



# System Health Check Commands

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This module describes the system health check commands available on the router. These commands are used to proactively monitor the health of the router.

For detailed information about system health check concepts, configuration tasks, and examples, see the *System Health Check* chapter in the *System Monitoring Configuration Guide for Cisco NCS 5500 Series Routers*, *System Monitoring Configuration Guide for Cisco NCS 540 Series Routers*, or *System Monitoring Configuration Guide for Cisco NCS 560 Series Routers*.

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# healthcheck

To configure the health check cadence and metrics of a system, use the **healthcheck** command in Configuration mode. To disable health check, use the **no** form of this command.



**Note** Health check service is an optional RPM. You must download and install the package explicitly to use the service.

```
healthcheck cadence <cadence-configuration> {enable} {metric | cpu | fabric-health | filesystem | fpd
| free-mem | shared-mem}
no healthcheck metric <metric-name>
```

Syntax Description		
<b>cadence</b>		Collects data about system health for enabled metrics at a configured time interval. The cadence can range from 30 to 1800 seconds.
<b>enable</b>		Enables health check service on the Route Processor (RP).
<b>metric</b> {cpu   fabric-health   filesystem   fpd   free-mem   shared-mem}		Specifies the configurable metrics based on a threshold that applies only to system resources (CPU, free-mem, shared-mem and filesystem).

**Command Default** Health check is disabled.

**Command Modes** XR Config mode

Command History	Release	Modification
	Release 7.1.1	This command was introduced.

**Usage Guidelines** None

Task ID	Task ID	Operations
	root-system or diag or cisco-support or monitor or root-lr	read, write

## Examples

This example shows how to enable health check service:

```
Router(config)#healthcheck enable
```

This example shows how to configure cadence (in seconds) at which data about system health is collected:

```
Router(config)#healthcheck cadence 30
```

This example shows how to configure the average utilization threshold of CPU metric:

```
Router(config)#healthcheck metric cpu avg-util 15-minute
```

# healthcheck metric

To disable the health check for the metrics of a system, use the **healthcheck metric** command in Configuration mode.

**healthcheck metric** { **cpu** | **fabric-health** | **filesystem** | **fpd** | **free-mem** | **shared-mem** | **platform** | **redundancy** | **interface-counters** | **asic-errors** | **fabric-stats** } **disable**

Syntax Description	Option	Description
	<b>cpu</b>	Specifies system health data for cpu configurations
	<b>fabric-health</b>	Specifies system health data for fabric configurations
	<b>filesystem</b>	Specifies system health data for file-system usage configurations
	<b>fpd</b>	Specifies system health data for fpd configurations
	<b>free-mem</b>	Specifies system health data for free memory
	<b>shared-mem</b>	Specifies system health data for shared memory
	<b>platform</b>	Specifies system health data for platform configuration
	<b>redundancy</b>	Specifies system health data for redundancy configuration
	<b>interface-counters</b>	Specifies system health data for interface counters
	<b>asic-errors</b>	Specifies system health data for asic-errors
	<b>fabric-stats</b>	Specifies system health data for fabric statistics
	<b>disable</b>	Disables the collection of health-check information

**Command Default** Health-check for metrics is enabled.

**Command Modes** XR Config mode

Command History	Release	Modification
	Release 7.1.1	This command was introduced.

**Usage Guidelines** None

Task ID	Task ID	Operations
	monitor	read, write, execute

**Examples** This example shows how to disable health check service for platform:

```
Router(config)#healthcheck metric platform disable  
Router(config)#commit
```

This example shows how to disable health check service for interface-counters:

```
Router(config)#healthcheck metric intf-counters disable  
Router(config)#commit
```

## show healthcheck metric

To view the detailed information about the utilization and state of each metric used to check the health of the system, use the **show healthcheck metric** command in EXEC mode.

```
show healthcheck metric cpu | free-mem | shared-mem | filesystem | fpd | fabric-health |
platform | redundancy | interface-counters { summary | | detail } | asic-errors { summary
| | detail } | fabric-stats { summary | | detail }
```

<b>Syntax Description</b>	<b>cpu   free-mem   shared-mem   filesystem</b>	Name of the system resource for which the metric is viewed.
	<b>fpd   fabric-health   platform   redundancy</b>	Name of the infrastructure service for which the metric is viewed.
	<b>interface-counters   asic-errors   fabric-stats</b>	Name of the counters for which the metric is viewed.

