

NVIDIA Bright Cluster Manager 9.2

Developer Manual

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Preface

Welcome to the *Developer Manual* for NVIDIA Bright Cluster Manager 9.2.

0.1 About This Manual

This manual is aimed at helping developers who would like to program the NVIDIA Bright Cluster Manager in order to enhance or alter its functionality. It is not intended for end users who simply wish to submit jobs that run programs to workload managers, which is discussed in the *User Manual*. The developer is expected to be reasonably familiar with the parts of the *Administrator Manual* that is to be dealt with—primarily CMDaemon, of which cmsh and Bright View are the front ends.

This manual discusses the Python API to CMDaemon, and also covers how to program for metric collections.

0.2 About The Manuals In General

Regularly updated versions of the NVIDIA Bright Cluster Manager 9.2 manuals are available on updated clusters by default at `/cm/shared/docs/cm`. The latest updates are always online at <http://support.brightcomputing.com/manuals>.

- The *Administrator Manual* describes the general management of the cluster.
- The *Installation Manual* describes installation procedures for a basic cluster.
- The *User Manual* describes the user environment and how to submit jobs for the end user.
- The *Cloudbursting Manual* describes how to deploy the cloud capabilities of the cluster.
- The *Developer Manual* has useful information for developers who would like to program with the cluster manager.
- The *Edge Manual* describes how to deploy Bright Edge with the cluster manager.
- The *Machine Learning Manual* describes how to install and configure machine learning capabilities with the cluster manager.
- The *Containerization Manual* describes how to manage containers with the cluster manager.

If the manuals are downloaded and kept in one local directory, then in most pdf viewers, clicking on a cross-reference in one manual that refers to a section in another manual opens and displays that section in the second manual. Navigating back and forth between documents is usually possible with keystrokes or mouse clicks.

For example: <Alt>-<Backarrow> in Acrobat Reader, or clicking on the bottom leftmost navigation button of xpdf, both navigate back to the previous document.

The manuals constantly evolve to keep up with the development of the cluster manager environment and the addition of new hardware and/or applications. The manuals also regularly incorporate customer feedback. Administrator and user input is greatly valued at Bright Computing. So any comments, suggestions or corrections will be very gratefully accepted at manuals@brightcomputing.com.

There is also a feedback form available via Bright View, via the Account icon, , following the clickpath:

→Help→Feedback

0.3 Getting Administrator-Level Support

If the reseller from whom the cluster manager was bought offers direct support, then the reseller should be contacted.

Otherwise the primary means of support is via the website <https://support.brightcomputing.com>. This allows the administrator to submit a support request via a web form, and opens up a trouble ticket. It is a good idea to try to use a clear subject header, since that is used as part of a reference tag as the ticket progresses. Also helpful is a good description of the issue. The followup communication for this ticket goes via standard e-mail. Section 16.2 of the *Administrator Manual* has more details on working with support.

0.4 Getting Developer-Level Support

Developer support is given free, within reason. For more extensive support, Bright Computing can be contacted in order to arrange a support contract.

0.5 Getting Professional Services

Bright Computing normally differentiates between

- professional services (customer asks Bright Computing to do something or asks Bright Computing to provide some service), and
- support (customer has a question or problem that requires an answer or resolution).

Professional services can be provided after consulting with the reseller, or the Bright account manager.

1

NVIDIA Bright Cluster Manager Python API

This chapter introduces the Python API of NVIDIA Bright Cluster Manager.

The Python API package was completely overhauled in NVIDIA Bright Cluster Manager 8.2.

The `cmdaemon-pythoncm` package now provides a pure Python connection to the cluster manager, making it possible for cluster administrators to automate cluster operations via Python.

It also makes it possible to run Python code on any operating system that supports Python 3.5 and higher.

The cluster manager Python API uses the following extra modules:

1. `pyOpenSSL`
2. `ply`
3. `lxml`
4. `tabulate`
5. `monotonic`
6. `humanfriendly`
7. `six`

1.1 Getting Started

On the cluster head node itself the `python3` module can simply be loaded:

Example

```
[root@bright92 ~]# module load python3
```

To execute or develop the Python code on any other machine usually requires some extra steps:

- Python 3 (3.5, 3.6, 3.7, 3.8 will work) should be installed
- The 7 extra modules listed previously should be installed using Pip
- The `/cm/local/apps/cmd/pythoncm/lib/python3.9/site-packages/pythoncm` directory should be copied over to the site-packages directory of the development machine

The `pythoncm` module should then be loaded, to confirm everything was set up correctly:

Example

```
[alice@desktop ~]# python -c "import pythoncm"
```

If connecting from outside the cluster, then port 8081 must not be blocked by a firewall.

A certificate is needed by the Python API to identify itself to CMDaemon.

The existence of the certificate on the head node should be checked. It should be copied over to the development machine, if it is needed there.

Example

```
[root@bright92 ~]# ls -al .cm/
-rw----- 1 root root 1708 Dec 11 09:25 admin.key
-rw----- 1 root root 1269 Dec 11 09:25 admin.pem
```

Example

```
[alice@bright92 ~]# ls -al .cm/
-rw----- 1 root root 1708 Dec 11 09:25 cert.key
-rw----- 1 root root 1269 Dec 11 09:25 cert.pem
```

The developer may need to contact the cluster administrator to get a certificate.

1.2 Connecting To A Cluster

The first step when working with the Python API is to establish a connection to the CMDaemon process on the cluster:

```
#!/usr/bin/env python

from pythoncm.cluster import Cluster
from pythoncm.settings import Settings

cluster = Cluster()
```

If working outside the cluster, then the settings for connecting to the cluster must be specified:

```
settings = Settings(host='<head-node-hostname>',
                    port=8081,
                    cert_file='/some/path/cert.pem',
                    key_file='/some/path/cert.key',
                    ca_file='../site-packages/pythoncm/etc/cacert.pem')
if not settings.check_certificate_files():
    print('Unable to load certificates')
else:
    cluster = Cluster(settings)
```

1.3 Inspecting Settings

All settings in the cluster manager are stored inside an entity.

Each entity has a type and a unique name among the entities of the same type.

To inspect an entity it should first be found inside the cluster:

```
node001 = cluster.get_by_name('node001')
```

If the name node001 was also given a different entity, then the type must be specified to ensure that the correct entity is returned:

```
node001 = cluster.get_by_name('node001', pythoncm.entity.Node)
node001 = cluster.get_by_name('node001', 'Node')
```

Once the node entity is found, inspecting the settings is a matter of printing the desired field:

```
print(node001.hostname)
print(node001.mac)
```

Complex settings, such as network interfaces, have their own settings:

```
for interfaces in node001.interfaces:
    print(interface.name, interface.ip)
```

Because many nodes could have a network interface called `eth0`, such a setting cannot be found from the cluster: The following code will return `None`.

```
eth0 = cluster.get_by_name('eth0')
```

To find all `eth0` interfaces, all nodes need to be found, and then iterated over:

```
nodes = cluster.get_by_type(pythoncm.entity.Node)
all_eth0 = [interface
             for node in nodes
             for interface in node.interfaces
             if interface.name == 'eth0']
```

1.4 Modifying Settings

Basic entity settings are exported as Python properties and can simply be changed:

```
node001.mac = '00:00:00:00:00:00'
node001.category = cluster.get_by_name('gpu', 'Category')
```

Similarly interfaces settings can be accessed and changed directly:

```
node001.interfaces[0].ip = '1.2.3.4'
node001.interfaces[0].network = cluster.get_by_name('ib', 'Network')
```

Removing an interface from a node can be done in various Pythonic ways:

```
node001.interfaces.remove(0)
del node001.interfaces[0]
node001.interfaces = [interface for interface in node001.interfaces
                      if interface.name != 'eth0']
```

To add a new interface, the entity instance needs to be created first, and then added to the node:

```
eth1 = pythoncm.entity.NetworkPhysicalInterface()
eth1.name = 'eth1'
eth1.ip = '1.2.3.4'
eth1.network = cluster.get_by_name('ib', 'Network')
node001.interfaces.append(eth1)
```

All changes are made on a local copy of the entity. The cluster has no knowledge of the changes until they are committed.

It is recommended to make many changes locally, and only commit once at the end.

The return value of the commit operation should always be checked.

Committing a badly-configured node will be blocked by the head node:

```
commit_result = node001.commit()
if not commit_result.good:
    print(commit_result)
```

An entity found from via the `cluster` object is removed differently.

As with `commit`, the result should always be checked: a removal can fail if a node is UP:

```
remove_result = node001.remove()
if not remove_result.good:
    print(remove_result)
```

The example directory contains a script to inspect the entire cluster.

```
[root@bright92 ~]# cd /cm/local/examples/cmd/pythoncm/
[root@bright92 pythoncm]# module load python3
[root@bright92 pythoncm]# ./print-all.py
```

Example

1.6 Performing Operations On Entities

Methods are documented inside the python code itself.

```
node001 = cluster.get_by_name('node001')
node001.power_on()
```

```
nodes = cluster.get_by_type('Node')
for node in nodes:
    node.power_on()
```

```
nodes = cluster.get_by_type('Node')
cluster.parallel.power_on(nodes)
```

All monitoring data can be accessed using the Python API.

Monitoring is a set of operations performed on entities.

For example, to get latest data for a single entity:

```
print(node001.get_latest_monitoring_data())
```

Monitoring operations on multiple operations should be done using the monitoring module:

[illegible]

1.8 Examples

The best way to get going is by looking at the examples. These can be found on the head node, at `/cm/local/examples/cmd/pythoncm`:

Example

```
[root@bright92 pythoncm]# ls
add-collection.py          entity_info.py          power-parallel-status.py
add-healthcheck.py        events.py               power-status.py
add-metric.py             execute.py              print-all.py
add-node-group.py         free_port.py            range-expander-test.py
add-role.py               get-status.py           remove-node-group.py
add-user.py               health-overview.py      sample-now-checks.py
all-nodes.py              instance_by_name.py     sample-now-parallel.py
certificate-info.py        latest-counter-data.py  select-devices.py
clone-node-group.py        latest-health-data.py   service.py
clone-node.py             new-nodes.py            service-status.py
cm-job-analytics.py        open-close.py           set-node-image.py
create-certificate.py      parallel-execute-async.py wait-for-provisioning.py
create-ramdisk-task.py    parallel-execute-check-status.py wait-for-up.py
dump-monitoring-data.py   parallel-execute.py
```

The examples can be tried out after loading the Python environment:

Example

```
[root@bright92 ~]# cd /cm/local/examples/cmd/pythoncm/
[root@bright92 pythoncm]# module load python3
[root@bright92 pythoncm]# ./power-status.py
INFO      (25-May-2020 18:29:25) [cluster.py          :207] Follow redirection to active head IP:
10.141.255.254
INFO      (25-May-2020 18:29:25) [cluster.py          :298] Start event thread for session
42949672967
success: True
[
  {
    "uniqueKey": 1125899906842642,
    "oldLocalUniqueKey": 0,
    "baseType": "PowerStatus",
    "childType": "",
    "revision": "",
    "modified": false,
    "toBeRemoved": false,
    "readonly": false,
    "not_set_fields": [],
    "device": 38654705666,
    "host": 38654705665,
    "powerDistributionUnit": 0,
    "gpu": -1,
    "prt": 0,
    "name": "custom",
    "state": "ON",
    "msg": "",
    "extendedMsg": "",
    "indexes": [
      2
    ]
  },
]
```

```
    "tracker": 0,  
    "retries": 0  
]  
INFO      (25-May-2020 18:29:28) [entity_change.py      : 38] Stop event change watcher  
[root@bright92 pythoncm]#
```


2

Monitoring Data Producers

This chapter covers how to add a new metrics and health checks scripts with `cmsh`.

Five different types of Monitoring Data Producers can be added:

- `metric`: a script which produces a single value.
- `health check`: a script which produces a `PASS`, `FAIL`, `UNKNOWN`, or `no data` value.
- `collection`: a script that produces zero or more metrics, health checks, or a combination of both.
- `perpetual` a script that is started once over the lifetime of the cluster manager `cmd` process. The script produces zero or more metrics, health checks, or a combination of both on its own timing mechanism.
- `prometheus` one or more URLs to Prometheus metric exporters.

A monitoring data producer cannot be plotted in `cmsh` or Bright View, because it contains no data. A producer defines measurables: metrics and/or health checks. It also generates data for these measurables, which can be plotted.

2.1 Measurables

There are three types of measurable:

- `metric`: a numeric value, or `no data`.
- `health check`: `PASS`/`FAIL`/`UNKNOWN`/`no data`.
- `enum metric`: one of a set of user-defined string based values, or `no data`.

2.2 Measurables Classes

All measurables are grouped into classes. A class is a user-defined free string field, with `/` as delimiters. Bright View uses this class to build a tree for easy search and access.

2.3 Metric Monitoring Data Producers

A metric data producer script generates one data point.

For example, as in the following script:

Example

```
[root@bright92 ~]# cat /path/to/my/metric
#!/bin/bash
info_fd=${CMD_INFO_FD:=3}    #set CMD_INFO_FD to 3 by default only if nothing set
# CMD_INFO_FD:=3    <--- same as: if [ -z "$CMD_INFO_FD" ]; then CMD_INFO_FD=3; fi
echo $((RANDOM))
# Optionally provide extra information
echo "Extra information" >&$info_fd
```

The script can be defined as a metric script via the `monitoring setup` mode of `cmsh`:

Example

```
[bright92]% monitoring setup
[bright92->monitoring->setup]% add metric my-metric
[...my-metric]% set script /path/to/my/metric
[...my-metric]% set class My/Class
[...my-metric]% set unit B
[...my-metric]% set interval 1m
[...my-metric]% commit
```

All nodes then execute the script every minute, and produce a random number.

2.4 Health Check Monitoring Data Producers

A health check data producer script generates one data point. The data point can be one of four possible values expected of it: `PASS`, `FAIL`, `UNKNOWN`, or no data. Other file descriptors can be used to provide extra information.

