



# Network Configuration Protocol Commands

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This chapter includes commands to configure the Network Configuration (Netconf) Protocol. More details on the Netconf protocol and the Yang model, please see the *System Security Configuration Guide for Cisco ASR 9000 Series Routers*.

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# clear netconf-yang agent session

To clear the specified netconf agent session, use the **clear netconf-yang agent session** in EXEC mode.

**clear netconf-yang agent session** *session-id*

<b>Syntax Description</b>	<i>session-id</i> The session-id which needs to be cleared.
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<b>Command Default</b>	None
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<b>Command Modes</b>	EXEC mode
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.3.0	This command was introduced.

<b>Usage Guidelines</b>	<p>No specific guidelines impact the use of this command.</p> <p>The <b>show netconf-yang clients</b> command can be used to get the required session-id(s).</p>
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<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	config-services	read, write

## Example

This example shows how to use the **clear netconf-yang agent session** command:

```
RP/0/RSP0/CPU0:router (config) # clear netconf-yang agent session 32125
```

# clear netconf-yang agent rate-limit

To clear the set rate-limit statistics, use the **clear netconf-yang agent rate-limit** command in the appropriate mode.

**clear netconf-yang agent rate-limit**

<b>Syntax Description</b>	This command has no keywords or arguments.
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<b>Command Default</b>	None
------------------------	------

<b>Command Modes</b>	EXEC
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.3.1	This command was introduced.

<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.
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<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	config-services	read, write

## Example

This example shows how to use the **clear netconf-yang agent rate-limit** command:

```
RP/0/RSP0/CPU0:router # clear netconf-yang agent rate-limit
```

# netconf-yang agent ssh

To enable netconf agent over SSH (Secure Shell) , use the **netconf-yang agent ssh** command in the global configuration mode. To disable netconf, use the **no** form of the command.

**netconf-yang agent ssh**  
**no netconf-yang agent ssh**

<b>Syntax Description</b>	This command has no keywords or arguments.
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<b>Command Default</b>	None
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<b>Command Modes</b>	Global Configuration
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.3.0	This command was introduced.

<b>Usage Guidelines</b>	SSH is currently the supported transport method for Netconf.
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<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	config-services	read, write

## Example

This example shows how to use the **netconf-yang agent ssh** command:

```
RP/0/RSP0/CPU0:router (config) # netconf-yang agent ssh
```

# netconf-yang agent session

To set the session details (limits and timeouts) for a netconf-yang agent, use the **netconf-yang agent session** command in the appropriate mode. To remove the configured session limits and timeouts, use the **no** form of the command.

```
netconf-yang agent session { limit value | absolute-timeout value | idle-timeout value }
no netconf-yang agent session { limit value | absolute-timeout value | idle-timeout value }
```

Syntax Description	<div> <b>limit</b> <i>value</i> Sets the maximum count for concurrent netconf-yang sessions. Range is 1 to 1024. </div> <div> <b>absolute-timeout</b> <i>value</i> Enables session absolute timeout and sets the absolute session lifetime. Range is 1 to 1440. Unit is minutes. </div> <div> <b>idle-timeout</b> <i>value</i> Enables session idle timeout and sets the idle session lifetime. Range is 1 to 1440. Unit is minutes. </div>				
Command Default	By default, no limits are set				
Command Modes	Global Configuration mode				
Command History	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>Release 5.3.1</td><td>This command was introduced.</td></tr> </table>	Release	Modification	Release 5.3.1	This command was introduced.
Release	Modification				
Release 5.3.1	This command was introduced.				
Usage Guidelines	No specific guidelines impact the use of this command.				
Task ID	<table> <tr> <th>Task ID</th><th>Operation</th></tr> <tr> <td>config-services</td><td>read, write</td></tr> </table>	Task ID	Operation	config-services	read, write
Task ID	Operation				
config-services	read, write				

## Example

This command shows how to use the **netconf-yang agent session** command:

```
RP/0/RSP0/CPU0:router (config) # netconf-yang agent session limit
```

# netconf-yang agent rate-limit

To set the rate-limit for the netconf yang agent, use the **netconf-yang agent rate-limit** command in the appropriate mode. To delete the set rate-limit, use the **no** form of the command.

