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Load Computation Metrics

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Load Score

The load score is a time-averaged measure of the load on a given container. Load scores are published on the 'collector' containers and gives you an indication of the processing load of that specific collector. This is reported as a number between 1 and 100. The scores are mapped to low, medium or high severity zones as explained in the following table. A collector that is consistently operating in the High zone will mean that the collector has reached peak capacity for the given CPU/Memory resource profile.

Table 1.Load Score of a Collector

Severity	Load score
High	> 75
Medium	> 50
Low	< 50

Load Score

The load score for a collector is calculated using several metrics. The metrics and their values for each collector is displayed in the modal that pops up on clicking the icon in the Load column in the Cisco Crosswork UI.

Service Status 🕐 Data as of 21-Jun-2022 03:02:51 PM PDT 🏟									
Services 1	Status	Load	Load Score Metrics	×	mory Used/Max (MB)	Network In/Out (MB)	Network In/Out Rate (B/ ?)	Disk In/Out (MB)	Actions
cli collector	🕜 Running	A				260 / 161	59 / 72	65.9 / 3000	
controller gateway	🕜 Running	-	Overall load score for the service container is low 26			4850 / 5090	1588 / 1479	17.2 / 1570	
gnmi collector	🚱 Running	A	Container CPU Percentage 0.14			286 / 162	40 / 60	0.46 / 2850	
icon	🕢 Running	-	Container Memory Percentage 56,22			148 / 133	60 / 66	103 / 2700	
image manager	🚱 Running	-	No Of Jobs Received 0			609 / 1020	289 / 133	105 / 4250	
mdt collector	🕢 Running	A	No Of Skipping Cadence 0			303 / 161	27 / 47	22.1 / 2890	
netconf collector	🚱 Running	A	No Of Status Sent 0		4	300 / 160	68 / 75	20.9 / 3210	
oam manager	🕢 Running	-	For details on load score computation, Click here		4050 / 1680	603 / 1482	75.8 / 12600		
snmp collector	🕜 Running	•	To actual of road source comparation, one nete			301 / 160	46 / 67	23.7 / 3430	
syslog collector	🕜 Running	A	0.13 % 1149.90 320	5.207 OU	,	327 / 267	165 / 153	0.59 / 3080	

Load score of each metric = *MetricScore x MetricWeight*

Overall Load score of a collector = (Sum of load score of all the metrics)/10

MetricWeight - A value between 1 to 100 representing the weight that the metric to asserts towards overall load computation. While the number of metrics can change over releases, the sum of all the *MetricWeights* will always be equal to 100.

MetricScore - A value between 0 and 10 that represents the current rating of the metric in a scale between its pre-defined minimum and maximum values. Since each *MetricScore* is rated on a scale of 1 to 10, the overall load score is scaled down by 10.

The *MetricWeight* and *MetricScore* are configured in the <u>Load score Configuration map</u>. These values are determined by empirical testing and cannot be changed.

Load Score Configuration Map

The load score configuration map assigns fixed values for different metrics as shown in the following tables.

Table 2.MetricScore of each metric

Metric	Description	MetricScore
CPU usage	One minute CPU utilization of a collector as a percentage of maximum CPU resources assigned to it. CDG reports CPU percentage per CPU for each profile as: Standard CDG : If the CPU utilization is 800% (8vCPUs Standard Profile), CDG reports this as 800/8 = 100% Extended CDG : If the CPU utilization is 1600% (16vCPUs Extended Profiles), CDG reports this as 1600/16 = 100%	0 to 10%: 1 10 to 20 %: 2 20 to 30 %: 3 30 to 40 %: 4 40 to 50%: 5 50 to 60%: 6 60 to 70%: 7 70 to 80 %: 8 80 to 90%: 9 90 to100%: 10
Memory usage	Memory consumed by collector as a percentage of maximum memory resource assigned to it.	0 to 10 % : 1 10 t0 20 %: 2 20 to 30 %: 3 30 to 40 %: 4 40 to 50%: 5 50 to 60%: 6 60 to 70%: 7 70 to 80 %: 8 80 to 90%: 9 90 to 100%: 10
Number of skipped cadence	Number of jobs with a skipped cadence. Note: This metric applies only to poll-based (SNMP/CLI /NETCONF) collectors.	< 50: 3 > 50: 7 > 80: 10
Number of control plane status updates	Number of control plane status updates sent by the collector.	< 100: 1 > 100: 8
Number of control plane jobs received	Number of control plane jobs received from Magellan	< 100: 2 > 100: 8

Table 3. MetricWeight for Poll-based collectors (CLI, SNMP and NETCONF)

Metric	MetricWeight
Skipped cadence	10

Memory Usage	40
CPU Usage	40
Control Plane status updates	5
Control plane jobs received	5

 Table 4.MetricWeight for Event Based collectors(MDT , GNMI and SYSLOG):

Metric	MetricWeight		
Memory Usage	50		
CPU Usage	40		
Control Plane status updates	5		
Control plane Jobs Received	5		