

Node Health Report

- [Node Health Report](#)
- [opReports 3.5.1 and newer include improvements to memory related fields in the Node Health Report](#)

Node Health Report

The Node Health report display health-related attributes for all selected nodes for a given period. Attributes displayed are: Status, Device, Availability, Interface Availability, %CPU, 95th% CPU, Max %CPU, CPU Exc., %Mem Free, 95th% Mem Used, Max %Mem Used, %Mem Util, %IO/VIR Mem Free, 95th% IO Mem Used, Max %IO Mem Used, %IO/VIR Mem Util. As of version 3.1.4 when this report is exported to XLSX and CSV formats the following columns of information are also displayed: Group, %IO Mem Free.

The report also includes two columns with the detected (abnormal) Conditions and the recommended Actions.

If you pass this report the option `exceptions=true`, then only nodes with exceptional conditions present are shown; the default is to show all nodes.

Below shows the outcome of a default Node Health Report or where `exceptions=false`. The full report can be viewed by downloading the ZIP file [HERE](#)

opReports 3.1.4Views -

Modules -Help -User: nimis -

View report as ZIP

Node Health Report

InfoCSVHTMLXLSXZIPEmailDelete

Coverage: 7 day(s), from 2018-07-09T19:20:56 to 2018-07-16T19:20:56 AEST
Generated: 2018-07-16T19:21:31 AEST

Branches

Cloud

Status	Device	Availability	Interface Availability	%CPU	95th% CPU	Max %CPU	CPU Exc.	%Mem Free	95th% Mem Used	Max %Mem Used	%Mem Util	%IO/Swap Mem Free	95th% IO/Swap Mem Used	Max %IO/Swap Mem Used	%IO/Swap Mem Util	Conditions	Actions
	vietna-server1	100.000	100.000	2.70	3.12	86.72	96	84.76	16.41	17.30	15.24	N/A	N/A	N/A	N/A		

Surfers_Paradise

Status	Device	Availability	Interface Availability	%CPU	95th% CPU	Max %CPU	CPU Exc.	%Mem Free	95th% Mem Used	Max %Mem Used	%Mem Util	%IO/Swap Mem Free	95th% IO/Swap Mem Used	Max %IO/Swap Mem Used	%IO/Swap Mem Util	Conditions	Actions
	go-router1	99.951	100.000	5.20	13.39	22.87	2	53.60	44.30	56.35	46.40	67.73	12.26	12.31	12.27	1: Device has low availability	1: Investigate causes for low availability
	go-switch1	99.953	63.245	5.26	6.00	10.45	0	57.82	42.16	42.26	42.18	31.97	67.83	68.55	68.03	1: Device has low availability 2: Device has very low interface availability	1: Investigate causes for low availability 2: Investigate causes for very low interface availability

USA_West_Coast

Status	Device	Availability	Interface Availability	%CPU	95th% CPU	Max %CPU	CPU Exc.	%Mem Free	95th% Mem Used	Max %Mem Used	%Mem Util	%IO/Swap Mem Free	95th% IO/Swap Mem Used	Max %IO/Swap Mem Used	%IO/Swap Mem Util	Conditions	Actions
	meatball	99.951	100.000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1: Device has low availability	1: Investigate causes for low availability
	midgard	99.945	63.235	5.30	6.00	10.44	0	57.82	42.16	42.24	42.18	31.97	67.83	68.55	68.03	1: Device has low availability 2: Device has very low interface availability	1: Investigate causes for low availability 2: Investigate causes for very low interface availability