**netconf-yang agent rate-limit** *bytes*  
**no netconf-yang agent rate-limit** *bytes*

<b>Syntax Description</b>	<i>bytes</i> The number of bytes to process per second. Range is 4096-4294967295. It is based on the size of the request(s) from the client to the netconf server.	
<b>Command Default</b>	By default, no limit is set	
<b>Command Modes</b>	Global Configuration mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.3.1	This command was introduced.
<b>Usage Guidelines</b>	<p>No specific guidelines impact the use of this command.</p> <p>Use the <b>show netconf-yang rate-limit</b> command to check if the set limit is adequate.</p>	
<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	config-services	read, write

## Example

This example shows how to use the **netconf-yang agent rate-limit** command:

```
RP/0/RSP0/CPU0:router # netconf-yang agent rate-limit 5000
```

# netconf-yang agent yfw idle-timeout

To configure idle timeout value for the operational yang model use the **netconf-yang agent yfw idle-timeout** command. Idle timeout indicates the duration for which there is no netconf process activity. If the idle timeout value is configured, all the operational yang models that are not being used for the specified duration, are released from the memory.

**netconf-yang agent yfw idle-timeout** *time in seconds*

<b>Syntax Description</b>	Specify the time in seconds. The valid value must be between the range of 1 to 4294967295 seconds	
<b>Command Default</b>	If this command is not configured, the operational yang models are not released from the memory. To manually release the yang models, the Netconf process should be restarted.	
<b>Command Modes</b>	Global Configuration mode	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 6.0	This command was introduced.

## Example

This example shows how to use the **netconf-yang agent yfw idle-timeout** command:

```
RP/0/RSP0/CPU0:router (config) # netconf-yang agent yfw idle-timeout 60
```

# show netconf-yang clients

To display the client details for netconf-yang, use the **show netconf-yang clients** command in EXEC mode.

## show netconf-yang clients

<b>Syntax Description</b>	This command has no keywords or arguments.
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<b>Command Default</b>	None
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<b>Command Modes</b>	EXEC
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<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.3.0	This command was introduced.

<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.
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<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	config-services	read

## Example

This example shows how to use the **show netconf-yang clients** command:

```
RP/0/RSP0/CPU0:router (config) # sh netconf-yang clients
Netconf clients
client session ID|  NC version|  client connect time|  last OP time|  last
OP type|  <lock>|
22969|  1.1|  0d 0h 0m 2s|  11:11:24|
close-session|  No|
15389|  1.1|  0d 0h 0m 1s|  11:11:25|
get-config|  No|
```

**Table 1: Field descriptions**

Field name	Description
Client session ID	Assigned session identifier
NC version	Version of the Netconf client as advertised in the hello message
Client connection time	Time elapsed since the client was connected
Last OP time	Last operation time
Last OP type	Last operation type
Lock (yes or no)	To check if the session holds a lock on the configuration datastore



# show netconf-yang rate-limit

To display the statistics of the total data dropped , due to the set rate-limit, use the **show netconf-yang rate-limit** command in the appropriate mode.

**show netconf-yang rate-limit**

<b>Syntax Description</b>	This command has no keywords or arguments.	
<b>Command Default</b>	None	
<b>Command Modes</b>	EXEC	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.3.1	This command was introduced.
<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.	
<b>Task ID</b>	<b>Task ID</b>	<b>Operation</b>
	config-services	read

## Example

This example shows how to use the **show netconf-yang rate-limit** command:

```
RP/0/RSP0/CPU0:router # show netconf-yang rate-limit
rate-limit statistics
Total data dropped: 0 Bytes
```

# show netconf-yang statistics

To display the statistical details for netconf-yang, use the **show netconf-yang statistics** command in EXEC mode.

## show netconf-yang statistics

<b>Syntax Description</b>	This command has no keywords or arguments.				
<b>Command Default</b>	None				
<b>Command Modes</b>	EXEC				
<b>Command History</b>	<table> <tr> <th>Release</th><th>Modification</th></tr> <tr> <td>Release 5.3.0</td><td>This command was introduced.</td></tr> </table>	Release	Modification	Release 5.3.0	This command was introduced.
Release	Modification				
Release 5.3.0	This command was introduced.				
<b>Usage Guidelines</b>	No specific guidelines impact the use of this command.				
<b>Task ID</b>	<table> <tr> <th>Task ID</th><th>Operation</th></tr> <tr> <td>config-services</td><td>read</td></tr> </table>	Task ID	Operation	config-services	read
Task ID	Operation				
config-services	read				