**Command Default** None

**Command Modes** XR EXEC mode

<b>Command History</b>	<b>Release</b>	<b>Modification</b>
	Release 7.1.1	This command was introduced.

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

<b>Task ID</b>	<b>Task ID</b>	<b>Operations</b>
	monitor	read

### Examples

This is sample output from the **show healthcheck metric** command to view the CPU usage:

```
Router#show healthcheck metric cpu
CPU Metric State: Normal
Last Update Time: <date-time>
CPU Service State: Enabled
Number of Active Nodes: 2
Configured Thresholds:
  Minor: 20%
  Severe: 50%
  Critical: 75%
Node Name: 0/RP0/CPU0
  CPU 1 Minute Average Usage: 6%
  CPU 5 Minute Average Usage: 5%
  CPU 15 Minute Average Usage: 5% *
Node Name: 0/0/CPU0
  CPU 1 Minute Average Usage: 4%
  CPU 5 Minute Average Usage: 4%
  CPU 15 Minute Average Usage: 3% *
** indicates the traceked average CPU utilization
```

**Examples**

This is sample output from the **show healthcheck metric platform**:

```
Router#show healthcheck metric platform
Platform Metric State: Normal =====> Health of the metric
Last Update Time: 25 Jun 05:17:03.508172 =====> Timestamp at which the metric data was
collected
Platform Service State: Enabled =====> Service state of Platform
Number of Racks: 1 =====> Total number of racks in the testbed
Rack Name: 0
Number of Slots: 12
Slot Name: RP0
Number of Instances: 2
Instance Name: CPU0
Node Name 0/RP0/CPU0
Card Type 8800-RP
Card Redundancy State Active
Admin State NSHUT
Oper State IOS XR RUN
```

**Examples**

This is sample output from the **show healthcheck metric interface-counters**:

```
Router#show healthcheck interface-counters summary
Interface-counters Health State: Normal =====> Health of the metric
Last Update Time: 25 Jun 05:59:33.965851 =====> Timestamp at which the metric data was
collected
Interface-counters Service State: Enabled =====> Service state of the metric
Interface MgmtEth0/RP0/CPU0/0 =====> Configured interface for healthcheck monitoring
Counter-Names Count Average Consistently-Increasing
-----
output-buffers-failures 0 0 N
Counter-Names =====> Name of the counters
Count =====> Value of the counter collected at "Last Update Time"
Average =====> Average of all values available in buffer
Consistently-Increasing =====> Trend of the counter values, as per data available in buffer
Router#show healthcheck interface-counters detail all
Last Update Time: 25 Jun 06:01:35.217089 =====> Timestamp at which the metric data was
collected
Interface MgmtEth0/RP0/CPU0/0 =====> Configured interface for healthcheck monitoring
Following table displays data for last <x=5> values collected in periodic cadence intervals
-----
Counter-name Last 5 values
LHS = Earliest RHS = Latest
-----
output-buffers-failures 0 0 0 0 0
parity-packets-received 0 0 0 0 0
```

# show healthcheck report

To view the health check report for enabled metrics in the system, use the **show healthcheck report** command in XR EXEC mode.

**show healthcheck report**

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

**Command Default** None

**Command Modes** XR EXEC mode

Command History	Release	Modification
	Release 7.1.1	This command was introduced.

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

Task ID	Task ID	Operations
	monitor	read

## Examples

This is sample output from the **show healthcheck report** command:

```
Router#show healthcheck report
Healthcheck report for enabled metrics
cpu
  State: Normal
free-memory
  State: Normal
filesystem
  State: Normal
shared-memory
  State: Normal
fpd
  State: Warning
One or more FPDs are in NEED UPGD state
fabric-health
  State: Normal
```

# show healthcheck status

To view the status of health check service and configured parameters for each of the enabled metrics, use the **show healthcheck status** command in XR EXEC mode.