Brisbane

Surfers_Paradise

Status	Device	Availability	Interface Availability	%CPU	95th% CPU	Max %CPU	CPU Exc.	%Mem Free	95th% Mem Used	Max %Mem Used	%Mem Util	%IO/Swap Mem Free	95th% IO/Swap Mem Used	Max %IO/Swap Mem Used	%IO/Swap Mem Util	Conditions	Actions
	bne-router1	99.941	100.000	5.15	13.41	22.17	1	53.58	44.30	57.54	46.42	67.73	12.26	12.31	12.27	1: Device has low availability	1: Investigate causes for low availability
	bne-server1	99.924	100.000	6.46	18.09	84.94	132	35.05	73.02	75.66	64.95	96.00	5.91	6.10	4.00	1: Device has low availability	1: Investigate causes for low availability
	bne-switch1	99.953	63.252	5.16	5.98	10.07	0	57.82	42.16	42.25	42.18	31.97	67.83	68.55	68.03	1: Device has low availability 2: Device has very low interface availability	1: Investigate causes for low availability 2: Investigate causes for very low interface availability

Charlotte

USA_East_Coast

To create a Node Health Report showing **exceptions only**, click the box that the arrow points to in the image below.

Create On-Demand Report



Report Description (optional) Description of the report

Report Type Node Report

Node Selection All Active Nodes

Start Date/Time now - 7 days ? **End Date/Time** now ?

From Hours ? 0 **To Hours** ? 24 **Days** ? Mon-Sun

Formats ☒ HTML ☒ CSV ☒ XLSX

Report Name (Optional) Report Name ?

Node Name Display Plain Node Name ?

Interface Display Interface Description ?

Include Embedded Graphs ☒

Custom Report Title (Optional) Custom Report Title ?

Exceptions Report ☐ Exceptions Only (Health Report)

WAN Report Level Default

Show Util Thresholds ☒ **Show only Util** ☐

Utilisation Threshold 80 % **Min Over-Threshold Count** 1

Show 95th Percentile Combined In and Out Utilisation ?

Authorised Viewers ?

Generate **Cancel** **Advanced Options**

A Node Health Report using the same devices where `exceptions=true` looks similar to the image below. The full report can be viewed by downloading the ZIP file [HERE](#)

opReports 3.1.4 Views - Modules - Help - User: nmio -															
Node Health Exception Report															
Coverage: 7 day(s), from 2018-07-09T19:48:53 to 2018-07-16T19:48:53 AEST															
Generated: 2018-07-16T19:49:11 AEST															
Branches															
Cloud															
No devices with exceptions in group Branches and location Cloud.															
Surfers_Paradise															
Status	Device	Availability	Interface Availability	%CPU	95th% CPU	Max %CPU	CPU Exc.	%Mem Free	95th% Mem Used	Max %Mem Used	%Mem Util	%IO/Swap Mem Free	95th% IO/Swap Mem Used	Max %IO/Swap Mem Used	%IO/Swap Mem Util
	go-router1	99.951	100.000	5.20	13.39	22.87	2	53.60	44.30	58.35	46.40	87.73	12.26	12.31	12.27
	go-switch1	99.953	63.245	5.26	6.00	10.45	0	57.82	42.16	42.26	42.18	31.97	67.83	68.55	68.03
USA_West_Coast															
Status	Device	Availability	Interface Availability	%CPU	95th% CPU	Max %CPU	CPU Exc.	%Mem Free	95th% Mem Used	Max %Mem Used	%Mem Util	%IO/Swap Mem Free	95th% IO/Swap Mem Used	Max %IO/Swap Mem Used	%IO/Swap Mem Util
	meatball	99.951	100.000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	midgard	99.945	63.235	5.30	6.00	10.44	0	57.82	42.16	42.24	42.18	31.98	67.83	68.55	68.02
Brisbane															
Surfers_Paradise															
Status	Device	Availability	Interface Availability	%CPU	95th% CPU	Max %CPU	CPU Exc.	%Mem Free	95th% Mem Used	Max %Mem Used	%Mem Util	%IO/Swap Mem Free	95th% IO/Swap Mem Used	Max %IO/Swap Mem Used	%IO/Swap Mem Util
	bne-router1	99.941	100.000	5.15	13.41	22.17	1	53.58	44.30	57.54	46.42	87.73	12.26	12.31	12.27
	bne-server1	99.924	100.000	8.47	18.15	84.94	135	35.03	73.09	75.66	64.97	96.00	5.91	6.10	4.00
	bne-switch1	99.953	63.252	5.15	5.98	10.07	0	57.82	42.16	42.25	42.18	31.97	67.83	68.55	68.03
Charlotte															
USA_East_Coast															
Status	Device	Availability	Interface Availability	%CPU	95th% CPU	Max %CPU	CPU Exc.	%Mem Free	95th% Mem Used	Max %Mem Used	%Mem Util	%IO/Swap Mem Free	95th% IO/Swap Mem Used	Max %IO/Swap Mem Used	%IO/Swap Mem Util
	char-router1	99.894	99.999	5.22	13.20	22.73	3	53.60	44.29	58.15	46.40	87.73	12.26	12.31	12.27

