Description This command has no arguments or keywords.

Command Default No default behavior or values

Command Modes EXEC

Command History	Release	Modification
	Release 3.7.2	This command was introduced.

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The command runs the XML schema browser so that you can browse the XML schema and data.

Task ID	Task ID	Operations
	config-services	read

Examples The following example shows how to enter the XML schema browser and the available commands:

```
RP/0/RSP0/CPU0:router# show xml schema

Username: xxxx
Password:
Enter 'help' or '?' for help
xml-schema[config]:> ?

config          oper          action
adminoper      adminaction  cd
pwd            classinfo   list
ls             datalist    walk
walkdata       get          hierarchy
quit           exit         help
xml-schema[config]:>
```

Related Commands

Command	Description
copy xml-schema	Copies the XML schema files on the router as a tar ball file (.tar.gz).

show xml sessions

To display the status of an Extensible Markup Language (XML) session, use the **show xml sessions** command in EXEC mode.

show xml sessions [**default**| **ssl**| **tty**] [**detail**]

Syntax Description

default	Displays the status of the default XML agent.
ssl	Displays the status of the XML agents over secure socket layer (SSL).
tty	Displays the status of XML agents over telnet.
detail	Displays details regarding the XML sessions.

Command Default

No default behavior or values

Command Modes

EXEC

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operation
config-services	read

Examples

The following example illustrates sample output of the **show xml sessions** command with no optional keywords specified:

```
RP/0/RSP0/CPU0:router# show xml sessions
Session Client          Agent  User  Date                State
00000001 192.168.10.85 (default) tty   cisco Fri Jun 19 22:42:29 2009 idle
10000001 10.12.24.15 (VRF1) default lab   Fri Jun 19 22:32:12 2009 busy
```

The following example illustrates sample output of the **show xml sessions** command with the **tty** keyword:

```
RP/0/RSP0/CPU0:router# show xml sessions tty
```

```

Session Client Agent User Date State
00000001 192.168.10.85 (default) tty cisco Fri Jun 19 22:42:29 2009 idle
00000002 10.12.24.15 (VRF1) tty lab Fri Jun 19 22:32:12 2009 busy

```

The following example illustrates sample output of the **show xml sessions** command with the **detail** keyword:

```

RP/0/RSP0/CPU0:router#
show xml sessions detail

```

```

Session: 00000001
  Client: 192.168.10.85 (default)
  Agent type: tty
  User: cisco
  State: idle
  Config session: -
  Alarm notification: Registered
  Start Date: Tue Aug 24 18:21:29 2010
  Elapsed Time: 00:00:27
  Last State Changed: 00:00:27
Session: 10000001
  Client: 10.12.24.15 (VRF1)
  Agent type: default
  User: lab
  State: busy
  Config session: 00000010-0005b105-00000000
  Alarm notification: Not registered
  Start date: Tue Aug 24 18:21:29 2010
  Elapsed Time: 00:01:10
  Last State Changed: 00:01:10

```

Related Commands

Command	Description
xml agent, page 17	Enables Extensible Markup Language (XML) requests over a dedicated TCP connection and enters XML agent configuration mode.

throttle

To configure the XML agent processing capabilities, use the **throttle** command in XML agent configuration mode.

throttle {*memory size*|*process-rate tags*}

Syntax Description

memory	Specifies the XML agent memory size.
<i>size</i>	Size of the XML agent memory in MB. Values can range from 100 to 600. The default is 300.
process-rate	Specifies the XML agent processing rate.
<i>tags</i>	Number of tags that the XML agent can process per second. Values can range from 1000 to 30000.

Command Default

The process rate is not throttled; memory size is 300 MB.

Command Modes

XML agent configuration

Command History

Release	Modification
Release 3.8.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **throttle** command to control CPU time used by the XML agent when it handles large data.

Task ID

Task ID	Operation
config-services	read, write

Examples

The following example illustrates how to configure the number of tags that the XML agent can process to 1000:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# throttle process-rate 1000
```

vrf (XML)

To configure a dedicated agent to receive and send messages via the specified VPN routing and forwarding (VRF) instance, use the `vrf` command in one of the xml agent configuration mode. To disable the receiving and sending of messages via a specific VRF instance, use the `no` form of this command.