For example, as in the following script:

Example

```
[root@bright92 ~]# cat /path/to/my/health-check
#!/bin/bash
info_fd=${CMD_INFO_FD:=3}    #set CMD_INFO_FD to 3 by default if nothing set
if [ $((RANDOM)) -gt 8000 ]; then
    echo "PASS"
else
    echo "FAIL"
    # Optionally provide extra information
    echo "Extra information" >&$info_fd
fi
```

The script can be defined as a health check script via the `monitoring setup` mode of `cmsh`:

Example

```
[bright92]% monitoring setup
[bright92->monitoring->setup]% add healthcheck my-health-check
[...my-check]% set script /path/to/my/health-check
[...my-check]% set class My/Class
[...my-check]% set interval 1m
[...my-check]% commit
```

All nodes then execute the script every minute, and produce data values with roughly 75% `PASS` and 25% `FAIL`.

2.5 Collection Monitoring Data Producers

A *collection data producer* script can generate multiple data points in one run. Data points can be a combination of metrics and health checks. Collection scripts are also allowed to produce no data.

A collection script has two modes: initialize mode and sample mode.

- **initialize**: defines the measurables that data values are generated for.
- **sample**: returns the data values for all the measurables defined in initialize mode.

During normal cluster operation the initialize mode is called only once, during boot. Afterwards, the script is called in sample mode at the desired interval.

The following example combines both of the metric and health check examples from earlier on. However, this time it is written as a single script, using JSON as the output format:

Example

```
[root@bright92 ~]# cat /path/to/my/collection
#!/usr/bin/python

import sys
import json
import random

def initialize():
    metric = {"metric": "my.collection.metric",
              "unit": "B",
              "class": "My/Collection"}
    check = {"check": "my.collection.check",
             "class": "My/Collection"}
    return [metric, check]

def sample():
    metric = {"metric": "my.collection.metric",
              "value": random.randint(0, 32767)}
    check = {"check": "my.collection.check",
             "info": "random with 25% failure rate",
             "value": 'PASS' if random.randint(0, 32767) > 8000 else 'FAIL'}
    return [metric, check]

def main():
    if len(sys.argv) > 1 and sys.argv[1] == "--initialize":
        data = initialize()
    else:
        data = sample()
    print (json.dumps(data, indent=4))

if __name__ == '__main__':
    main()
```

The script can be defined as a collection script via the `monitoring setup` mode of `cmsh`:

Example

```
[bright92]% monitoring setup
[bright92->monitoring->setup]% add collection my-collection
[...my-collection]% set script /path/to/my/collection
[...my-collection]% set format JSON
```

```
[...my-collection]% set interval 1m
[...my-collection]% commit
```

All nodes then execute the script every minute and produce two data points upon each execution. That is, one metric and one health check per execution.

2.6 Perpetual Monitoring Data Producers

A perpetual data producer script is a special case of a collection data producer script. It is intended to be used if the script needs permanent memory storage.

Example

```
[root@bright92 ~]# cat /path/to/my/perpetual
#!/usr/bin/python

import my_sampler_module
import json
import time

# create single instance
sampler = my_sampler_module.MySampler()
# load important data into memory
sampler.load()

# Infinite loop with its own timing
delay = 0
while True:
    time.sleep(delay)
    (definitions, values, delay) = sampler.process()
    if definitions:
        # Print new measurables
        print (json.dumps(definitions))
    # Print data
    print (json.dumps(values))
```

The `my_sampler_module` is the part which does the important work.

Example

```
[root@bright92 ~]# cat /path/to/my/my_sampler_module.py
class MySampler:
    def __init__(self):
        self.initialized = False
        self.definitions = None

    def load(self):
        # Do time consuming work here
        metric = {"metric": "my.collection.metric",
                  "unit": "B",
                  "class": "My/Collection"}
        check = {"check": "my.collection.check",
                  "class": "My/Collection"}
        self.definitions = [metric, check]

    def process(self):
        metric = {"metric": "my.collection.metric",
```

```

        "value": random.randint(0, 32767)}
    check = {"check" : "my.collection.check",
            "value" : 'PASS' if random.randint(0, 32767) > 8000 else 'FAIL'}
    values = metric, check
    # return definitions once, afterwards they never change
    # but new definitions could be added this way
    definitions = self.definitions
    self.definitions = None
    return definitions, values, 60

```

The script can be defined as a perpetual script via the `monitoring setup` mode of `cmsh`:

Example

```

[bright92]% monitoring setup
[bright92->monitoring->setup]% add perpetual my-perpetual
[...my-perpetual]% set script /path/to/my/perpetual
[...my-perpetual]% set format JSON
[...my-perpetual]% commit

```

2.7 Prometheus Monitoring Data Producers

Prometheus is a monitoring and alerting toolkit (<https://prometheus.io>). A Prometheus monitoring data producer script parses data from a Prometheus exporter (<https://prometheus.io/docs/instrumenting/exporters/>)

The script can be defined as a Prometheus script via the `monitoring setup` mode of `cmsh`:

Example

```

[bright92]% monitoring setup
[bright92->monitoring->setup]% add prometheus my-prometheus-exporter
[...my-prometheus-exporter]% set urls http://my.prometheus.exporter:80
[...my-prometheus-exporter]% set interval 1m
[...my-prometheus-exporter]% commit

```

If multiple URLs are defined, then only the data values from the first successful HTTP GET are used.

2.8 Node Execution Filters

By default a monitoring data producer script is executed on every node. When this is not desirable, a node execution filter should be created. A node execution filter defines the nodes on which the producer script should be executed.

For example, a filter to execute the script only on cloud nodes can be configured as follows:

Example

```

[bright92]% monitoring setup use my-check
[...my-check]% nodeexecutionfilters
[...nodeexecutionfilters]% add type Cloud
[...nodeexecutionfilters*[Cloud*]]% set cloudnode yes
[...nodeexecutionfilters*[Cloud*]]% show

```

Parameter	Value
Base type	MonitoringExecutionFilter
Name	Cloud
Type	Type
Head node	no

```
Physical node      no
Cloud node        yes
Virtual node      no
Lite node         no
[...nodeexecutionfilters*[Cloud*]]% commit
```

It is also possible to filter based on the specific resources associated with a node:

Example

```
[bright92]% monitoring setup use my-IB-check
[...my-IB-check]% nodeexecutionfilters
[...nodeexecutionfilters]% add resource IB
[...nodeexecutionfilters*[IB*]]% set resources IB
[...nodeexecutionfilters*[IB*]]% commit
```

Because of high availability, a special resource, *active*, is defined for the active head node.

Example

```
[bright92]% monitoring setup use my-metric
[...my-metric]% nodeexecutionfilters
[...nodeexecutionfilters]% active
Added active resource filter
[...nodeexecutionfilters*]% commit
```

2.9 Execution Multiplexers

By default a monitoring data producer script is executed once: the node executes the script only for itself.

However, some scripts, such as BMC samplers, must be sampled from the active head node for all nodes.

In the following example a BMC script is run on each node that has the *ipmi* or *drac* resource:

Example

```
[bright92]% monitoring setup use my-ipmi-collection
[...my-ipmi-collection]% executionmultiplexers
[...executionmultiplexers]% add resource ipmi
[...executionmultiplexers*[ipmi*]]% set resources ipmi drac
[...executionmultiplexers*[ipmi*]]% set operator OR
[...executionmultiplexers*[ipmi*]]% commit
```

If an execution multiplexer *<multiplexer>* is defined, then there should also be a node execution filter *<filter>* associated with it to restrict the number of nodes on which the script runs.

This is because having the script run on many nodes for many other nodes is unlikely to be a desired configuration.

The combination of the execution filter and the multiplexer should be read as:

for every node that matches *filter*, run script, for each node that matches *multiplexer*.

A more specific example, using two of the preceding examples, with a filter based on the resource *IB*, and multiplexers based on the *IPMI/Drac* resources, the combination should be read as:

for every node that matches *IB*, run script, for each node that matches *ipmi* or *drac*.

2.10 Monitoring Resources

Every device in the cluster manager has one or more resources. These resources are automatically calculated from:

- Roles
- Hardware
- Settings

Resources for a specific node can be viewed as follows:

Example

```
[bright92]% device use node001
[bright92]% monitoringresources
CentOS7u5
Ethernet
category:default
```

It is possible to add one or more custom resources to a device:

Example

```
[bright92]% device use node001
[bright92]% add userdefinedresources MyResource
[bright92]% append userdefinedresources MyOtherResource
[bright92]% # wait ~10 seconds for the settings to propagate
[bright92]% monitoringresources
CentOS7u5
Ethernet
category:default
MyResource
MyOtherResource
```

Any of these resources can be used to filter and multiplex monitoring data producers.

If a resources changes because of a settings change, then monitoring automatically stops or starts sampling.

2.11 Collection Monitoring Data Producers With Filter And Multiplexer

If a script has an execution multiplexer set, then it needs to determine for which nodes the script runs:

Example

```
[root@bright92~]# cat /path/to/my/collection
#!/usr/bin/python

import sys
import json
import random

def initialize(entity):
    metric = {"metric": "my.collection.metric",
              "entity": entity,
              "unit": "B",
              "class": "My/Collection"}
    check = {"check": "my.collection.check",
```

```

        "entity": entity,
        "class": "My/Collection"}
    return [metric, check]

def sample(entity):
    metric = {"metric": "my.collection.metric",
              "entity": entity,
              "value": random.randint(0, 32767)}
    check = {"check" : "my.collection.check",
              "entity": entity,
              "value" : 'PASS' if random.randint(0, 32767) > 8000 else 'FAIL'}
    return [metric, check]

def main():
    try:
        # determine for which node we are sampling
        entity = os.environ['CMD_HOSTNAME']
    except:
        sys.stderr.write('Target device not specified in environment\n')
        return

    if len(sys.argv) > 1 and sys.argv[1] == "--initialize":
        data = initialize(entity)
    else:
        data = sample(entity)
    print (json.dumps(data, indent=4))

if __name__ == '__main__':
    main()

```

It can be defined with a filter to run on the active head for all nodes in the GPU category:

Example

```

[bright92]% monitoring setup
[bright92->monitoring->setup]% add collection my-collection
[...my-collection]% set script /path/to/my/collection
[...my-collection]% set format JSON
[...my-collection]% set interval 1m
[...my-collection]% nodeexecutionfilters
[...nodeexecutionfilters]% active
Added active resource filter
[...nodeexecutionfilters]% exit
[...my-collection]% executionmultiplexers
[...executionmultiplexers]% add category
[...executionmultiplexers*[GPU*]% add category GPU
[...executionmultiplexers*[GPU*]% commit

```

The script is then executed on the head, once for each node in the category of GPU.

2.12 Collection Monitoring Data Producers For Standalone Entities

Sometimes monitoring data does not belong to a cluster manager entity.

For this reason the standalone monitored entity was added in NVIDIA Bright Cluster Manager 8.0.

This entity can be anything with a name and custom type.

The cluster manager does nothing with this kind of entity, except allow it to store monitoring data.

Each standalone entity which needs to be monitored should be added:

Example

```
[bright92]% monitoring standalone
[bright92->monitoring->standalone]% add MSD.0
[...standalone*[MSD.0*]]% set type Lustre
[...standalone*[MSD.0*]]% commit
[...standalone*[MSD.0*]]% add MSD.1
[...standalone*[MSD.1*]]% set type Lustre
[...standalone*[MSD.1*]]% commit
```

A script can be created that produces data for all MSD entities:

Example

```
[root@bright92 ~]# cat /path/to/my/collection
#!/usr/bin/python

import sys
import json

def initialize():
    msd_0 = {"metric": "lustre.free.space",
            "entity": "MSD.0",
            "unit": "B",
            "class": "Lustre"}
    msd_1 = {"metric": "lustre.free.space",
            "entity": "MSD.1",
            "unit": "B",
            "class": "Lustre"}
    return [msd_0, msd_1]

def sample():
    msd_0 = {"metric": "lustre.free.space",
            "entity": "MSD.0",
            "value": 12345,
            "class": "Lustre"}
    msd_1 = {"metric": "lustre.free.space",
            "entity": "MSD.1",
            "value": 54321}
    return [msd_0, msd_1]

def main():
    if len(sys.argv) > 1 and sys.argv[1] == "--initialize":
        data = initialize()
    else:
        data = sample()
    print (json.dumps(data, indent=4))

if __name__ == '__main__':
    main()
```

It can be defined to run on only the active head node:

Example

```
[bright92]% monitoring setup
[bright92->monitoring->setup]% add collection my-collection
```

```
[...my-collection]% set script /path/to/my/collection
[...my-collection]% set format JSON
[...my-collection]% set interval 5m
[...my-collection]% nodeexecutionfilters
[...nodeexecutionfilters]% active
Added active resource filter
[...nodeexecutionfilters]% commit
```

The script is then executed on the active head every 5 minutes and collects one data point for each MSD.

Data for a standalone script can be viewed with the same commands as for regular cluster manager nodes.

Example

```
[bright92]% monitoring standalone
[bright92->monitoring->standalone]% use MSD.0
[...standalone*[MSD.0*]]% latestmetricdata
...
lustre.free.space          12345          3m 47s
```

2.13 Debugging Standalone Scripts

Page 600 of the *Administrator Manual* describes how debugging information can be obtained when running `samplenow` with the `--debug` option with the `ntp healthcheck` script.

Many scripts under `/cm/local/apps/cmd/scripts/` can have their debug output inspected with `samplenow --debug`.

A recursive `grep` on the head node, similar to the following, should show which scripts have a settable debug environment:

```
grep -r CMD_DEBUG /cm/local/apps/cmd/scripts/
```

The debug output in the script can be specified along the lines of the following code snippet:

Example

```
import os
debug = os.environ.get('CMD_DEBUG', '0') == '1'
info_fd = int(os.environ.get('CMD_INFO_FD', '3'))
if debug:
    os.write(info_fd, 'debug message')
```

3

Monitoring Actions

This chapter covers how to manage monitoring-driven actions with `cmsh`.

3.1 Actions And Triggers

A monitoring action is a script that is executed by `CMDaemon`. It runs when triggered by the monitored data.

An action by itself does nothing—it needs a trigger (section 12.4.5 of the *Administrator Manual*) to be defined to execute the action.