The formulas used for calculation of the reporting conditions can be tuned and adjusted by the user:

The section `opreport_rules` (in `conf/opCommon.nmis` in `opReports 3.x`, or `opReports.nmis` in version 2.x) defines the threshold values for the following conditions:

Device Availability = Condition: "Device has LOW or VERY LOW availability"

Action: Investigate causes for low availability

Formula used for Calculation:

- Very Low device availability less than 99.9
- Low device availability less than 99.999

Interface Availability = Condition: "Device has LOW or VERY LOW interface availability"

Action: Investigate causes for low interface availability

Formula used for Calculation:

- Very Low interface availability less than 80
- Low interface availability less than 95

CPU Utilisation = Condition: "Device has VERY HIGH, HIGH or MODERATE CPU utilisation"

Action: Investigate causes for CPU utilisation

Formula used for Calculation:

- Very High CPU utilisation: greater than 30%
- High CPU utilisation: greater than 20%
- Moderate CPU utilisation: greater than 12%

If the node has multiple CPUs then the utilisation measure is averaged over all CPUs.

CPU Exceptions

The count of times the CPU utilisation exceeded the "CPU Exception Threshold" of 20%. If the node has multiple CPUs then this is the sum of the exception counts of all CPUs.

Memory Utilisation = Condition: "Device has VERY LOW or LOW main memory free"

Action: Investigate causes for free low main memory

Formula used for Calculation:

- Very Low free main memory less than 10
- Low free main memory less than 25

IO or Virtual Memory Utilisation = Condition: "Device has VERY LOW or LOW IO or Virtual memory free"

Action: Investigate causes for low free IO or Virtual memory

Formula used for Calculation:

- Very Low free main memory less than 10
- Low free main memory less than 25

opReports 3.5.1 and newer include improvements to memory related fields in the Node Health Report

`/path/to/omk/conf/opCommon.json` has a new setting with default being `/opreports/on_invalid_hrcachemem_use_only_hrmem=0`.

- With `/path/to/omk/conf/opCommon.json` set at `opreports/opreports/on_invalid_hrcachemem_use_only_hrmem=1`, `opReports` attempts to detect situations where invalid `hrCacheMemUsed` and `hrCacheMemSize` values are being reported that would cause the memory related fields in the Node Health Report to return as negative values.
 - In such a case (detect memory related fields in the Node Health Report would negative values), `hrCacheMemUsed` and `hrCacheMemSize` will not be used in the calculation of memory related fields and a suitable entry to this effect will be logged in `opReports.log`.
 - This issue has been detected in docker instances where `hrCacheMemUsed` and `hrCacheMemSize` values were that of the docker host and not that of the docker instance itself.
- With `/path/to/omk/conf/opCommon.json` set at `opreports/opreports/on_invalid_hrcachemem_use_only_hrmem=0`:
 - In such a case (detect memory related fields in the Node Health Report would negative values), affected memory related fields will return **N/A** and a suitable entry to this effect will be logged in `opReports.log`.