```
vrf {default|vrf-name}
```

Syntax Description

default	Configures the default VRF instance.
<i>vrf-name</i>	Configures the specified VRF instance.

Command Default

The default VRF is enabled by default.

Command Modes

XML agent configuration
XML agent SSL configuration

Command History

Release	Modification
Release 4.0.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The default VRF is enabled by default. To disable the default VRF, use the `shutdown` command.

Task ID

Task ID	Operation
config-services	read, write

Examples

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

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf VRF1
RP/0/RSP0/CPU0:router(config-xml-agent)# vrf VRF2
```

The following example shows how to remove access to VRF2 from the dedicated agent:

```
RP/0/RSP0/CPU0:router(config)# xml agent
RP/0/RSP0/CPU0:router(config-xml-agent)# no vrf VRF2
```

Related Commands

Command	Description
shutdown (VRF), page 2	Configures the dedicated agent to not receive or send messages via the default VRF.
xml agent, page 17	Enables Extensible Markup Language (XML) requests over a dedicated TCP connection and enters XML agent configuration mode.
xml agent ssl, page 18	Enables XML requests over Secure Socket Layer (SSL) and enters SSL XML agent configuration mode.

xml agent

To enable Extensible Markup Language (XML) requests over a dedicated TCP connection and enter XML agent configuration mode, use the **xml agent** command in global configuration mode. To disable XML requests over the dedicated TCP connection, use the **no** form of this command.



Note

This command enables a new, enhanced-performance XML agent. The **xml agent tty** command enables the legacy XML agent and is supported for backward compatibility.

xml agent

no xml agent

Command Default

XML requests are disabled.

Command Modes

Global configuration

Command History

Release	Modification
Release 3.8.0	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

There are two XML agents: a legacy XML agent and an enhanced-performance XML agent. We recommend that you use the enhanced-performance agent. The legacy agent is supported for backward compatibility. Use the command to enable the enhanced-performance XML agent. Use the **xml agent tty** command to enable the legacy XML agent.

Use the **no** form of the command to disable the enhanced-performance XML agent.

Task ID

Task ID	Operations
config-services	read, write

Examples

The following example shows how to enable XML requests over a dedicated TCP connection:

```
RP/0/RSP0/CPU0:router(config)# xml agent
```

xml agent ssl

To enable Extensible Markup Language (XML) requests over Secure Socket Layer (SSL) and enter SSL XML agent configuration mode, use the **xml agent ssl** command in global configuration mode. To disable XML requests over SSL, use the **no** form of this command.

xml agent ssl

no xml agent ssl

Command Default SSL agent is disabled by default.

Command Modes Global configuration

Command History	Release	Modification
	Release 3.9.0	This command was introduced.

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The k9sec package is required to use the SSL agent. The configuration is rejected during commit when the security software package is not active on the system. When the security software package is deactivated after configuring SSL agent, the following syslog message is displayed to report that the SSL agent is no longer available.

```
xml_dedicated_ssl_agent[420]:
%MGBL-XML_TTY-7-SSLINIT : K9sec pie is not active, XML service over
SSL is not available.
```

Task ID	Task ID	Operations
	config-services	read, write

Examples The following example shows how to enable XML requests over SSL:

```
RP/0/RSP0/CPU0:router(config)# xml agent ssl
```

xml agent tty

To enable Extensible Markup Language (XML) requests over Secure Shell (SSH) and Telnet and enter TTY XML agent configuration mode, use the **xml agent tty** command in global configuration mode. To disable XML requests over SSH and Telnet, use the **no** form of this command.



Note

This command enables a legacy XML agent that has been superseded by an enhanced performance XML agent and is supported only for backward compatibility. To enable the enhanced-performance XML agent, use the **xml agent** command.

xml agent tty

no xml agent tty

Command Default

XML requests over SSH and Telnet are disabled.

Command Modes

Global configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

There are two XML agents: a legacy XML agent and an enhanced-performance XML agent. We recommend that you use the enhanced-performance agent. The legacy agent is supported for backward compatibility. The command enables the legacy XML agent. Use the **xml agent** command to enable the enhanced-performance XML agent.

Use the **no** form of the command to disable the legacy XML agent.

Task ID

Task ID	Operations
config-services	read, write

Examples

The following example shows how to enable XML requests over Secure Shell (SSH) and Telnet:

```
RP/0/RSP0/CPU0:router(config)# xml agent tty
```

xml agent tty