By default, several actions (section 12.4.4 of the *Administrator Manual*) are predefined:

- `Drain`: Drain node (node refuses new WLM jobs)
- `Event`: Send an event to users with connected client
- `ImageUpdate`: Update the image on the node
- `PowerOff`: Power off a device
- `PowerOn`: Power on a device:
- `PowerReset`: Power reset a device
- `Reboot`: Reboot a node
- `Send e-mail to administrators`: Send e-mail
- `Shutdown`: Shutdown a node
- `Undrain`: Undrain node (node accepts new WLM jobs)
- `killprocess`: `/cm/local/apps/cmd/scripts/actions/killprocess.pl`
- `remount`: `/cm/local/apps/cmd/scripts/actions/remount`
- `testaction`: `/cm/local/apps/cmd/scripts/actions/testaction`

A new action script can be created as follows:

Example

```
[bright92]% monitoring action
[bright92->monitoring->action]% add script MyScript
[...MyScript*]% set script /path/to/MyScript
[...MyScript*]% commit
```

3.2 Time Restrictions

It is possible to allow actions to only be executed at certain times, with the `allowedtime` setting.

Example

```
[bright92]% monitoring action
[bright92->monitoring->action]% add script MyScript
[...MyScript*]% set script /path/to/MyScript
[...MyScript*]% set allowedtime "9:00-17:00"
[...MyScript*]% commit
```

More complex timing restrictions are possible:

Example

```
monday-friday{9:00-17:00}
monday-friday{00:00-09:00;17:00-00:00};saturday-sunday
november-march{monday-saturday{13:00-17:00}}
may-september{monday-friday{09:00-18:00};saturday-sunday{13:00-17:00}}
```

Further examples can be seen in section 12.4.4 of the *Administrator Manual*, page 572.

3.2.1 Time Restriction Syntax In BNF Notation

The allowed values can be written as a BNF grammar:

Example

```
<start> =
    time_intervals
    | ""
<time_intervals> = <time_interval> (; <time_interval>)*
<time_interval> = <inner_time_interval>{<time_intervals>}
<inner_time_interval> =
    <day_of_week_interval>
    | <time_of_day_interval>
    | <day_of_month_interval>
    | <month_interval>
<day_of_week_interval> =
    (<day_of_week>-<day_of_week>)
    | (<day_of_week> (, <day_of_week>)*
<day_of_week> = sunday | monday | tuesday | wednesday | thursday | friday | saturday
<time_of_day_interval> = <time_of_day>-<time_of_day>
<time_of_day>= \d?\d:\d\d
<month_interval> = (<month>-<month>)
    | (<month> (, <month>)*
<month> = january | february | march | april | may | june | july | august | september
    | october | november | december
<day_of_month_interval> = (<day_of_month>-<day_of_month>)
    | (<day_of_month> (, <day_of_month>)*
<day_of_month> = \d?\d
```

3.3 CMDaemon Environment Variables

3.3.1 Standard Environment Variables Available In Action Scripts

Name	Description
CMD_ENTITY_KEY	The unique key of the entity that triggered the action.
CMD_ENTITY_NAME	The name of the entity that triggered the action.
CMD_ENTITY_TYPE	The type of entity that triggered the action.
CMD_MEASURABLE_NAME	The name of the measurable that triggered the action.
CMD_MEASURABLE_PARAMETER	The parameter of the measurable that triggered the action.
CMD_MEASURABLE_TYPE	The type of the measurable.
CMD_VALUE	The value that triggered the action.
CMD_RAW_VALUE	The raw value.
CMD_VALUE_TIME	The time on which the value was measured.
CMD_INFO_MESSAGE	Extra information sampled along with the value.
CMD_PRODUCER_NAME	The name of the monitoring data producer that samples the measurable.

...continues

...continued

Name	Description
CMD_ACTION_NAME	The name of the action that was triggered.
CMD_TRIGGER_NAME	The name of the trigger.
CMD_TRIGGER_EXPRESSION	The expression that was evaluated.
CMD_VALUE_EVAL	The result of the evaluated expression.
CMD_VALUE_COUNT	The number of times the expression evaluated to the same value.
CMD_SEVERITY	The assigned severity of the trigger.

All action scripts have the preceding standard environment variables set.

In `cmsh`, if the action object has its `node environment` parameter set to the value `yes`, then scripts running on a node are enabled with an extended environment that provides many more `CMD_*` environment variables. Otherwise they run in the standard environment.

A list of the standard or extended environment variables can be dumped by running the system command `env > /tmp/dumpfile` within an action script, such as the test example script, and triggering the script to run.

Many of the environment variables are similar to the ones used by `initialize` and `finalize` scripts (section E.3 of the *Administrator Manual*) in the `node-installer` environment.

3.3.2 Extended Environment Variables Available To Action Scripts

If the action object has its `node environment` parameter set to the value `yes`, then scripts run in an extended environment that provides many more `CMD_*` environment variables. Otherwise they run in the standard environment of section 3.3.1.

The following table shows the additionally available environment variables with some example values:

Table 3.3.2: Environment Variables For Nodes In The Extended Environment

Variable	Example Value
CMD_ACTIVE_MASTER_IP	10.141.255.254
CMD_ADDED_NODES	

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_BASE_TYPE	
CMD_BMCIP	
CMD_BMCPASSWORD	doQNeV1qksXr590
CMD_BMCUSERID	4
CMD_BMCUSERNAME	
CMD_BMC_TYPE	2
CMD_CATEGORY	default
CMD_CEPH_MDS_SOCKET	
CMD_CEPH_MGR_SOCKET	
CMD_CEPH_MON_SOCKET	
CMD_CEPH_NAME	
CMD_CEPH_OSD_ID	
CMD_CEPH_OSD_SOCKET	
CMD_CHASSIS	chassis01
CMD_CHASSIS_IP	10.141.1.1
CMD_CHASSIS_MEMBERS	
CMD_CHASSIS_PASSWORD	secr3t
CMD_CHASSIS_SLOT	1
CMD_CHASSIS_USERNAME	ADMIN

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_CHILD_TYPE	
CMD_CLUSTERNAME	Bright 9.2 Cluster
CMD_CONFIGURATION_CREATE_DIRECTORY	
CMD_CONFIGURATION_FILENAME	
CMD_CONFIGURATION_GROUP_NAME	
CMD_CONFIGURATION_MASK	
CMD_CONFIGURATION_NAME	
CMD_CONFIGURATION_USER_NAME	
CMD_CREATE_RAMDISK_TOKEN_CATS	
CMD_CREATE_RAMDISK_TOKEN_NODES	
CMD_CURRENT_NODES	
CMD_DATA	
CMD_DELLFW_FTP_PASSWORD	
CMD_DELLFW_FTP_USERNAME	
CMD_DELLFW_PATH	
CMD_DESTINATION_REVISION	
CMD_DESTINATION_VERSION	
CMD_DEVICE_HEIGHT	1
CMD_DEVICE_POSITION	10

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_DEVICE_TYPE	ComputeNode
CMD_DIRECTOR	
CMD_DIRECTOR_IP	
CMD_DOCKER_ENDPOINTS	
CMD_EDGE_SITE	
CMD_ETCD_CA	
CMD_ETCD_CAKEY	
CMD_ETCD_CLIENT_CA	
CMD_ETCD_CLIENT_CERT	
CMD_ETCD_CLIENT_KEY	
CMD_ETCD_MEMBER_CERT	
CMD_ETCD_MEMBER_KEY	
CMD_ETHERNETSWITCH	switch01:1
CMD_EXISTING_REVISION	
CMD_EXISTING_VERSION	
CMD_EXPORTS	
CMD_FAILONMISSINGBMC	
CMD_FAIL_ON_FAILED_BMCCOMMAND	YES
CMD_FSEXPORTS	

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_FSEXPORT_<name>_ALLOWWRITE	
CMD_FSEXPORT_<name>_HOSTS	
CMD_FSEXPORT_<name>_PATH	
CMD_FSMOUNTS	
CMD_FSMOUNT_<name>_DEVICE	

where <name> takes these SLASH substitutions:

<name>	example value
_SLASH_cm_SLASH_shared	\$localnfsserver:/cm/shared
_SLASH_dev_SLASH_pts	none
_SLASH_dev_SLASH_shm	none
_SLASH_home	\$localnfsserver:/home
_SLASH_proc	none
_SLASH_sys	none

CMD_FSMOUNT_<name>_FILESYSTEM

where <name> takes these SLASH substitutions:

<name>	example value
_SLASH_cm_SLASH_shared	nfs
_SLASH_dev_SLASH_pts	devpts
_SLASH_dev_SLASH_shm	tmpfs
_SLASH_home	nfs
_SLASH_proc	proc
_SLASH_sys	sysfs

CMD_FSMOUNT_<name>_MOUNTPOINT

where <name> takes these SLASH substitutions:

<name>	example value
_SLASH_cm_SLASH_shared	/cm/shared
_SLASH_dev_SLASH_pts	/dev/pts
_SLASH_dev_SLASH_shm	/dev/shm
_SLASH_home	/home
_SLASH_proc	/proc
_SLASH_sys	/sys

CMD_FSMOUNT_<name>_OPTIONS

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
----------	---------------

where *<name>* takes these SLASH substitutions:

<i><name></i>	example value
_SLASH_cm_SLASH_shared	rsz=32768,wsz=32768,hard,intr,async
_SLASH_dev_SLASH_pts	gid=5,mode=620
_SLASH_dev_SLASH_shm	defaults
_SLASH_home	rsz=32768,wsz=32768,hard,intr,async
_SLASH_proc	defaults,nosuid
_SLASH_sys	/defaults

CMD_GATEWAY	10.141.255.254
CMD_GUID	
CMD_HAPROXY_HOST	
CMD_HOSTNAME	node004
CMD_INITRD	
CMD_INITRD_KERNEL_PARAMS	
CMD_INITRD_KERNEL_VERSION	
CMD_INITRD_TMPFS_SIZE	
CMD_INSTALLMODE	AUTO
CMD_INSTANCE_ID	
CMD_INTERFACES	BOOTIF
CMD_INTERFACE_ <i><interface></i> _BOND	
CMD_INTERFACE_ <i><interface></i> _BRIDGE	
CMD_INTERFACE_ <i><interface></i> _DHCP	
CMD_INTERFACE_ <i><interface></i> _GATEWAY	
CMD_INTERFACE_ <i><interface></i> _IP	10.141.0.5

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_INTERFACE_<interface>_LANCHANNEL	
CMD_INTERFACE_<interface>_MAC	00:00:00:00:00:00
CMD_INTERFACE_<interface>_MODE	
CMD_INTERFACE_<interface>_MTU	1500
CMD_INTERFACE_<interface>_NETMASK	
CMD_INTERFACE_<interface>_REVISION	
CMD_INTERFACE_<interface>_SLAVES	
CMD_INTERFACE_<interface>_SPEED	
CMD_INTERFACE_<interface>_STARTIF	ALWAYS
CMD_INTERFACE_<interface>_TYPE	NetworkPhysicalInterface
CMD_INTERFACE_<interface>_VLANID	
In the preceding CMD_INTERFACE_* variables, <interface> can take the following substitutions for the network interface: possible values for <interface> BOOTIF drac0, drac1, drac2... cimc0, cimc1, cimc2... eth0, eth1, eth1... ib0, ib1, ib2... ilo0, ilo1, ilo2... ipmi0, ipmi1, ipmi2... rf0, rf1, rf2... eno1, enp0s18f2, and other names consistent with the RHEL7 interface naming convention	
CMD_IP	10.141.0.1
CMD_JOBNODELIST	
CMD_KUBERNETES_ADMIN_CERT	
CMD_KUBERNETES_ADMIN_CERT_KEY	

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_KUBERNETES_ADMIN_KUBECONFIG	
CMD_KUBERNETES_APISERVER_ENDPOINT	
CMD_KUBERNETES_CACERT	
CMD_KUBERNETES_CLIENT_CERTIFICATE	
CMD_KUBERNETES_CLIENT_KEY	
CMD_KUBERNETES_ETCD_ACTIVE	
CMD_KUBERNETES_ETCD_CLIENT_ENDPOINTS	
CMD_KUBERNETES_KUBELET_CERTIFICATE	
CMD_KUBERNETES_KUBELET_ENDPOINT	
CMD_KUBERNETES_KUBELET_KEY	
CMD_KUBE_DNS_IP	
CMD_KUBE_DOMAIN	
CMD_KUBE_INTERNAL_NETWORK_CIDR	
CMD_KUBE_POD_NETWORK_CIDR	
CMD_KUBE_SERVICE_NETWORK_CIDR	
CMD_LOGGING_CONFIG	
CMD_MAC	FA:16:3E:64:8E:1E
CMD_MODEL	
CMD_MODULES	

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_MODULE_<name>	
CMD_MOUNTS	
CMD_NAME	
CMD_NODEGROUPS	
CMD_NODEGROUP_NAME	
CMD_NODEGROUP_UID	
CMD_OWNED_INDEX	
CMD_PARTITION	base
CMD_PASSIVE_MASTER_IP	10.141.255.253
CMD_PDUS	
CMD_PORT	8081
CMD_PORTS	
CMD_POWER_CONTROL	custom
CMD_PROTOCOL	https
CMD_RACADM_PATH	
CMD_RACK	rack01
CMD_RACK_HEIGHT	42
CMD_RACK_ROOM	serverroom
CMD_READ_STRING	

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_REMOVED_NODES	
CMD_RESOLVE_NAME	
CMD_ROLES	
CMD_SCRIPTTIMEOUT	5
CMD_SCRIPT_TIMEOUT	5
CMD_SHARED_MASTER_IP	10.141.255.252
CMD_SKIPBMC	
CMD_SOFTWAREIMAGE	default-image
CMD_SOFTWAREIMAGE_PATH	/cm/images/default-image
CMD_STATE	
CMD_STATUS	
CMD_STATUS_CLOSED	NO
CMD_STATUS_HEALTHCHECK_FAILED	NO
CMD_STATUS_HEALTHCHECK_UNKNOWN	NO
CMD_STATUS_MESSAGE	
CMD_STATUS_RESTART_REQUIRED	NO
CMD_STATUS_STATEFLAPPING	NO
CMD_STATUS_USERMESSAGE	
CMD_STRICTUSERID	

...continues

Table 3.3.2: Environment Variables For Nodes In The Extended Environment ...continued

Variable	Example Value
CMD_SUBNET_MANAGER	
CMD_SWITCH_CONTROL_SCRIPT	
CMD_SWITCH_CONTROL_SCRIPT_TIMEOUT	
CMD_SYSINFO_SYSTEM_MANUFACTURER	RDO
CMD_SYSINFO_SYSTEM_NAME	OpenStack Compute
CMD_TAG	00000000a000
CMD_TARGET_NAME	
CMD_TARGET_NODES	
CMD_TYPE	
CMD_TYPES	
CMD_UCS_DN	sys/rack-unit-1
CMD_USERDEFINED1	var1
CMD_USERDEFINED2	var2
CMD_VMLINUZ	
CMD_WRITE_STRING	

4

CMDaemon REST API

Some data from CMDaemon can be accessed via its REST API.

