



## Manageability Commands

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This chapter describes the commands that can be used to enable HTTP servers, 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.

For more information, see *System Management Configuration Guide for Cisco NCS 5500 Series Routers*, *System Management Configuration Guide for Cisco NCS 540 Series Routers*, *System Management Configuration Guide for Cisco NCS 560 Series Routers*.

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# iteration

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

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

Syntax Description	off	on	size <i>iteration-size</i>
	Disables iteration- Entire XML response is returned, regardless of its size.		
	<p><b>Note</b> This option is not recommended.</p>		
		Enables iteration- Large XML responses are broken into chunks according to the iteration chunk size specified.	
			Specifies the size of the iteration chunk, in <b>Kbytes</b> . Iteration-size can range from 1 to 100,000.

**Command Default** Iteration is **enabled**, with the *iteration-size* as 48.

**Command Modes** XML agent  
TTY XML agent  
SSL XML agent

Command History	Release	Modification
	Release 7.0.1	This command was introduced.

**Usage Guidelines** When a XML agent returns a large response, it splits the response into chunks and returns one chunk at a time. Externally, a **GetNext** request is sent to obtain the next chunk. This command can be used to control the size of iteration chunks.

A larger chunk value lets you receive many chunks in a shorter time, but, makes the router busy. A smaller chunk value lets you receive only a few chunks even over long time but, does not make the router busy. The iteration can be disabled by using the **off** keyword in the command..



**Note** It is not recommended to disable iteration because, it could result in large transient memory usage.

## Example

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

```
RP/0/RP0/CPU0:router (config) # xml agent
RP/0/RP0/CPU0:router (config-xml) # iteration on size 100
```

The following example shows how to disable iteration:

```
RP/0/RP0/CPU0:router(config)# xml agent  
RP/0/RP0/CPU0:router(config-xml)# iteration off
```

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

```
RP/0/RP0/CPU0:router(config)# xml agent  
RP/0/RP0/CPU0:router(config-xml)# no iteration off
```

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

```
RP/0/RP0/CPU0:router(config)# xml agent  
RP/0/RP0/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/RP0/CPU0:router(config)# xml agent tty  
RP/0/RP0/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/RP0/CPU0:router(config)# xml agent ssl  
RP/0/RP0/CPU0:router(config-xml-ssl)# iteration off
```

# streaming

To configure the streaming size of the response while the XML agent is retrieving data from the source, use the **streaming** command in the appropriate mode.

**streaming on** *size size in kbytes*

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<b>Syntax Description</b>	<b>size</b> <i>size in kbytes</i> Streaming size of the xml response. Range is 1 to 100000.
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<b>Command Default</b>	Default is 48 KB.
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<b>Command Modes</b>	XML agent mode
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.0.1	This command was introduced.

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<b>Usage Guidelines</b>	Iteration must be off. The sub-response block size is a configurable value specific to each transport mechanisms on the router (the XML agent for the dedicated TCP connection and Secure Shell (SSH), Telnet, or Secure Sockets Layer (SSL) dedicated TCP connection).
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## Example

This example shows how to configure the streaming size to 100 KB:

```
RP/0/RP0/CPU0:router (config) # xml agent
RP/0/RP0/CPU0:router (config-xml) # streaming on size 100
```

# show xml schema

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

## show xml schema

**Syntax Description** This command has no keywords or arguments.

**Command Default** None

**Command Modes** XR EXEC

Command History	Release	Modification
	Release 7.0.1	This command was introduced.

**Usage Guidelines** No specific guidelines impact the use of this command.

This example shows how to enter the XML schema browser and the available commands:

```
RP/0/RP0/CPU0:router# show xml schema
Tue Dec  5 12:52:58.857 WET
Username:lab
Password:
Enter 'help' or '?' for help
xml-schema[config]:> ?
config                oper                action
adminconfig           adminoper           adminaction
cd                    pwd                 classinfo
list                  ls                  datalist
walk                  walkdata            get
hierarchy             quit                exit
help
xml-schema[config]:>
```

# throttle

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

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

Syntax Description	memory	process-rate
	<i>size</i>	<i>tags</i>
	Specifies XML agent memory size.	Specifies the XML agent processing rate.
	Maximum memory usage of XML agent per session in MB. Values can range from 100 to 600. The default value is 300.	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 7.0.1	This command was introduced.

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

## Example

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

```
RP/0/RP0/CPU0:router(config)# xml agent
RP/0/RP0/CPU0:router(config-xml-agent)# throttle process-rate 1000
```

# 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 6.1.2	This command was introduced.

**Usage Guidelines** 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 **xml agent** command to enable the enhanced-performance XML agent. Use the **xml agent tty** command to enable the legacy XML agent.

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

```
RP/0/RP0/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 **xml agent ssl** command in global configuration mode. To disable XML requests over SSL, use **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 7.0.1	This command was introduced.

**Usage Guidelines** 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.
```

This example shows how to enable XML requests over SSL:

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



# xml agent tty

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



**Note** This command enables a legacy XML agent that has been superceded 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 7.0.1	This command was introduced.

