Network Configuration Protocol Commands

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 CRS Routers.

- clear netconf-yang agent session, on page 2
- clear netconf-yang agent rate-limit, on page 3
- netconf-yang agent ssh, on page 4
- netconf-yang agent session, on page 5
- netconf-yang agent rate-limit, on page 6
- show netconf-yang clients, on page 7
- show netconf-yang rate-limit, on page 8
- show netconf-yang statistics, on page 9
- ssh server netconf port, on page 11
- ssh server capability netconf-xml, on page 12
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
```

**Syntax Description**

- `session-id` The session-id which needs to be cleared.

**Command Default**

None

**Command Modes**

EXEC mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.3.0</td>
<td>This command was introduced</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

No specific guidelines impact the use of this command.

The `show netconf-yang clients` command can be used to get the required session-id(s).

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>config-services</td>
<td>read,</td>
</tr>
<tr>
<td></td>
<td>write</td>
</tr>
</tbody>
</table>

**Example**

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

```
RP/0/RP0/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

Syntax Description
This command has no keywords or arguments.

Command Default
None

Command Modes
EXEC

Command History

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.3.1</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

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

Task ID

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<td>config-services</td>
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</tr>
</tbody>
</table>

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

RP/0/RP0/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 Global Configuration mode. To disable netconf, use the `no` form of the command.

**Syntax Description**

This command has no keywords or arguments.

**Command Default**

None

**Command Modes**

Global Configuration mode

**Command History**

<table>
<thead>
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<tbody>
<tr>
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**Usage Guidelines**

SSH is currently the supported transport method for Netconf.

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<td>read, write</td>
</tr>
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</table>

**Example**

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

```
RP/0/RP0/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.

```plaintext
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

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>limit value</td>
<td>Sets the maximum count for concurrent netconf-yang sessions. Range is 1 to 1024.</td>
<td></td>
</tr>
<tr>
<td>absolute-timeout value</td>
<td>Enables session absolute timeout and sets the absolute session lifetime. Range is 1 to 1440. Unit is minutes.</td>
<td></td>
</tr>
<tr>
<td>idle-timeout value</td>
<td>Enables session idle timeout and sets the idle session lifetime. Range is 1 to 1440. Unit is minutes.</td>
<td></td>
</tr>
</tbody>
</table>

### Command Default

By default, no limits are set.

### Command Modes

Global Configuration mode

### Command History

<table>
<thead>
<tr>
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### Usage Guidelines

No specific guidelines impact the use of this command.

### Task ID

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<td>read, write</td>
</tr>
</tbody>
</table>

### Example

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

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

**Syntax Description**

`bytes` 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.

**Command Default**

By default, no limit is set

**Command Modes**

Global Configuration mode

**Command History**

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</table>

**Usage Guidelines**

No specific guidelines impact the use of this command.

Use the show netconf-yang rate-limit command to check if the set limit is adequate.

**Task ID**

- config-services read, write

**Example**

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

```
RP/0/RP0/CPU0:router # netconf-yang agent rate-limit 5000
```
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

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

EXEC mode

Command History

<table>
<thead>
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Usage Guidelines

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Task ID

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<tr>
<td>config-services</td>
<td>read</td>
</tr>
</tbody>
</table>

Example

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

```
RP/0/RP0/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

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

**Syntax Description**

This command has no keywords or arguments.

**Command Default**

None

**Command Modes**

EXEC

**Command History**

<table>
<thead>
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**Usage Guidelines**

No specific guidelines impact the use of this command.

**Task ID**

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>config-services</td>
<td>read</td>
</tr>
</tbody>
</table>

**Example**

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

```
RP/0/RP0/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.

**Syntax Description**

This command has no keywords or arguments.

**Command Default**

None

**Command Modes**

EXEC mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.3.0</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**Usual Guidelines**

No specific guidelines impact the use of this command.

**Task ID**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>config-services</td>
<td>read</td>
</tr>
</tbody>
</table>

**Example**

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

```
RP/0/RP0/CPU0:router (config) # sh netconf-yang statistics
Summary statistics
         # requests| total time| min time per request| max
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|
generate-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|
```
# Network Configuration Protocol Commands

show netconf-yang statistics

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requests</td>
<td>Total number of processed requests of a given type</td>
</tr>
<tr>
<td>Total time</td>
<td>Total processing time of all requests of a given type</td>
</tr>
<tr>
<td>Min time per request</td>
<td>Minimum processing time for a request of a given type</td>
</tr>
<tr>
<td>Max time per request</td>
<td>Maximum processing time for a request of a given type</td>
</tr>
<tr>
<td>Avg time per request</td>
<td>Average processing time for a request type</td>
</tr>
</tbody>
</table>
ssh server netconf port

To configure a port for the netconf SSH server, use the `ssh server netconf port` command in Global Configuration mode. To return to the default port, use the `no` form of the command.

```
ssh server netconf port  port number
```

**Syntax Description**

- **port**
  - Port number for the netconf SSH server (default port number is 830).
  - `port-number`

**Command Default**

The default port number is 830.

**Command Modes**

Global Configuration mode

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release 2.0</td>
<td>This command was introduced.</td>
</tr>
<tr>
<td>Release 3.8.0</td>
<td>The <code>vrf</code> keyword was supported.</td>
</tr>
<tr>
<td>Release 6.0</td>
<td>The <code>ssh server netconf</code> command is no longer auto completed to configure the default port. This command is now optional</td>
</tr>
</tbody>
</table>

**Usage Guidelines**

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.

**Task ID**

- `crypto` `read, write`

**Examples**

This example shows how to use the `ssh server netconf port` command with port 831:

```
RP/0/RP0/CPU0:router# configure
RP/0/RP0/CPU0:router(config)# ssh server netconf port 831
```

**Related Commands**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ssh server netconf</code></td>
<td>Configures the vrf(s), where netconf subsystem requests are to be received.</td>
</tr>
<tr>
<td><code>netconf-yang agent ssh</code></td>
<td>Configures the <code>ssh netconf-yang backend</code> for the netconf subsystem (Required to allow the system to service netconf-yang requests). For more information, see the <code>Cisco ASR 9000 Series Aggregation Services Router System Management Command Reference</code>.</td>
</tr>
</tbody>
</table>
ssh server capability netconf-xml

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

**Syntax Description**

This command has no keywords or arguments.

**Command Default**

Port 22 is the default port.

**Command Modes**

Global configuration

**Command History**

<table>
<thead>
<tr>
<th>Release</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1.4</td>
<td>This command was introduced.</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Task ID</th>
<th>Operations ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>crypto</td>
<td>read, write</td>
</tr>
</tbody>
</table>