The REST API allows data only to be retrieved for most calls. Currently (June 2024) the only exception is the Event call, which can be used to generate events (section 4.2.9).

4.1 Authentication, And Definition Of *<curlauth>*

Two forms of authentication are supported:

- Basic: HTTP authentication (--basic option of curl)
- Certificate: Certificate-based authentication (--cert option of curl). Certificate-based authentication is covered in section 6.4.2 of the *Administrator Manual*.

The following two commands give identical results:

```
[alice@bright92 ~]$ curl -k --basic --user "alice:password" "https://master:8081/rest"  
[alice@bright92 ~]$ curl --cert ~/.cm/cert.pem --key ~/.cm/cert.key -k "https://master:8081/rest"
```

For security, it is best to use the certificate key-based version.

For convenience, the command and authority parts of the preceding two commands—that is the string in the line that includes the text from curl to 8081 in the two curl commands—is designated by *<curlauth>* in this chapter. Thus, each of the commands can be represented by:

Example

```
[alice@bright92 ~]$ <curlauth>/rest"
```

This allows the reader to focus on the path segment and variables part of the API.

4.2 Browsing The API

A summary diagram of the REST API is shown in figure 4.1:

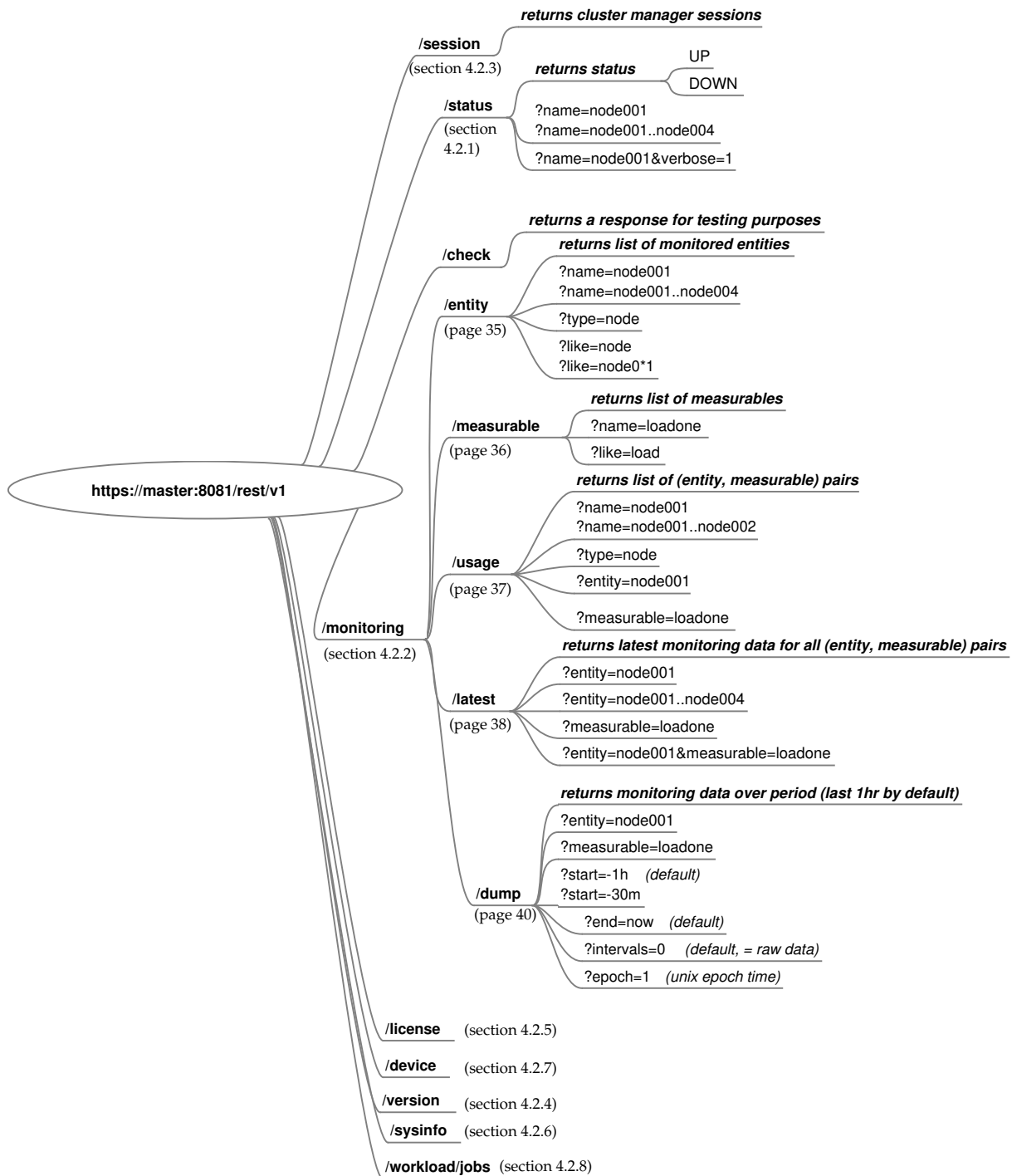


Figure 4.1: REST API summary tree

The remainder of this section elaborates upon the diagram.

The API directory structure is documented within the directory itself.

A GET operation on the main /rest entry point can list all subdirectories:

Example

```
[alice@bright92 ~]$ <curlauth>/rest"
["v1"]
```

New lines are not part of the output by default. Setting a parameter of 1 or 2 for the indent variable uses newlines and an indentation of one or two spaces, which makes the API output more readable for all API resource paths.

Example

```
[alice@bright92 ~]$ <curlauth>/rest?indent=1"  
[  
  "v1"  
]
```

Appending /v1 to the URL gives the functionality available in the first version of the REST API.

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1?indent=1"  
[  
  "monitoring",  
  "status",  
  "session",  
  "check",  
  "version",  
  "license",  
  "sysinfo",  
  "device",  
  "workload",  
  "event"  
]
```

Appending /monitoring to the URL lists the subdirectory functionality available for monitoring.

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring?indent=1"  
[  
  "entity",  
  "measurable",  
  "latest",  
  "dump",  
  "usage"  
]
```

4.2.1 Returning A Status Using /v1/status

The status resource path returns the UP/DOWN status for all devices:

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/status?indent=2"  
[  
  {  
    "hostname": "bright92",  
    "status": "UP"  
  },  
  {  
    "hostname": "node001",  
    "status": "UP"  
  },  
]
```

```
{
  "hostname": "node002",
  "status": "DOWN"
}
]
```

The status can also be requested for a single device:

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/status?name=node001&indent=2"
[
  {
    "hostname": "node001",
    "status": "UP"
  }
]
```

The “two dots” list specification format (section 2.5.5 of the *Administrator Manual*) used in Bright View and cmsh can also be used in the API:

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/status?name=node001..node002&indent=2"
[
  {
    "hostname": "node001",
    "status": "UP"
  },
  {
    "hostname": "node002",
    "status": "DOWN"
  }
]
```

For more detailed information, the verbose parameter can be added (output truncated):

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/status?verbose=1&indent=2"
[
  {
    "health_check_failed": true,
    "health_check_unknown": false,
    "hostname": "bright92",
    "provisioning_failed": false,
    "restart_required": false,
    "status": "UP"
  },
  {
    "health_check_failed": true,
    "health_check_unknown": false,
    "hostname": "node001",
    "provisioning_failed": false,
    ...
  }
]
```

4.2.2 Monitoring Using /v1/monitoring

Entities Via /v1/monitoring/entity

The entity resource returns information about the entities that are known to the monitoring system. It is possible for an entity known to the monitoring system to have no data.

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/entity?indent=1"
{
  "entities": [
    {
      "key": 12884901889,
      "name": "default",
      "type": "Category"
    },
    {
      "key": 17179869185,
      "name": "globalnet",
      "type": "Network"
    },
    {
      "key": 17179869186,
      "name": "internalnet",
      "type": "Network"
    },
    ...
  ]
}
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/entity?name=node001&indent=1"
{
  "entities": [
    {
      "key": 38654705666,
      "name": "node001",
      "type": "PhysicalNode"
    }
  ]
}
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/entity?type=node&indent=1"
{
  "entities": [
    {
      "key": 38654705665,
      "name": "bright92",
      "type": "HeadNode"
    },
    {
      "key": 38654705666,
      "name": "node001",
      "type": "PhysicalNode"
    },
    {
      "key": 38654705667,
      "name": "node002",
      "type": "PhysicalNode"
    }
  ]
}
```

```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/entity?name=node001..node002&indent=1"
{
  "entities": [
    {
      "key": 38654705666,
      "name": "node001",
      "type": "PhysicalNode"
    },
    {
      "key": 38654705667,
      "name": "node002",
      "type": "PhysicalNode"
    }
  ]
}
```

A regex matcher can be used to find entities based on a name match:

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/entity?like=lobal&indent=1"
{
  "entities": [
    {
      "key": 17179869185,
      "name": "globalnet",
      "type": "Network"
    }
  ]
}
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/entity?like=nod.0*1&indent=1"
{
  "entities": [
    {
      "key": 38654705666,
      "name": "node001",
      "type": "PhysicalNode"
    }
  ]
}
```

Regexes are based on the ECMAScript specification (<https://en.cppreference.com/w/cpp/regex/ecmascript>).

Measurables Via /v1/monitoring/measurable

This entry returns information about the defined measurables.

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/measurable?indent=1"
{
  "measurables": [
    {
      "key": 261993005057,
      "name": "IpForwDatagrams",
      "type": "metric"
    }
  ]
}
```

```

},
{
  "key": 261993005058,
  "name": "IpFragCreates",
  "type": "metric"
},
{
  "key": 261993005059,
  "name": "IpFragFails",
  "type": "metric"
},
...typically hundreds more lines...

```

```

[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/measurable?name=loadone&indent=1"
{
  "measurables": [
    {
      "key": 261993005138,
      "name": "LoadOne",
      "type": "metric"
    }
  ]
}
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/measurable?like=load&indent=1"
{
  "measurables": [
    {
      "key": 261993005136,
      "name": "LoadFifteen",
      "type": "metric"
    },
    {
      "key": 261993005137,
      "name": "LoadFive",
      "type": "metric"
    },
    {
      "key": 261993005138,
      "name": "LoadOne",
      "type": "metric"
    }
  ]
}

```

Data Usage Via /v1/monitoring/usage

The usage resource is intended to show which (entity, measurable) pairs have data. For example, nodes with only 1 disk do not have data, if their associated measurables have the string `sdb` in their name.

To get the complete usage:

Example

```

[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/usage?indent=1"
{
  "data": [
    {
      "entity": "default",

```

```

    "measurable": "CoresTotal"
  },
  {
    "entity": "default",
    "measurable": "CoresUp"
  },
  ...typically hundreds more lines...

```

It is also possible to get all the measurables for which a specific entity, such as node001, has data.

Example

```

[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/usage?entity=node001&indent=1"
{
  "data": [
    {
      "entity": "node001",
      "measurable": "IpForwDatagrams"
    },
    {
      "entity": "node001",
      "measurable": "IpFragCreates"
    },
    {
      "entity": "node001",
      "measurable": "IpFragFails"
    },
    ...typically hundreds more lines...
  ]
}

```

Or all entities which have data for a specific measurable such as loadone:

Example

```

[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/usage?measurable=loadone&indent=1"
{
  "data": [
    {
      "entity": "bright92",
      "measurable": "LoadOne"
    },
    {
      "entity": "node001",
      "measurable": "LoadOne"
    }
  ]
}

```

The Latest Monitoring Data Via /v1/monitoring/latest

The latest resource can be used to retrieve the last known sampled data points.

It is possible to get the latest monitoring data for all (entity, measurable) pairs.

This may result in a lot of information: about 125 bytes per (entity, measurable) pair.

Example


```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/latest?indent=1"
{
  "data": [
    {
      "age": 47.868,
      "entity": "default",
      "measurable": "CoresTotal",
      "raw": 1.0,
      "time": 1540476088861,
      "value": "1"
    },
    {
      "age": 47.868,
      "entity": "default",
      "measurable": "CoresUp",
      "raw": 1.0,
      "time": 1540476088861,
      "value": "1"
    },
    {
      "age": 47.868,
      "entity": "default",
      "measurable": "NodesClosed",
      "raw": 0.0,
      "time": 1540476088861,
      "value": "0"
    },
    {
      "age": 47.868,
      "entity": "default",
      "measurable": "NodesDown",
      "raw": 0.0,
      "time": 1540476088861,
      "value": "0"
    },
    ...typically thousands more lines...
  ]
}
```

The latest data can be requested for a selection of entities and measurables.

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/latest?entity=node001&indent=1"
{
  "data": [
    {
      "age": 138.625,
      "entity": "node001",
      "measurable": "IpForwDatagrams",
      "raw": 0.0,
      "time": 1540476100389,
      "value": "0/s"
    },
    {
      "age": 138.625,
      "entity": "node001",

```

```

    "measurable": "IpFragCreates",
    "raw": 0.0,
    "time": 1540476100389,
    "value": "0/s"
  },
  {
    "age": 138.625,
    "entity": "node001",
    "measurable": "IpFragFails",
    "raw": 0.0,
    "time": 1540476100389,
    "value": "0/s"
  },
  ...typically hundreds more lines...

```

```

[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/latest?entity=node001..node004&indent=1"
...as for previous output but for the range of nodes001..node004...

