Node Health Report

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

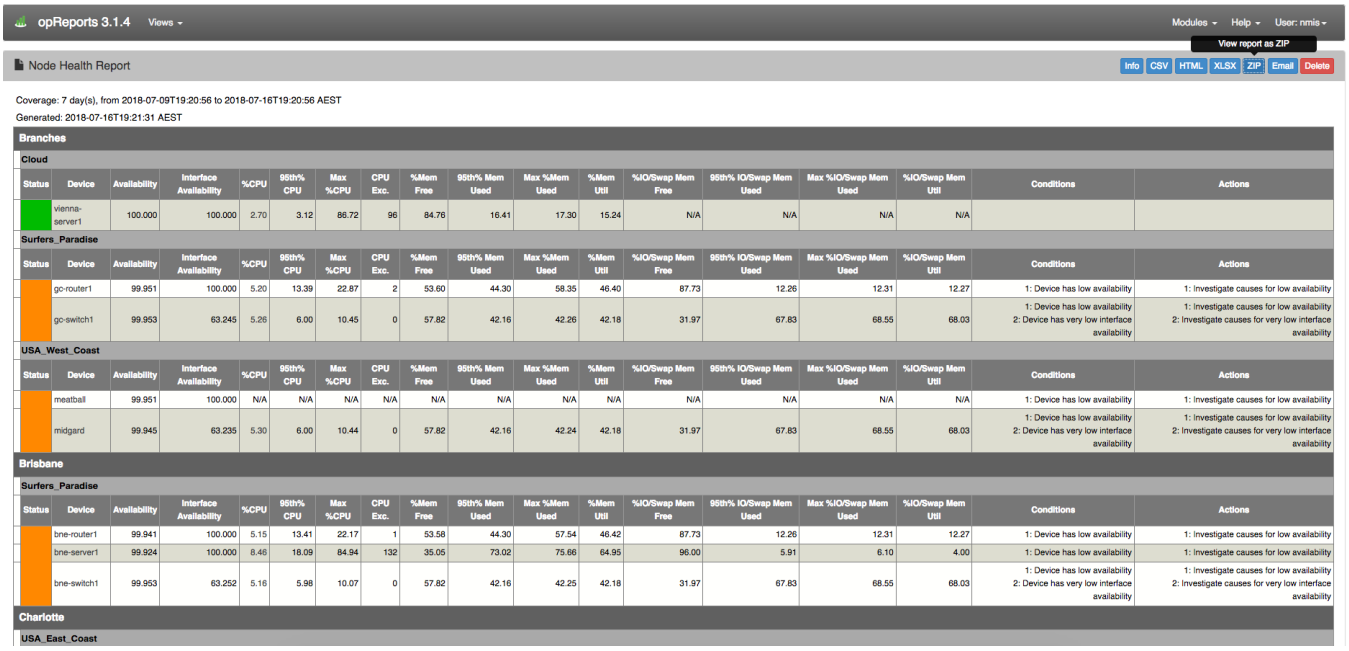
Node Health Report

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 3.1.4 Views — Modules Help User: nmis

Node Health Report — View report as ZIP — Info CSV HTML XLSX ZIP Email Delete

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
	vienna-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
	gc-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	1: Device has low availability	1: Investigate causes for low availability
	gc-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