## Example

This example shows how to use the **show netconf-yang statistics** command:

```
RP/0/RSP0/CPU0:router (config) # sh netconf-yang statistics
Summary statistics
```

time per request	# requests	total time	min time per request	max
avg time per request				
other	0	0h 0m 0s 0ms	0h 0m 0s 0ms	
0h 0m 0s 0ms	0h 0m 0s 0ms			
close-session	4	0h 0m 0s 3ms	0h 0m 0s 0ms	
0h 0m 0s 1ms	0h 0m 0s 0ms			
kill-session	0	0h 0m 0s 0ms	0h 0m 0s 0ms	
0h 0m 0s 0ms	0h 0m 0s 0ms			
get-schema	0	0h 0m 0s 0ms	0h 0m 0s 0ms	
0h 0m 0s 0ms	0h 0m 0s 0ms			
get	0	0h 0m 0s 0ms	0h 0m 0s 0ms	
0h 0m 0s 0ms	0h 0m 0s 0ms			
get-config	1	0h 0m 0s 1ms	0h 0m 0s 1ms	
0h 0m 0s 1ms	0h 0m 0s 1ms			
edit-config	3	0h 0m 0s 2ms	0h 0m 0s 0ms	
0h 0m 0s 1ms	0h 0m 0s 0ms			
commit	0	0h 0m 0s 0ms	0h 0m 0s 0ms	
0h 0m 0s 0ms	0h 0m 0s 0ms			
cancel-commit	0	0h 0m 0s 0ms	0h 0m 0s 0ms	
0h 0m 0s 0ms	0h 0m 0s 0ms			
lock	0	0h 0m 0s 0ms	0h 0m 0s 0ms	
0h 0m 0s 0ms	0h 0m 0s 0ms			
unlock	0	0h 0m 0s 0ms	0h 0m 0s 0ms	
0h 0m 0s 0ms	0h 0m 0s 0ms			
discard-changes	0	0h 0m 0s 0ms	0h 0m 0s 0ms	

```

0h 0m 0s 0ms | 0h 0m 0s 0ms | 0h 0m 0s 0ms |
validate      0 | 0h 0m 0s 0ms | 0h 0m 0s 0ms |
0h 0m 0s 0ms | 0h 0m 0s 0ms | 0h 0m 0s 0ms |
xml parse     8 | 0h 0m 0s 4ms | 0h 0m 0s 0ms |
0h 0m 0s 1ms | 0h 0m 0s 0ms | 0h 0m 0s 0ms |
netconf processor 8 | 0h 0m 0s 6ms | 0h 0m 0s 0ms |
0h 0m 0s 1ms | 0h 0m 0s 0ms |

```

**Table 2: Field descriptions**

Field name	Description
Requests	Total number of processed requests of a given type
Total time	Total processing time of all requests of a given type
Min time per request	Minimum processing time for a request of a given type
Max time per request	Maximum processing time for a request of a given type
Avg time per request	Average processing time for a request type

# ssh server netconf port

To configure a port for the netconf SSH server, use the **ssh server netconf port** command in the global configuration mode. To return to the default port, use the **no** form of the command.

**ssh server netconf port** *port number*  
**no ssh server netconf port***port number*

<b>Syntax Description</b>	<b>port</b> Port number for the netconf SSH server (default port number is 830). <i>port-number</i>	
<b>Command Default</b>	The default port number is 830.	
<b>Command Modes</b>	Global configuration	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 5.3.0	This command was introduced.
	Release 6.0	The <b>ssh server netconf</b> command is no longer auto completed to configure the default port. This command is now optional
<b>Usage Guidelines</b>	<p>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.</p> <p>Starting with IOS-XR 6.0.0 it is no longer sufficient to configure a netconf port to enable netconf subsystem support. ssh server netconf needs to be at least configured for one vrf.</p>	
<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	crypto	read, write
<b>Examples</b>	<p>This example shows how to use the ssh server netconf port command with port 831:</p> <pre>RP/0/RSP0/CPU0:router# configure RP/0/RSP0/CPU0:router(config)# ssh server netconf port 831</pre>	
<b>Related Commands</b>	<b>Command</b>	<b>Description</b>
	ssh server netconf	Configures the vrf(s), where netconf subsystem requests are to be received.

Command	Description
netconf-yang agent ssh	<p>Configures the <b>ssh netconf-yang backend</b> for the netconf subsystem (Required to allow the system to service netconf-yang requests).</p> <p>For more information, see the <i>Cisco ASR 9000 Series Aggregation Services Router System Management Command Reference</i>.</p>

# ssh server capability netconf-xml

To enable NETCONF reach XML subsystem via port 22, use the **ssh server capability netconf-xml** command in in the Global Configuration mode. Use **no** form of this command to disable NETCONF reach XML subsystem.

**ssh server capability netconf-xml**

<b>Syntax Description</b>	This command has no keywords or arguments.	
<b>Command Default</b>	Port 22 is the default port.	
<b>Command Modes</b>	Global configuration	
<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 6.1.4	This command was introduced.
<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>	<b>Task ID</b>	<b>Operations</b>
	crypto	read, write