```

```

[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/latest?measurable=LoadOne&indent=1"
{
  "data": [
    {
      "age": 114.099,
      "entity": "bright92",
      "measurable": "LoadOne",
      "raw": 0.03,
      "time": 1540476351361,
      "value": "0.03"
    },
    {
      "age": 155.07,
      "entity": "node001",
      "measurable": "LoadOne",
      "raw": 0.0,
      "time": 1540476310390,
      "value": "0"
    }
  ]
}
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/latest?entity=node001&measurable=LoadOne&indent=1"
{
  "data": [
    {
      "age": 106.706,
      "entity": "node001",
      "measurable": "LoadOne",
      "raw": 0.0,
      "time": 1540476790390,
      "value": "0"
    }
  ]
}

```

Historic Data Dump Via /v1/monitoring/dump

Dumping historic data can be done using the entry point:

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/dump?<options>"
```

The dump resource has several options:

- entity: name or range of entities
- measurable: name of the measurable
- start: time to be plotted (default: -1h)
- end: end to be plotted (default: now)
- intervals: number of interpolation intervals (default: 0, raw data)
- epoch: display timestamps as unix epoch (default: 0)

The time specification format is the same one used for the `dumpmonitoringdata` command (section 12.6.4 of the *Administrator Manual*).

To prevent gigabytes of data being retrieved when no options are specified, entity and measurable must be specified.

If there is a need to dump all the monitoring data, then it can be done by specifying empty strings for both entity and measurable. For example, the following command dumps all raw data for the default last hour:

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/monitoring/dump?entity=&measurable=?indent=1"
{
  "data": [
    {
      "entity": "default",
      "measurable": "CoresTotal",
      "raw": 1.0,
      "time": "2018/10/25 13:15:28",
      "value": "1"
    },
    {
      "entity": "default",
      "measurable": "CoresTotal",
      "raw": 1.0,
      "time": "2018/10/25 16:35:28",
      "value": "1"
    },
    {
      "entity": "default",
      "measurable": "CoresUp",
      "raw": 1.0,
      "time": "2018/10/25 13:49:28",
      "value": "1"
    },
    ...typically thousands more lines...
  ]
}
```

4.2.3 Session Using /v1/session

The response to the sessions method is similar to the output from listing in session mode of cmsh (cmsh -c "session list")

The method lists the sessions that the cluster manager is involved with.

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/session?indent=1"
[
  {
    "address": "127.0.0.1",
    "group": "admin",
    "node": "bright92",
    "type": "node",
    "username": ""
  },
  {
    "address": "10.141.255.254",
    "group": "admin",
    "type": "node",
    "username": ""
  },
  {
    "address": "10.141.0.1",
    "group": "node",
    "node": "node001",
    "type": "node",
    "username": ""
  },
  {
    "address": "10.141.0.2",
    "group": "node",
    "node": "node002",
    "type": "node",
    "username": ""
  }
]
```

4.2.4 Version Using /v1/version

The version method returns version parameters.

```
[alice@bright92 ~]$ <curlauth>/rest/v1/version?indent=1"
{
  "build_hash": "daf30669f1",
  "build_index": 152175,
  "cm_version": "9.2",
  "cmd_version": "2.2",
  "database_version": 36280
}
```

4.2.5 License Using /v1/license

The license method returns license parameters.

Example

```
[alice@bright92 ~]$ <curlauth>/rest/v1/license?indent=1"
{
```

```

"acceleratorNodeCount": 0,
"accountingAndReporting": true,
"baseType": "LicenseInfo",
"burstNodeCount": 0,
"childType": "",
"edgeSites": true,
"edition": "Advanced",
"endTime": 2177449140,
"licenseType": "Commercial",
"licensedAcceleratorNodes": 80,
"licensedBurstNodes": 1000,
"licensedNodes": 100,
"licensee": "/C=US/ST=None/L=None/O=None/OU=None/CN=bright92",
"macAddress": "FA:16:3E:3B:94:98",
"message": "",
"modified": false,
"nodeCount": 3,
"oldLocalUniqueKey": 0,
"refPartitionUniqueKey": 21474836481,
"revision": "",
"serial": 1017214,
"startTime": 1508108400,
"toBeRemoved": false,
"uniqueKey": 281474976710653,
"version": "7.0 and above"
}

```

4.2.6 Sysinfo Using /v1/sysinfo

The sysinfo method is similar to the sysinfo command in the device mode of cmsh. It returns information about some basic system hardware parameters.

Example

```

[alice@bright92 ~]$ <curlauth>/rest/v1/sysinfo?indent=1"
{
  "node001": {
    "baseType": "SysInfoCollector",
    "biosDate": "04/01/2014",
    "biosVendor": "SeaBIOS",
    "biosVersion": "1.13.0-1ubuntu1.1",
    "bootIf": "ens3",
    "childType": "",
    "clusterRandomNumber": 6332472641088672013,
    "diskCount": 2,
    "diskTotalSpace": 10745806848,
    "disks": [
      {
        "baseType": "DiskInfo",
        "childType": "",
        "ioScheduler": "[mq-deadline] kyber bfq none",
        "model": "virtio",
        "modified": false,
        "name": "vda",
        "oldLocalUniqueKey": 0,
        "rev": "",
        "revision": "",

```

```

    "size": 8388608,
    "toBeRemoved": false,
    "uniqueKey": 281474976710948,
    "vendor": ""
  },
  {
    "baseType": "DiskInfo",
    "childType": "",
    "ioScheduler": "[mq-deadline] kyber bfq none",
    "model": "virtio",
    "modified": false,
    "name": "vdb",
    "oldLocalUniqueKey": 0,
    "rev": "",
    "revision": "",
    "size": 10737418240,
    "toBeRemoved": false,
    "uniqueKey": 281474976710949,
    "vendor": ""
  }
],
"extra": null,
"fabric": false,
"fips": false,
"fpgas": [],
"gpus": [],
"ibGUIDs": [],
"interconnects": [],
"memory": [
  {
    "IDs": [
      "0/0"
    ],
    "baseType": "MemoryInfo",
    "childType": "",
    "description": "DIMM RAM",
    "locations": [
      "DIMM 0"
    ],
    "modified": false,
    "oldLocalUniqueKey": 0,
    "revision": "",
    "size": 1073741824,
    "speed": 0,
    "toBeRemoved": false,
    "uniqueKey": 281474976710950
  }
],
"memorySwap": 0,
"memoryTotal": 1016152064,
"modified": false,
"motherboardManufacturer": "",
"motherboardName": "",
"nics": [
  "ens3"
]

```

```

],
"oldLocalUniqueKey": 0,
"osFlavor": "Rocky8u5",
"osName": "Linux",
"osVersion": "4.18.0-348.el8.0.2.x86_64",
"parentUniqueKey": 85899345921,
"processors": [
  {
    "IDs": [
      0
    ],
    "baseType": "Processor",
    "bogomips": 4190.15,
    "cacheSize": 16777216,
    "childType": "",
    "coreIDs": [
      0
    ],
    "cores": 1,
    "model": "Intel(R) Xeon(R) Silver 4116 CPU @ 2.10GHz",
    "modified": false,
    "oldLocalUniqueKey": 0,
    "physicalIDs": [
      0
    ],
    "revision": "",
    "speed": 2095078000.0,
    "toBeRemoved": false,
    "uniqueKey": 281474976710947,
    "vendor": "GenuineIntel"
  }
],
"raidControllers": [],
"refDeviceUniqueKey": 38654705666,
"revision": "",
"seLinux": false,
"systemManufacturer": "OpenStack Foundation",
"systemName": "OpenStack Nova",
"timestamp": 1651158566,
"toBeRemoved": false,
"uniqueKey": 85899345921,
"updateCount": 5,
"vendorTag": "5bf2a543-542d-4391-946c-abb648a09158",
"virtualCluster": true
},
"node002": {
  "baseType": "SysInfoCollector",
  "biosDate": "04/01/2014",
  ...
}

```

4.2.7 Device Information Using /v1/device

Example

```

[alice@bright92 ~]$ <curlauth>/rest/v1/device?indent=1"
[

```

```

{
  "cluster": "bright92",
  "hostname": "bright92",
  "ip": "10.141.255.254",
  "mac": "FA:16:3E:EF:71:05",
  "network": "internalnet",
  "roles": [
    "backup",
    "storage",
    "firewall",
    "headnode",
    "monitoring",
    "provisioning",
    "boot"
  ],
  "type": "HeadNode"
},
{
  "category": "default",
  "cluster": "bright92",
  "hostname": "node001",
  "ip": "10.141.0.1",
  "mac": "FA:16:3E:2B:A4:31",
  "network": "internalnet",
  "type": "PhysicalNode"
},
{
  "category": "default",
  "cluster": "bright92",
  "hostname": "node002",
  "ip": "10.141.0.2",
  "mac": "FA:16:3E:D4:C8:5A",
  "network": "internalnet",
  "type": "PhysicalNode"
}
]

```

4.2.8 WLM Information Using /v1/workload

Currently the workload path takes the jobs resource.

Example

```

[alice@bright92 ~]$ <curlauth>/rest/v1/workload/jobs?indent=1 "
[
{
  "account": "projecty",
  "group": "alice",
  "job_id": "2301",
  "job_name": "iozone",
  "nodes": [
    "node001"
  ],
  "queue": "defq",
  "run_time": "4m 39s",
  "start_time": "2023/06/08 14:24:53",
  "state": "RUNNING",

```



```

    "submit_time": "2023/06/08 14:24:53",
    "user": "alice"
  },
  {
    "account": "projectx",
    "group": "charlie",
    "job_id": "2306",
    "job_name": "sleep",
    "nodes": [
      "node001"
    ],
    "queue": "defq",
    "run_time": "3m 34s",
    "start_time": "2023/06/08 14:25:58",
    "state": "RUNNING",
    "submit_time": "2023/06/08 14:25:57",
    "user": "charlie"
  },
  {
    "account": "projecty",
    "group": "alice",
    "job_id": "2307",
    "job_name": "iozone",
    ...

```

4.2.9 Event Generation Using `/v1/event`

The event endpoint can be used to generate an event in CMDaemon from a JSON format input.

The input can be:

Example

```

[alice@bright92 ~]$ cat /tmp/rest.in
{
  "message": "hello world",
  "details": "send via rest",
  "severity": "notice"
}

```

The curl authentication string, `<curlauth>` (section 4.1) is slightly modified from its value of:

```
curl --cert ~/.cm/cert.pem --key ~/.cm/cert.key -k "https://master:8081"
```

to

```
curl --cert ~/.cm/cert.pem --key ~/.cm/cert.key -k --data "@/tmp/rest.in" "https://master:8081"
```

This modified version allows POST data to be entered. The modified version can be called `<curlauthpost>`, and can be used as follows, returning true:

Example

```

[alice@bright92 ~]$ <curlauthpost>/rest/v1/event
true

```

With the default settings of cmsh, a window running cmsh shows:

```

[root@bright92 ~]# cmsh
[bright92]%
Tue Jun  4 11:09:21 2024 [notice] bright92: hello world
For details type: events details 1

```

and, if as suggested, the event details 1 is typed, the details from the input are seen:

```
[bright92]% events details 1  
send via rest
```

5

NVIDIA Bright Cluster Manager JSON API

This chapter gives an alphabetical list of the JSON API services and entities available for NVIDIA Bright Cluster Manager. The API reference documentation for all available services and entities is available on the head node at:

`/cm/local/apps/cmd/etc/htdocs/userportal/download/json/index.html`.

It can also be accessed via the user portal of the cluster by clicking on the JSON API documentation link in the documentation section of the home page (Section 12.8.4 of the *Administrator Manual*).

Some examples of JSON usage are given in section 5.3

5.1 Services

- 5.1.1 `auth`
- 5.1.2 `beegfs`
- 5.1.3 `ceph`
- 5.1.4 `cert`
- 5.1.5 `cloud`
- 5.1.6 `device`
- 5.1.7 `etcd`
- 5.1.8 `gui`
- 5.1.9 `job`
- 5.1.10 `keyvalue`
- 5.1.11 `kube`
- 5.1.12 `main`
- 5.1.13 `mon`
- 5.1.14 `net`
- 5.1.15 `part`
- 5.1.16 `proc`
- 5.1.17 `prov`
- 5.1.18 `serv`
- 5.1.19 `session`
- 5.1.20 `status`
- 5.1.21 `test`
- 5.1.22 `user`

5.2 Entities

5.2.1 AMDGPUSettings: GPUSettings

parent: GPUSettings

Parameter: gpuClockLevel

Type: unsigned integer

Description: Set the GPU clock frequency level

Parameter: memoryClockLevel

Type: unsigned integer

Description: Set the GPU memory clock frequency level

Parameter: powerPlay

Type: enum

Description: Set powerplay level

Parameter: gpuOverDrive

Type: float

Description: This sets the percentage above maximum for the max performance Level

Parameter: memoryOverDrive

Type: float

Description: This sets the percentage above maximum for the max performance Level

Parameter: fanSpeed

Type: unsigned integer

Description: Fan speed value

Parameter: minimalGPUClock

Type: unsigned integer

Description: Minimum GPU clock speed

Parameter: minimalMemoryClock

Type: unsigned integer

Description: Minimum GPU Memory clock speed

Parameter: activityThreshold

Type: float

Description: Workload required before clock levels change

Parameter: hysteresisUp

Type: float

Description: Delay before clock level is increased

Parameter: hysteresisDown

Type: float

Description: Delay before clock level is decreased

5.2.2 ANFVolume: Entity

parent: Entity

Parameter: id

Type: string

Description: Unique identifier

Parameter: name

Type: string

Description: Name of the ANF volume.

Parameter: owner

Type: string

Description: Owner of the Azure NetApp pool and volume

Parameter: resourceGroup

Type: string

Description: The resource group where the volume was created

Parameter: netAppAccount

Type: string

Description: The NetApp account name where the volume was created

Parameter: location

Type: string

Description: The Azure location where the volume was created

Parameter: size

Type: unsigned integer

Description: Size in TB. Should be at least 4

Parameter: status

Type: string

Description: Status of the volume

Parameter: mountPath

Type: string

Description: String containing IP and mount path of the volume

Parameter: management

Type: enum

Description: Volume management type

Parameter: creationTime

Type: string

Description: Creation time

Parameter: `sharedWith`

Type: list of strings

Description: Other cmjob users that can use this volume for jobs.

5.2.3 ArchOSInfo: Entity

parent: Entity

Parameter: `arch`

Type: enum

Description: Architecture

Parameter: `os`

Type: enum

Description: Operating system

5.2.4 ArchOS: ArchOSInfo

parent: ArchOSInfo

Parameter: `primaryImage`

Type: reference to SoftwareImage or None

Description: Image used to boot new nodes and keep /cm/shared up to date, empty if head node is to be used

Parameter: `shared`

Type: reference to FSPart or None

Description: Shared directory

Parameter: `installer`

Type: reference to FSPart or None

Description: Node installer

Parameter: `priority`

Type: unsigned integer

Description: Priority

5.2.5 AWSIntermediateStorage: CMJobIntermediateStorage

parent: CMJobIntermediateStorage

Parameter: `bucket`

Type: string

Description: S3 Bucket name

Parameter: `folder`

Type: string

Description: Folder name to place data into

Parameter: `region`

Type: string

Description: Region for S3 bucket

Parameter: `maxFSxInstanceCapacity`

Type: unsigned integer

Description: Maximum FSx instance size(GiB) that user can request.

Parameter: `maxFSxInstanceCountPerUser`

Type: unsigned integer

Description: Maximum amount of FSx instances that a user can have simultaneously.

Parameter: `defaultFSxInstanceCapacity`

Type: unsigned integer

Description: Default capacity of an FSx instance, used if not specified during creation.

Parameter: `securityGroupFSx`

Type: string

Description: Security group ID of the FSx instances

5.2.6 `AzureDataDisk: AzureDisk`

parent: `AzureDisk`

Parameter: `lun`

Type: unsigned integer

Description: Logical unit number of a block device to be attached

Parameter: `removeOnTermination`

Type: boolean

Description: If true, the drive will be removed when the instance it is attached to gets terminated

5.2.7 `AzureDisk: Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: Name of the data disk

Parameter: `size`

Type: unsigned integer

Description: Size of the drive

Parameter: `image`

Type: string

Description: URL to a source image for the disk

Parameter: `storageAccountName`

Type: string

Description: Name of a storage account to hold the disk

Parameter: imageContainerName

Type: string

Description: If the disk has the image url set, the image will be copied to a container with this name

Parameter: containerName

Type: string

Description: Name of a container in storage account to hold the disk

Parameter: managedDiskParameters

Type: AzureManagedDiskParameters

Description: Azure Managed Disk parameters

5.2.8 AzureExtension: Entity

parent: Entity

Parameter: name

Type: string

Description: User-defined name of the private cloud

Parameter: location

Type: reference to AzureLocation

Description: Region of the cluster extension

Parameter: resourceGroup

Type: string

Description: Azure resource group name for all resources in the extension

Parameter: network

Type: reference to Network

Description: Network associated with the extension

Parameter: extraField

Type: list of strings

Description: Reserved

5.2.9 AzureIntermediateStorage: CMJobIntermediateStorage

parent: CMJobIntermediateStorage

Parameter: storageAccountId

Type: string

Description: Azure storage account ID

Parameter: accessKey

Type: string

Description: Azure storage account access key

Parameter: container

Type: string

Description: Container name to place data into

Parameter: `netAppSubnetId`

Type: `string`

Description: Azure ID for the delegated subnet where ANF volumes will be created

Parameter: `netAppResourceGroupName`

Type: `string`

Description: Resource group where the NetApp account is located

Parameter: `netAppAccountName`

Type: `string`

Description: Name of the NetApp account to create ANF volumes

Parameter: `netAppServiceLevel`

Type: `string`

Description: Service Level for newly created ANF volumes

Parameter: `maxANFVolumeCapacity`

Type: `unsigned integer`

Description: Maximum ANF volume size(TiB) that user can request.

Parameter: `maxANFVolumeCountPerUser`

Type: `unsigned integer`

Description: Maximum amount of ANF volumes that a user can have simultaneously.

Parameter: `defaultANFVolumeCapacity`

Type: `unsigned integer`

Description: Default capacity of an ANF volume, used if not specified during creation.

5.2.10 `AzureLocation: CloudRegion`

parent: `CloudRegion`

5.2.11 `AzureManagedDiskParameters: Entity`

parent: `Entity`

Parameter: `id`

Type: `string`

Description: Managed disks resource ID

Parameter: `storageAccountType`

Type: `string`

Description: Storage account type for managed disks

5.2.12 `AzureOSDisk: AzureDisk`

parent: `AzureDisk`

Parameter: `cachingType`

Type: enum

Description: Disk caching type

5.2.13 AzureProvider: CloudProvider

parent: CloudProvider

Parameter: subscriptionId

Type: string

Description: Azure Subscription ID.

Parameter: clientId

Type: string

Description: Azure Client ID.

Parameter: clientSecret

Type: string

Description: Azure Client Secret.

Parameter: tenantId

Type: string

Description: Tenant ID.

Parameter: cloudName

Type: string

Description: Azure Cloud Name. Used to access non-public regions.

Parameter: defaultLocation

Type: reference to AzureLocation or None

Description: Default location to start virtual machine in.

Parameter: defaultVMSize

Type: reference to AzureVMSize or None

Description: Default cloud node VM size.

Parameter: defaultDirectorVMSize

Type: reference to AzureVMSize or None

Description: Default cloud director VM size.

Parameter: defaultHyperVGeneration

Type: enum

Description: Hyper-V generation to use by default (V1 or V2), see <https://docs.microsoft.com/en-us/azure/virtual-machines/generation-2>

Parameter: extensions

Type: list of AzureExtension

Description: List of extensions

Parameter: regions

Type: list of references to AzureLocation

Description: *none*

Parameter: defaultNodeInstallerImage

Type: string

Description: Default node-installer image, can be overridden in the OS disk.

Parameter: marketplaceUsePolicy

Type: enum

Description: Preference towards using marketplace images

Parameter: freeImageType

Type: enum

Description: What kind of image to use for cloud nodes within the license

5.2.14 AzureSettings: CloudSettings

parent: CloudSettings

Parameter: instanceId

Type: string

Description: Instance-ID provided by Azure

Parameter: availabilitySetName

Type: string

Description: Availability set name

Parameter: nicId

Type: string

Description: Network interface identifier

Parameter: externalIP

Type: IP

Description: The external IP address as set by the cloudprovider

Parameter: useKernelAndInitrdFromTheSoftwareImage

Type: boolean

Description: Make the cloud node's node-installer download the kernel and the initrd from the software image configured for this cloud node and then reboot the cloud node to use those, instead of using the kernel and initrd already present on the node-installer's cloud image.

Parameter: location

Type: reference to AzureLocation

Description: Virtual Machine location

Parameter: resourceGroupName

Type: string

Description: Azure Resource Group Name

Parameter: `storageAccountName`

Type: `string`

Description: Name of a storage account where boot diagnostics will be stored for this instance

Parameter: `deploymentName`

Type: `string`

Description: Name of the Azure deployment associated with this node

Parameter: `publicIpName`

Type: `string`

Description: Name of a public ip object to be assigned to the node

Parameter: `VMSize`

Type: reference to `AzureVMSize`

Description: Virtual Machine size

Parameter: `hyperVGeneration`

Type: `enum`

Description: Hyper-V generation to use (V1 or V2), see <https://docs.microsoft.com/en-us/azure/virtual-machines/generation-2>

Parameter: `disks`

Type: list of `AzureDisk`

Description: Storage disks.

Parameter: `availabilityZone`

Type: `string`

Description: Azure Availability zone where all the resources related to this VM will be allocated

Parameter: `freeImageType`

Type: `enum`

Description: What kind of image to use for cloud nodes within the license

5.2.15 `AzureVMSize: CloudType`

parent: `CloudType`

Parameter: `hyperVGenerations`

Type: list of strings

Description: Supported Hyper-V generations.

5.2.16 `BackupInfo: Entity`

parent: `Entity`

Parameter: `refSourceNodeUniqueKey`

Type: unsigned integer

Description: Node

Parameter: `refBackupNodeUniqueKey`

Type: unsigned integer

Description: Node

Parameter: refFSPartUniqueKey

Type: unsigned integer

Description: FSPart

Parameter: timestamp

Type: unsigned integer

Description: Timestamp of the completion of the backup

Parameter: index

Type: unsigned integer

Description: Index of the backup

5.2.17 BackupRole: Role

parent: Role

Parameter: directory

Type: string

Description: Directory where backups for other nodes are saved

Parameter: disabled

Type: boolean

Description: Disabled nodes will no longer be used

Parameter: backupRing

Type: unsigned integer

Description: Only backup to nodes within the same ring

Parameter: maximumNumberOfBackups

Type: unsigned integer

Description: Maximum number of backups this node should be used for, set 0 for unlimited

5.2.18 BadEntityManagers: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: managers

Type: list of strings

Description: Managers

5.2.19 BaseNginxRole: Role

parent: Role

Parameter: workerConnections

Type: unsigned integer

Description: Number of worker connections

Parameter: `sendFile`

Type: boolean

Description: Allow files to be sent

Parameter: `tcpNoPush`

Type: boolean

Description: *none*

Parameter: `tcpNoDelay`

Type: boolean

Description: TCP no delay

Parameter: `keepAliveTimeout`

Type: unsigned integer

Description: Keep alive timeout

Parameter: `typesHashMaxSize`

Type: unsigned integer

Description: Types hash max size

5.2.20 `BasicResource: Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: Name

Parameter: `dependency`

Type: unsigned integer

Description: Dependency on another resource, run this resource on the same node as the dependency

Parameter: `exclude`

Type: list of unsigned numbers

Description: Do not run this resource on any node running one of the excluded resources

Parameter: `disabled`

Type: boolean

Description: Disable the resource from being given to any node

Parameter: `stopOnRemove`

Type: boolean

Description: Automatically stop resource when removed

5.2.21 BeeGFSClntConfig: Entity

parent: Entity

Parameter: `refBeeGFSClusterUniqueKey`

Type: unsigned integer

Description: BeeGFS cluster

Parameter: `enableQuota`

Type: boolean

Description: Enable quota

Parameter: `createHardlinksAsSymlinks`

Type: boolean

Description: Create a symlink when an application tries to create a hardlink

Parameter: `mountSanityCheck`

Type: float

Description: Time in ms server has to respond after mount sanity check

Parameter: `sessionCheckOnClose`

Type: boolean

Description: Check for valid sessions on storage server when a file is closed

Parameter: `syncOnClose`

Type: boolean

Description: Sync file content on close

Parameter: `targetOfflineTimeout`

Type: unsigned integer

Description: Timeout until all storage targets are considered offline when no target state updates can be fetched from management server

Parameter: `updateTargetStatesTime`

Type: float

Description: Interval for storage targets states check

Parameter: `enableXAttrs`

Type: boolean

Description: Enable xattrs

Parameter: `enableACLs`

Type: boolean

Description: Enable ACLs

Parameter: `fileCacheType`

Type: string

Description: File read/write cache type

Parameter: preferredMetaFile

Type: string

Description: Path to a file with preferred metadata servers

Parameter: preferredStorageFile

Type: string

Description: Path to a file with preferred storage targets

Parameter: preferredMetadataServers

Type: list of strings

Description: Preferred metadata server IDs

Parameter: preferredStorageServers

Type: list of strings

Description: Preferred metadata server IDs

Parameter: remoteFSync

Type: boolean

Description: Should fsync be executed on server to flush cached file

Parameter: useGlobalAppendLocks

Type: boolean

Description: Should files, opened in append mode, be protected by locks on local machine (YES) or on servers (NO)

Parameter: useGlobalFileLocks

Type: boolean

Description: Should advisory locks be checked on local machine (YES) or on servers (NO)

Parameter: connectionSettings

Type: BeeGFSClientConnectionSettings

Description: Submode containing BeeGFS client connection settings

Parameter: logType

Type: enum

Description: Send log messages to the helper daemon or syslog to send them to the system logger

Parameter: level

Type: unsigned integer

Description: Log level

Parameter: addClientId

Type: boolean

Description: Defines whether the ClientID should appear in each log line

Parameter: `helperIp`

Type: IP

Description: Defines the IP address of the node on which the beegfs-helperd runs for remote logging