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

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

```
RP/0/RP0/CPU0:router(config)# xml agent tty
```

# ipv4 disable

To disable IPv4 XML transport, use the **ipv4 disable** command in XML agent configuration mode. To enable IPv4 XML transport, use the **no** form of this command.

**ipv4 disable**  
**no ipv4 disable**

**Syntax Description** This command has no keywords or arguments.

**Command Default** IPv4 XML transport is enabled by default.

**Command Modes** XML agent configuration

## Command History

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the 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

This example illustrates how to disable IPv4 XML transport:

```
RP/0/RP0/CPU0:router# config
RP/0/RP0/CPU0:router(config)# xml agent
RP/0/RP0/CPU0:router(config-xml-agent) ipv4 disable
```

## ipv6 enable (XML)

To enable IPv6 XML transport, use the **ipv6 enable** command in XML agent configuration mode. To disable IPv6 XML transport, use the **no** form of this command.

**ipv6 enable**  
**no ipv6 enable**

**Syntax Description** This command has no keywords or arguments.

**Command Default** IPv6 XML transport is disabled by default.

**Command Modes** XML agent configuration

### Command History

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the 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

This example illustrates how to enable IPv6 XML transport:

```
RP/0/RP0/CPU0:router# config
RP/0/RP0/CPU0:router(config)# xml agent
RP/0/RP0/CPU0:router(config-xml-agent) ipv6 enable
```

## nvgen default-sanitize

To enable sanitizing Strings, Usernames, Passwords, Comments, or IP Addresses in the output for **show running configurations** command, use the **nvgen default-sanitize** command.

```
nvgen default-sanitize { strings | usernames | passwords | comments | ipaddrs }
```

### Syntax Description

<b>strings</b>	Removes the description strings in the running configuration and replaces it with <b>&lt;removed&gt;</b> phrase.
<b>usernames</b>	Removes the usernames in the running configuration and replaces it with <b>&lt;removed&gt;</b> phrase.
<b>password</b>	Removes the passwords in the running configuration and replaces it with <b>&lt;removed&gt;</b> phrase.
<b>comments</b>	Removes the comments in the running configuration and replaces it with <b>&lt;comments removed&gt;</b> phrase.
<b>ipaddrs</b>	Removes the IP addresses in the running configuration and replaces it with <b>&lt;removed&gt;</b> phrase.

### Command Default

The output for **show running configurations** command includes sensitive information such as Strings, Usernames, Passwords, Comments, or IP Addresses.

### Command Modes

Configuration mode

### Command History

Release	Modification
Release 7.0.1	This command was introduced.

### Usage Guidelines

None

### Examples

The following example shows how to sanitize show running configurations:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# nvgen default-sanitize strings
RP/0/RP0/CPU0:router(config)# nvgen default-sanitize usernames
RP/0/RP0/CPU0:router(config)# nvgen default-sanitize passwords
RP/0/RP0/CPU0:router(config)# nvgen default-sanitize comments
RP/0/RP0/CPU0:router(config)# nvgen default-sanitize ipaddrs
RP/0/RP0/CPU0:router(config)# commit
```

# 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*

<b>Syntax Description</b>	<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.				
<b>Command Default</b>	There is no session timeout.				
<b>Command Modes</b>	xml agent xml agent ssl xml agent tty				
<b>Command History</b>					
<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.				
<b>Task ID</b>	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>config-services</td> <td>read, write</td> </tr> </tbody> </table>	Task ID	Operation	config-services	read, write
Task ID	Operation				
config-services	read, write				

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

```
RP/0/RP0/CPU0:router(config)# xml agent
RP/0/RP0/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/RP0/CPU0:router(config)# xml agent tty
RP/0/RP0/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/RP0/CPU0:router(config)# xml agent tty
RP/0/RP0/CPU0:router(config-xml-agent)# no session timeout
```

# 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**]

<b>Syntax Description</b>	<b>default</b> Displays the status of the default XML agent.				
	<b>ssl</b> Displays the status of the XML agents over secure socket layer (SSL).				
	<b>tty</b> Displays the status of XML agents over telnet.				
	<b>detail</b> Displays details regarding the XML sessions.				
<b>Command Default</b>	None				
<b>Command Modes</b>	XR EXEC				
<b>Command History</b>					
<b>Usage Guidelines</b>	To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.				
<b>Task ID</b>	<table border="1"> <thead> <tr> <th>Task ID</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>config-services</td> <td>read</td> </tr> </tbody> </table>	Task ID	Operation	config-services	read
Task ID	Operation				
config-services	read				

## Example

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

```
RP/0/RP0/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
```

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

```
RP/0/RP0/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
```

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

```
RP/0/RP0/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
```

## 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 keywords or arguments.

---

**Command Default** The default VRF instance is enabled by default.

---

**Command Modes** xml agent vrf configuration  
xml agent ssl vrf configuration

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### Command History

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

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Task ID	Task ID	Operation
	config-services	read, write

---

### Example

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

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



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

## 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	
<b>default</b>	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

**Usage Guidelines** To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the 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

### Example

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

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

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

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