**show healthcheck status**

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

**Command Default** None

**Command Modes** XR EXEC mode

Command History	Release	Modification
	Release 7.1.1	This command was introduced.

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

Task ID	Task ID	Operations
	monitor	read

## Examples

This is sample output from the **show healthcheck status** command:

```
Router#show healthcheck status
Healthcheck status: Enabled

Collector Cadence: 60 seconds

System Resource metrics
  cpu
    Thresholds: Minor: 10%
                Severe: 20%
                Critical: 30%

    Tracked CPU utilization: 15 min avg utilization

  free-memory
    Thresholds: Minor: 10%
                Severe: 8%
                Critical: 5%

  filesystem
    Thresholds: Minor: 80%
                Severe: 95%
                Critical: 99%

  shared-memory
    Thresholds: Minor: 80%
                Severe: 95%
                Critical: 99%
```



```
Infra Services metrics
  fpd
  fabric-health
```

## Use-case

To configure a system healthcheck use-case, use the **use-case** command in the healthcheck configuration mode.

Prior to Cisco IOS XR Release 24.1.1:

```
use-case { asic-reset { disable | drop-tolerance drop-tolerance-value } | packet-drop { disable | drop-tolerance drop-tolerance-value } }
```

From Cisco IOS XR Release 24.1.1 onwards:

```
use-case { asic-reset { disable | drop-tolerance drop-tolerance-value } | packet-drop { disable | window-size window-size-value | tolerance { high | medium | low } drop-tolerance-value } }
```

Syntax Description		
<b>asic-reset</b>		Specify ASIC reset system healthcheck use-case
<b>disable</b>		Disable ASIC reset or packet-drop use-case. By default the use-case is enabled.
<b>drop-tolerance</b> <i>drop-tolerance-value</i>		Configure packet-drop tolerance value Default value: 10 Range for <i>drop-tolerance-value</i> : 0 - 100 This option is removed from Release 24.1.1 onwards
<b>packet-drop</b>		Specify packet-drop system healthcheck use-case
<b>window-size</b> <i>window-size-value</i>		Configure the number of cadence intervals to alert you of packet-drops. Default value: 10 Range for <i>window-size-value</i> : 5-20 This option is available from Release 24.1.1 onwards
<b>tolerance</b> { <b>high</b>   <b>medium</b>   <b>low</b> } <i>drop-tolerance-value</i>		Specify the NPU trap tolerance level and the drop-tolerance value. Range for <i>drop-tolerance-value</i> : 0-1000000 This option is available from Release 24.1.1 onwards

**Command Default** Health check use-case is enabled.

**Command Modes** healthcheck configuration mode

Command History	Release	Modification
	Release 24.2.1	<b>window-size</b> and <b>tolerance</b> keywords are introduced <b>drop-tolerance</b> keyword is removed
	Release 7.3.3 / Release 7.5.4	This command was introduced

**Usage Guidelines**

System Health check and use-cases are not part of the base package and you must explicitly install the 'xr-healthcheck' optional package to use this service.

Task ID	Task ID	Operations
	root-system or diag or cisco-support or monitor or root-lr	read, write

**Example**

This example shows you how to configure the ASIC reset use-case:

```
Router(config)# healthcheck
Router(config-healthcheck)# use-case asic-reset drop-tolerance 10
Router(config-healthcheck)# enable
```

This example shows you how to configure the packet-drop use-case prior to Cisco IOS XR Release 24.1.1:

```
Router(config)# healthcheck
Router(config-healthcheck)# use-case packet-drop drop-tolerance 10
Router(config-healthcheck)# enable
```

This example shows you how to configure the packet-drop use-case from Cisco IOS XR Release 24.1.1 onwards:

```
Router# conf t
Router(config)# healthcheck
Router(config-healthcheck)# use-case packet-drop window-size 5
Router(config-healthcheck)# use-case packet-drop tolerance high 100
Router(config-healthcheck)# enable
Router(config-healthcheck)# commit
```