5.2.22 BeeGFSCliientConnectionSettings: Entity

parent: Entity

Parameter: `portUDP`

Type: unsigned integer

Description: UDP port for the client daemon

Parameter: `maxInternodeNumber`

Type: unsigned integer

Description: Max number of simultaneous connections to the same node

Parameter: `communicationRetry`

Type: unsigned integer

Description: Time for retries in case of a network failure

Parameter: `fallbackExpiration`

Type: unsigned integer

Description: Time after which a connection to a fallback interface expires

Parameter: `interfacesFile`

Type: string

Description: Path to the file with a list of interfaces for communication

Parameter: `interfacesList`

Type: list of strings

Description: List of interfaces for communication

Parameter: `maxConcurrentAttempts`

Type: unsigned integer

Description: This may help in case establishing new connections keeps failing and produces fallbacks

Parameter: `netFilterFile`

Type: string

Description: Path to a file with a list of allowed IP subnets

Parameter: `tcpOnlyFilterFile`

Type: string

Description: Path to a file with a list of no-RDMA IP ranges

Parameter: `useRDMA`

Type: boolean

Description: Use RDMA

Parameter: `rdmaBuffersNumber`

Type: unsigned integer

Description: Number of RDMA buffers

Parameter: rdmaBufferSize

Type: unsigned integer

Description: Maximum size of a buffer that will be sent over the network

Parameter: rdmaTypeOfService

Type: unsigned integer

Description: RDMA type of service

Parameter: unmountRetries

Type: boolean

Description: If communication error occurs during unmount, the unsuccessful communications will be retried normally.

5.2.23 BeeGFSClientRole: Role

parent: Role

Parameter: configurations

Type: list of BeeGFSClientConfig

Description: List of BeeGFS client configurations

5.2.24 BeeGFSCluster: Entity

parent: Entity

Parameter: name

Type: string

Description: Name of the BeeGFS cluster

Parameter: multiMode

Type: boolean

Description: BeeGFS multi mode enabled

Parameter: mountpoint

Type: string

Description: Path to a beegfs filesystem mountpoint

Parameter: authFile

Type: string

Description: Path to the shared secret authentication file

5.2.25 BeeGFSHelperConfig: Entity

parent: Entity

Parameter: refBeeGFSClusterUniqueKey

Type: unsigned integer

Description: BeeGFS cluster

Parameter: portTCP

Type: unsigned integer

Description: TCP port for helper service

Parameter: runDaemonized

Type: boolean

Description: Run the helper as a daemon

Parameter: workersNumber

Type: unsigned integer

Description: Number of worker threads for helper service

Parameter: connectionSettings

Type: BeeGFSHelperConnectionSettings

Description: Submode containing BeeGFS helper connection settings

Parameter: logSettings

Type: BeeGFSLogSettings

Description: Submode containing BeeGFS logging settings

5.2.26 BeeGFSHelperConnectionSettings: Entity

parent: Entity

Parameter: portTCP

Type: unsigned integer

Description: TCP port for the service

5.2.27 BeeGFSHelperRole: Role

parent: Role

Parameter: configurations

Type: list of BeeGFSHelperConfig

Description: List of BeeGFS helper configurations

5.2.28 BeeGFSLogSettings: Entity

parent: Entity

Parameter: logType

Type: enum

Description: Defines the logger type. This can either be 'syslog' to send log messages to the general system logger or 'logfile'

Parameter: level

Type: unsigned integer

Description: Log level

Parameter: noDate

Type: boolean

Description: Do not show date along with time in log

Parameter: numberOfLines

Type: unsigned integer

Description: Number of lines in log file, after which it will be rotated

Parameter: numberOfRotatedFiles

Type: unsigned integer

Description: Number of old log files to keep

Parameter: file

Type: string

Description: Path to the log file, empty means logs go to the journal

5.2.29 BeeGFSManagementConfig: Entity

parent: Entity

Parameter: refBeeGFSClusterUniqueKey

Type: unsigned integer

Description: BeeGFS cluster

Parameter: dataDir

Type: string

Description: Path to the data directory

Parameter: allowNewServers

Type: boolean

Description: Allow new servers registration

Parameter: allowNewTargets

Type: boolean

Description: Allow new storage targets registration

Parameter: targetOfflineTimeout

Type: unsigned integer

Description: Timeout until targets on a storage server are considered offline when no target status is received

Parameter: clientAutoRemove

Type: unsigned integer

Description: Time after which an unreachable node is considered dead

Parameter: numberOfWorkers

Type: unsigned integer

Description: Number of worker threads

Parameter: metaDynamicPools

Type: boolean

Description: Raise lower limits if difference in capacity becomes too large between targets

Parameter: metaInodesLowLimit

Type: string

Description: Metadata inode free space pool threshold

Parameter: metaInodesEmergencyLimit

Type: string

Description: Metadata inode free space pool threshold

Parameter: metaSpaceLowLimit

Type: unsigned integer

Description: Meta space low limit

Parameter: metaSpaceEmergencyLimit

Type: unsigned integer

Description: Meta space emergency limit

Parameter: storageDynamicPools

Type: boolean

Description: Raise lower limits if difference in capacity becomes too large between targets

Parameter: storageInodesLowLimit

Type: unsigned integer

Description: Storage inode free space pool threshold

Parameter: storageInodesEmergencyLimit

Type: unsigned integer

Description: Storage inode free space pool threshold

Parameter: storageSpaceLowLimit

Type: unsigned integer

Description: Storage space free space pool threshold

Parameter: storageSpaceEmergencyLimit

Type: unsigned integer

Description: Storage space free space pool threshold

Parameter: enableQuota

Type: boolean

Description: Enable quota

Parameter: quotaQueryGIDFile

Type: string

Description: Path to a file with GIDs to be checked by quota

Parameter: quotaGIDs

Type: list of strings

Description: GIDs to be checked by quota

Parameter: quotaQueryGIDRange

Type: string

Description: GID range to be checked by quota

Parameter: quotaQueryUIDFile

Type: string

Description: Path to a file with UIDs to be checked by quota

Parameter: quotaUIDs

Type: list of strings

Description: UIDs to be checked by quota

Parameter: quotaQueryUIDRange

Type: string

Description: UID range to be checked by quota

Parameter: quotaQueryType

Type: string

Description: Query type for quota

Parameter: quotaQueryWithSystemUsersGroups

Type: boolean

Description: Allow also system users/groups to be checked by quota

Parameter: quotaUpdateInterval

Type: unsigned integer

Description: Quota update interval

Parameter: connectionSettings

Type: BeeGFSManagementConnectionSettings

Description: Submode containing BeeGFS management connection settings

Parameter: logSettings

Type: BeeGFSLogSettings

Description: Submode containing BeeGFS logging settings

5.2.30 BeeGFSManagementConnectionSettings: Entity

parent: Entity

Parameter: portTCP

Type: unsigned integer

Description: TCP port for the service

Parameter: portUDP

Type: unsigned integer

Description: UDP port for the service

Parameter: backlogTCP

Type: unsigned integer

Description: TCP listen backlog

Parameter: interfacesFile

Type: string

Description: Path to the file with a list of interfaces for communication

Parameter: interfacesList

Type: list of strings

Description: List of interfaces for communication

Parameter: netFilterFile

Type: string

Description: Path to a file with a list of allowed IP subnets

Parameter: useRDMA

Type: boolean

Description: Use RDMA

5.2.31 BeeGFSManagementRole: Role

parent: Role

Parameter: configurations

Type: list of BeeGFSManagementConfig

Description: List of BeeGFS management configurations

5.2.32 BeeGFSMetadataConfig: Entity

parent: Entity

Parameter: refBeeGFSClusterUniqueKey

Type: unsigned integer

Description: BeeGFS cluster

Parameter: dataDir

Type: string

Description: Path to the data directory

Parameter: bindToNumaZone

Type: string

Description: Zero-based NUMA zone number to which all threads of metadata process should be bound

Parameter: runDaemonized

Type: boolean

Description: Run the storage service as a daemon

Parameter: `clientXAttrs`

Type: `boolean`

Description: Enable client-side extended attributes

Parameter: `clientACLs`

Type: `boolean`

Description: Enable handling and storage of client-side ACLs

Parameter: `useExtendedAttributes`

Type: `boolean`

Description: Store metadata as extended attributes or not

Parameter: `allowUserSetPattern`

Type: `boolean`

Description: Allow non-privileged users to modify stripe pattern settings for directories they own

Parameter: `useAggressiveStreamPoll`

Type: `boolean`

Description: Actively poll for events instead of sleeping until an event occur

Parameter: `usePerUserMsgQueues`

Type: `boolean`

Description: Use per-user queues for pending requests

Parameter: `targetChooser`

Type: `enum`

Description: The algorithm to choose storage targets for file creation

Parameter: `targetOfflineTimeout`

Type: `unsigned integer`

Description: Timeout until targets on a storage server are considered offline when no target status is received

Parameter: `targetAttachmentFile`

Type: `string`

Description: File with a list of targets to be grouped within the same domain for randominternode

Parameter: `numberOfStreamListeners`

Type: `unsigned integer`

Description: The number of threads waiting for incoming data events

Parameter: `numberOfWorkers`

Type: `unsigned integer`

Description: Number of worker threads

Parameter: startByCMDaemon

Type: boolean

Description: Start service by CMDaemon or manually

Parameter: connectionSettings

Type: BeeGFSMetadataConnectionSettings

Description: Submode containing BeeGFS metadata connection settings

Parameter: logSettings

Type: BeeGFSLogSettings

Description: Submode containing BeeGFS logging settings

5.2.33 BeeGFSMetadataConnectionSettings: Entity

parent: Entity

Parameter: portTCP

Type: unsigned integer

Description: TCP port for the service

Parameter: portUDP

Type: unsigned integer

Description: UDP port for the service

Parameter: backlogTCP

Type: unsigned integer

Description: TCP listen backlog

Parameter: maxInternodeNumber

Type: unsigned integer

Description: Max number of simultaneous connections to the same node

Parameter: fallbackExpiration

Type: unsigned integer

Description: Time after which a connection to a fallback interface expires

Parameter: interfacesFile

Type: string

Description: Path to the file with a list of interfaces for communication

Parameter: interfacesList

Type: list of strings

Description: List of interfaces for communication

Parameter: netFilterFile

Type: string

Description: Path to a file with a list of allowed IP subnets

Parameter: tcpOnlyFilterFile

Type: string

Description: Path to a file with a list of no-RDMA IP ranges

Parameter: useRDMA

Type: boolean

Description: Use RDMA

Parameter: rdmaTypeOfService

Type: unsigned integer

Description: RDMA type of service

5.2.34 BeeGFSMetadataRole: Role

parent: Role

Parameter: configurations

Type: list of BeeGFSMetadataConfig

Description: List of BeeGFS metadata configurations

5.2.35 BeeGFSSStorageConfig: Entity

parent: Entity

Parameter: refBeeGFSClusterUniqueKey

Type: unsigned integer

Description: BeeGFS cluster

Parameter: dataDirs

Type: list of strings

Description: Path to the data directories

Parameter: targetOfflineTimeout

Type: unsigned integer

Description: Timeout until targets on a storage server are considered offline when no target status is received

Parameter: useAggressiveStreamPoll

Type: boolean

Description: Actively poll for events instead of sleeping until an event occur

Parameter: usePerTargetWorkers

Type: boolean

Description: Create a separate set of workers and attach it for each storage target

Parameter: usePerUserMsgQueues

Type: boolean

Description: Use per-user queues for pending requests

Parameter: runDaemonized

Type: boolean

Description: Run the storage service as a daemon

Parameter: `bindToNumaZone`

Type: string

Description: Zero-based NUMA zone number to which all threads of metadata process should be bound

Parameter: `resyncSafetyThreshold`

Type: unsigned integer

Description: Add an extra amount of time to the last successful communication timestamp, in case of a potential cache loss

Parameter: `fileReadAheadSize`

Type: unsigned integer

Description: Byte range submitted to the kernel for read-ahead after number of bytes was already read from target

Parameter: `fileReadAheadTriggerSize`

Type: unsigned integer

Description: Number of bytes after reading which the read-ahead is triggered

Parameter: `fileReadSize`

Type: unsigned integer

Description: Maximum amount of data server should read in a single operation

Parameter: `fileWriteSize`

Type: unsigned integer

Description: Maximum amount of data server should write in a single operation

Parameter: `fileWriteSyncSize`

Type: unsigned integer

Description: Number of bytes after which kernel will be advised to commit data

Parameter: `workerBufferSize`

Type: unsigned integer

Description: Size of network and io buffers, allocated for each worker

Parameter: `numberOfResyncGatherSlaves`

Type: unsigned integer

Description: Number of threads to gather filesystem information for a buddy mirror resync

Parameter: `numberOfResyncSlaves`

Type: unsigned integer

Description: Number of threads to sync filesystem information for a buddy mirror resync

Parameter: `numberOfStreamListeners`

Type: unsigned integer

Description: Number of threads waiting for incoming data events

Parameter: `numberOfWorkers`

Type: unsigned integer

Description: Number of worker threads

Parameter: `startByCMDaemon`

Type: boolean

Description: Start service by CMDaemon or manually

Parameter: `connectionSettings`

Type: `BeeGFSStorageConnectionSettings`

Description: Submode containing BeeGFS storage connection settings

Parameter: `logSettings`

Type: `BeeGFSLogSettings`

Description: Submode containing BeeGFS logging settings

5.2.36 `BeeGFSStorageConnectionSettings`: Entity

parent: Entity

Parameter: `portTCP`

Type: unsigned integer

Description: TCP port for the service

Parameter: `portUDP`

Type: unsigned integer

Description: UDP port for the service

Parameter: `backlogTCP`

Type: unsigned integer

Description: TCP listen backlog

Parameter: `maxInternodeNumber`

Type: unsigned integer

Description: Max number of simultaneous connections to the same node

Parameter: `interfacesFile`

Type: string

Description: Path to the file with a list of interfaces for communication

Parameter: `interfacesList`

Type: list of strings

Description: List of interfaces for communication

Parameter: `netFilterFile`

Type: string

Description: Path to a file with a list of allowed IP subnets

Parameter: tcpOnlyFilterFile

Type: string

Description: Path to a file with a list of no-RDMA IP ranges

Parameter: useRDMA

Type: boolean

Description: Use RDMA

Parameter: rdmaTypeOfService

Type: unsigned integer

Description: RDMA type of service

5.2.37 BeeGFSStorageRole: Role

parent: Role

Parameter: configurations

Type: list of BeeGFSStorageConfig

Description: List of BeeGFS storage configurations

5.2.38 BlockingOperation: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: message

Type: string

Description: Message

5.2.39 BlockingProvisioningOperation: BlockingOperation

parent: BlockingOperation

Parameter: requestIDs

Type: list of unsigned numbers

Description: Request IDs

5.2.40 BlockingWarningOperation: BlockingOperation

parent: BlockingOperation

5.2.41 BMCSettings: Entity

parent: Entity

Parameter: userName

Type: string

Description: Username used to send BMC commands

Parameter: userID

Type: integer

Description: User ID to send BMC commands

Parameter: password

Type: string

Description: Password used to send BMC commands

Parameter: powerResetDelay

Type: unsigned integer

Description: Delay used for BMC power reset, if set to > 0 power off; sleep X; power on is used

Parameter: extraArguments

Type: string

Description: Extra arguments passed to BMC commands