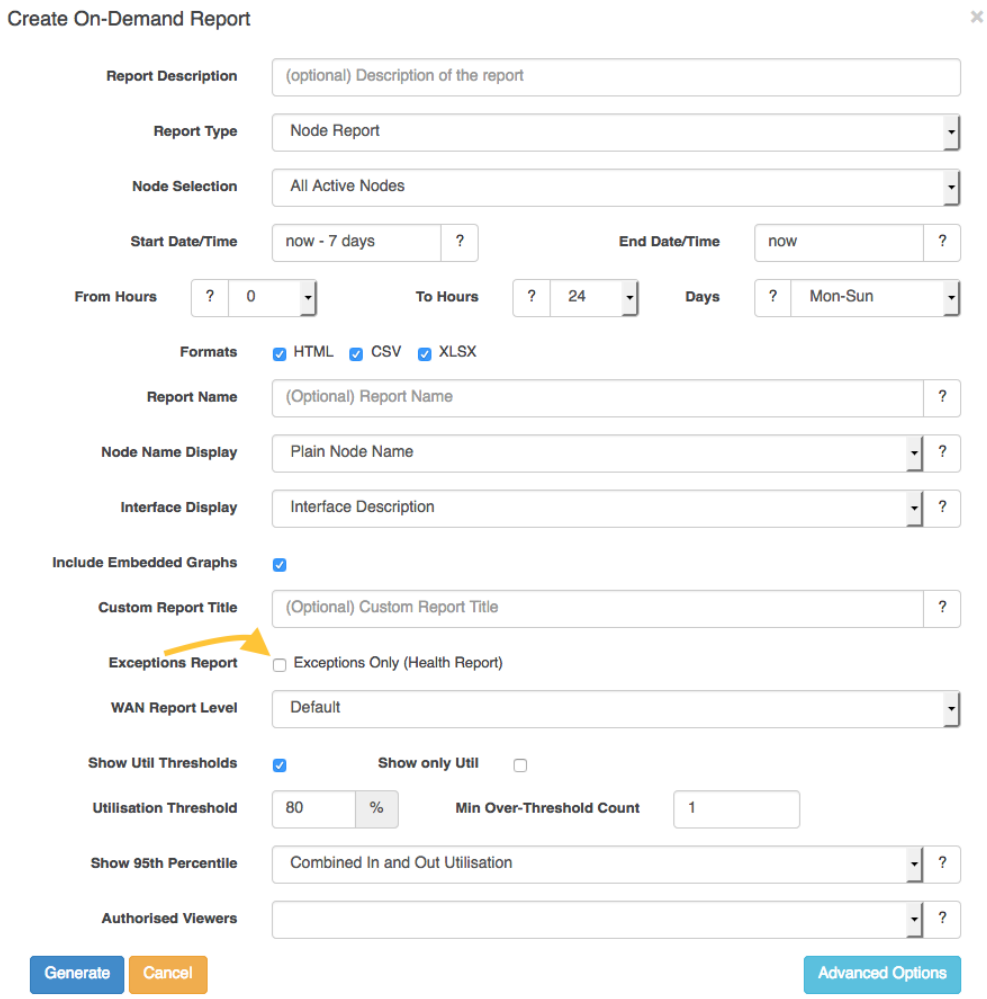
Surfers_Paradise

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	87.73	12.26	12.31	12.27	1: Device has low availability	1: Investigate causes for low availability
	bne-server1	99.924	100.000	8.46	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

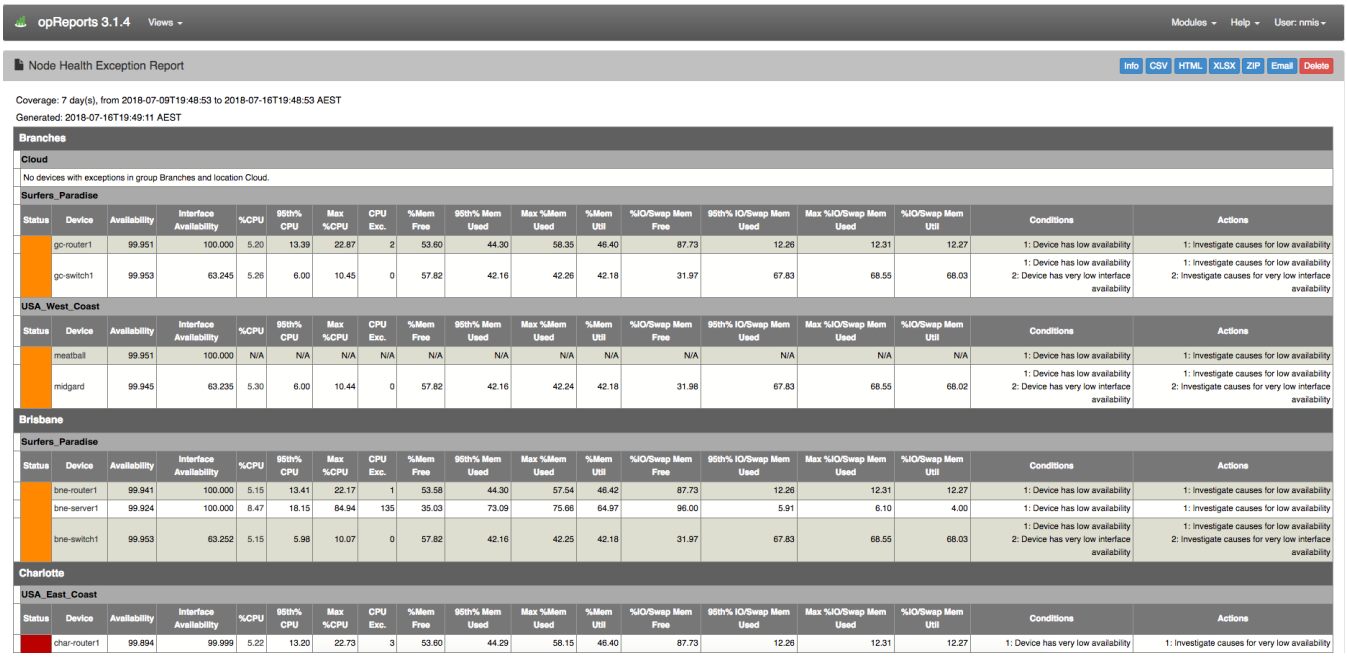
Charlotte

USA_East_Coast

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



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



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.