Parameter: privilege

Type: enum

Description: none

5.2.42 BootRole: Role

parent: Role

Parameter: nodegroups

Type: list of references to NodeGroup

Description: List of node groups which can boot from this node

Parameter: categories

Type: list of references to Category

Description: List of categories which can boot from this node

Parameter: racks

Type: list of references to Rack

Description: List of racks which can boot from this node

Parameter: softwareImages

Type: list of references to SoftwareImage

Description: List of software images from which can be booted, leave empty for all images

Parameter: allowRamdiskCreation

Type: boolean

Description: Allow the node to create ramdisks by itself, instead of waiting for them to be rsynced from the headnode

Parameter: disableAutomaticExports

Type: boolean

Description: Disable creation of automatic filesystem exports

Parameter: unmanagedNodes

Type: boolean

Description: Allow unmanged nodes to boot

Parameter: syncFSParts

Type: enum

Description: Sync FSParts mode

Parameter: fsparts

Type: list of references to FSPart

Description: FSParts

5.2.43 BurnConfig: Entity

parent: Entity

Parameter: name

Type: string

Description: A short name to identify this burn configuration.

Parameter: description

Type: string

Description: A more extensive description of this burn configuration.

Parameter: configuration

Type: string

Description: This XML data describes which burn tests should be used.

5.2.44 BurnStatus: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: startNewBurn

Type: boolean

Description: Starting new burn on next reboot

Parameter: burning

Type: boolean

Description: Currently burning

Parameter: information

Type: string

Description: Information

Parameter: configuration

Type: string

Description: Configuration

Parameter: `error`

Type: `string`

Description: Error message.

Parameter: `warnings`

Type: `unsigned integer`

Description: Number of warnings which have occurred so far.

Parameter: `phaseName`

Type: `string`

Description: Name of the current phase.

Parameter: `phaseTime`

Type: `string`

Description: Time past since the current phase was started.

Parameter: `burnComplete`

Type: `string`

Description: Set if the burn cycle has completed.

Parameter: `burnFailed`

Type: `boolean`

Description: Set if the burn cycle has failed.

Parameter: `testStatusList`

Type: `list of BurnTestStatus`

Description: *none*

Parameter: `tag`

Type: `string`

Description: Hardware tag.

5.2.45 `BurnTestStatus: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Test name.

Parameter: `status`

Type: `string`

Description: Test status.

Parameter: `started`

Type: `boolean`

Description: Indicates if test was started.

Parameter: `passed`

Type: `boolean`

Description: Indicates if test has passed.

Parameter: `failed`

Type: `boolean`

Description: Indicates if test has failed.

Parameter: `warning`

Type: `boolean`

Description: Indicates if test produced a warning.

5.2.46 **Category:** Entity

parent: Entity

Parameter: `name`

Type: `string`

Description: Name of category

Parameter: `fsmounts`

Type: list of `FSMount`

Description: Configure the entries placed in `/etc/fstab`

Parameter: `staticRoutes`

Type: list of `StaticRoute`

Description: Configure static routes for the interfaces

Parameter: `roles`

Type: list of `Role`

Description: Assign the roles the node should play

Parameter: `notes`

Type: `string`

Description: Administrator notes

Parameter: `gpuSettings`

Type: list of `GPUSettings`

Description: Configure the GPUs

Parameter: `softwareImageProxy`

Type: `SoftwareImageProxy`

Description: Software image the category will use

Parameter: `defaultGateway`

Type: `IP`

Description: Default gateway for the category

Parameter: `nameServers`

Type: list of strings

Description: List of name servers the category will use

Parameter: `timeServers`

Type: list of strings

Description: List of time servers the category will use

Parameter: `searchDomains`

Type: list of strings

Description: Search domains for the category

Parameter: `disksetup`

Type: string

Description: Node specific disk setup

Parameter: `biosSetup`

Type: string

Description: BIOS setup

Parameter: `installMode`

Type: string

Description: Installmode to be used by default, if none is specified in the node

Parameter: `newNodeInstallMode`

Type: string

Description: Installmode to be used by default, for new nodes

Parameter: `excludeListFull`

Type: string

Description: Exclude list for full install

Parameter: `excludeListSync`

Type: string

Description: Exclude list for sync install

Parameter: `excludeListUpdate`

Type: string

Description: Exclude list for update

Parameter: `excludeListGrab`

Type: string

Description: Exclude list for grabbing to an existing image

Parameter: `excludeListGrabnew`

Type: string

Description: Exclude list for grabbing to a new image

Parameter: initialize

Type: string

Description: Initialize script to be used for category

Parameter: finalize

Type: string

Description: Finalize script to be used for category

Parameter: raidconf

Type: string

Description: Node specific Hardware RAID configuration

Parameter: fsexports

Type: list of FSEExport

Description: Configure the entries placed in /etc/exports

Parameter: services

Type: list of OSServiceConfig

Description: Manage operating system services

Parameter: bmcSettings

Type: BMCSettings or None

Description: Configure the baseboard management controller settings

Parameter: selinuxSettings

Type: SELinuxSettings or None

Description: Configure the SELinux settings

Parameter: proxySettings

Type: ProxySettings or None

Description: Configure the proxy server settings

Parameter: nodeInstallerDisk

Type: boolean

Description: The node has it's own node installer disk

Parameter: installBootRecord

Type: boolean

Description: Install boot record on local disk

Parameter: managementNetwork

Type: reference to Network or None

Description: Determines what network should be used for management traffic. If not set, partition setting is used.

Parameter: `interactiveUser`

Type: `enum`

Description: Allow user login on node

Parameter: `fspartAssociations`

Type: list of `FSPartAssociation`

Description: *none*

Parameter: `dataNode`

Type: `boolean`

Description: If enabled the node will never do a FULL install without explicit user confirmation

Parameter: `allowNetworkingRestart`

Type: `boolean`

Description: Allow nodes to update ifcfg files and restart networking

Parameter: `excludeListManipulateScript`

Type: `string`

Description: A user defined script that can be used to do custom last minute changes to the exclude lists used by `cmdaemon` to `rsync`

Parameter: `ioScheduler`

Type: `string`

Description: The I/O scheduler for the disks

Parameter: `useExclusivelyFor`

Type: `string`

Description: Use node exclusively for desired function: stop all other services

Parameter: `kernelVersion`

Type: `string`

Description: Kernel version used

Parameter: `kernelParameters`

Type: `string`

Description: Kernel parameters passed to the kernel at boot time

Parameter: `kernelOutputConsole`

Type: `string`

Description: Kernel output console used at boot time

Parameter: `modules`

Type: list of `KernelModule`

Description: Manage kernel modules loaded in this image

Parameter: `versionConfigFiles`

Type: `boolean`

Description: Keep old versions of all config files for all nodes in this category

Parameter: `bootLoader`

Type: `enum`

Description: Boot loader

Parameter: `bootLoaderProtocol`

Type: `enum`

Description: Boot loader protocol for retrieving initrd and vmlinuz

Parameter: `bootLoaderFile`

Type: `string`

Description: Alternative boot loader file

Parameter: `fips`

Type: `enum`

Description: Federal Information Processing Standard Security Requirements

Parameter: `timeZoneSettings`

Type: `TimeZoneSettings` or `None`

Description: Time zone

5.2.47 `CephMDSRole: Role`

parent: `Role`

Parameter: `mdsBeaconInterval`

Type: `float`

Description: The frequency (in seconds) of beacon messages sent to the monitor.

Parameter: `mdsBeaconGrace`

Type: `float`

Description: The interval without beacons before Ceph declares an MDS laggy (and possibly replace it).

Parameter: `mdsTickInterval`

Type: `float`

Description: How frequently the MDS performs internal periodic tasks.

Parameter: `extraConfig`

Type: `list of strings`

Description: Extra config parameters

5.2.48 CephMGRRole: Role

parent: Role

Parameter: modulePath

Type: string

Description: Path to load modules from

Parameter: dataPath

Type: string

Description: Path to load daemon data (such as keyring)

Parameter: beaconPeriod

Type: integer

Description: How many seconds between mgr beacons to monitors

Parameter: extraConfig

Type: list of strings

Description: Extra config parameters

5.2.49 CephMonitorRole: Role

parent: Role

Parameter: dataPath

Type: string

Description: Path to the Monitor data

Parameter: extraConfig

Type: list of strings

Description: Extra config parameters

5.2.50 CephOSDBlackStoreConfig: CephOSDConfig

parent: CephOSDConfig

Parameter: osdDevice

Type: string

Description: Device to store OSD data

Parameter: osdWalDevice

Type: string

Description: Optional device to store write-ahead-log

Parameter: osdDbDevice

Type: string

Description: Optional device to store internal metadata

Parameter: extra1

Type: string

Description: Just in case

5.2.51 CephOSDConfig: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: extraConfig

Type: list of strings

Description: Extra config parameters

5.2.52 CephOSDFileStoreConfig: CephOSDConfig

parent: CephOSDConfig

Parameter: dataPath

Type: string

Description: Path to the OSD data

Parameter: osdDevice

Type: string

Description: Device for storing OSD data

Parameter: journalDevice

Type: string

Description: Device for storing journal data

Parameter: journalOnOSDPartition

Type: boolean

Description: Store the journal on a partition of the OSD device

Parameter: journalSize

Type: unsigned integer

Description: Journal size in MiB

5.2.53 CephOSDPool: Entity

parent: Entity

Parameter: id

Type: unsigned integer

Description: Id

Parameter: name

Type: string

Description: Name

Parameter: size

Type: unsigned integer

Description: Number of replicas

Parameter: `pgp_num`

Type: unsigned integer

Description: Number of Placement Groups for Placement

Parameter: `pg_num`

Type: unsigned integer

Description: Number of Placement Groups

Parameter: `pg_autoscale_mode`

Type: enum

Description: Placement groups auto management mode

Parameter: `crush_ruleset`

Type: unsigned integer

Description: CRUSH Map Ruleset

Parameter: `application`

Type: string

Description: Associated application (typically one of rgw,rbd,cephfs)

Parameter: `aud`

Type: unsigned integer

Description: *none*

Parameter: `min_size`

Type: unsigned integer

Description: *none*

Parameter: `crash_replay_interval`

Type: unsigned integer

Description: *none*

Parameter: `hit_set_type`

Type: string

Description: *none*

Parameter: `hashpspool`

Type: unsigned integer

Description: *none*

Parameter: `hit_set_count`

Type: unsigned integer

Description: *none*

Parameter: `hit_set_period`

Type: unsigned integer

Description: *none*

Parameter: hit_set_fpp

Type: float

Description: *none*

Parameter: cache_target_dirty_ratio

Type: float

Description: *none*

Parameter: cache_target_full_ratio

Type: float

Description: *none*

Parameter: target_max_bytes

Type: unsigned integer

Description: *none*

Parameter: target_max_objects

Type: unsigned integer

Description: *none*

Parameter: cache_min_flush_age

Type: unsigned integer

Description: *none*

Parameter: cache_min_evict_age

Type: unsigned integer

Description: *none*

Parameter: extraField1

Type: string

Description: *none*

Parameter: extraField2

Type: integer

Description: *none*

Parameter: extraField3

Type: unsigned integer

Description: *none*

Parameter: extraField4

Type: float

Description: *none*

Parameter: `extraField5`

Type: list of strings

Description: *none*

Parameter: `extraField6`

Type: list of unsigned numbers

Description: *none*

5.2.54 `CephOSDRole: Role`

parent: `Role`

Parameter: `osdconfigs`

Type: list of `CephOSDConfig`

Description: OSD configurations

Parameter: `extraConfig`

Type: list of strings

Description: *none*

5.2.55 `CephState: Entity`

parent: `Entity`

Parameter: `version`

Type: unsigned integer

Description: *none*

Parameter: `cephNodeKeys`

Type: list of unsigned numbers

Description: *none*

Parameter: `cephNodeValues`

Type: list of signed numbers

Description: *none*

Parameter: `OSDMapIds`

Type: list of unsigned numbers

Description: *none*

Parameter: `OSDMapNodes`

Type: list of unsigned numbers

Description: *none*

Parameter: `OSDMapConfigs`

Type: list of unsigned numbers

Description: *none*

Parameter: `OSDMapConfigNames`

Type: list of strings

Description: *none*

Parameter: `OSDMapStatuses`

Type: list of unsigned numbers

Description: to mark status (e.g. `NEED_DELETE`) using numeric constants

Parameter: `OSDMapDevices`

Type: list of strings

Description: in case we need to keep track of changing device names

Parameter: `extraField1`

Type: string

Description: *none*

Parameter: `extraField2`

Type: string

Description: *none*

Parameter: `extraField3`

Type: string

Description: *none*

Parameter: `extraField4`

Type: string

Description: *none*

Parameter: `extraField5`

Type: string

Description: *none*

Parameter: `extraList1`

Type: list of strings

Description: *none*

Parameter: `extraList2`

Type: list of strings

Description: *none*

Parameter: `extraList3`

Type: list of unsigned numbers

Description: *none*

Parameter: `extraList4`

Type: list of unsigned numbers

Description: *none*

Parameter: `extraList5`

Type: list of unsigned numbers

Description: *none*

5.2.56 Ceph: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: fsid

Type: string

Description: Ceph ID

Parameter: configFilePath

Type: string

Description: Path to the Ceph config file

Parameter: adminKeyringFilePath

Type: string

Description: Path to the Ceph admin keyring file

Parameter: monitorKeyringFilePath

Type: string

Description: Path to the Ceph monitor keyring file

Parameter: adminKey

Type: string

Description: Ceph client admin key

Parameter: monitorKey

Type: string

Description: Ceph monitor key

Parameter: publicNetworks

Type: list of references to Network

Description: Public networks

Parameter: clusterNetworks

Type: list of references to Network

Description: Cluster networks

Parameter: creationTime

Type: timestamp

Description: Date on which the Ceph was defined

Parameter: setupState

Type: enum

Description: Flag to keep track of the installation state

Parameter: `version`

Type: `string`

Description: Ceph version of the cluster

Parameter: `monmap`

Type: `string`

Description: *none*

Parameter: `bootstrapped`

Type: `boolean`

Description: Bootstrapped

Parameter: `monitorPortV1`

Type: `unsigned integer`

Description: Monitor daemon port

Parameter: `monitorPortV2`

Type: `unsigned integer`

Description: Monitor daemon port (msgr2)

Parameter: `filestoreXattrUseOmap`

Type: `boolean`

Description: filestore xattr use omap

Parameter: `monAllowPoolDelete`

Type: `boolean`

Description: mon allow pool delete

Parameter: `monOsdFullRatio`

Type: `float`

Description: mon osd full ratio

Parameter: `monOsdNearfullRatio`

Type: `float`

Description: mon osd nearfull ratio

Parameter: `monMaxOsd`

Type: `unsigned integer`

Description: mon max osd

Parameter: `osdPoolDefaultSize`

Type: `unsigned integer`

Description: osd pool default size

Parameter: `osdPoolDefaultMinSize`

Type: unsigned integer

Description: osd pool default min size

Parameter: `osdPoolDefaultPgNum`

Type: unsigned integer

Description: osd pool default pg num

Parameter: `osdPoolDefaultPgpNum`

Type: unsigned integer

Description: osd pool default pgp num

Parameter: `authClusterCephx`

Type: boolean

Description: auth cluster required cephx

Parameter: `authServiceCephx`

Type: boolean

Description: auth service required cephx

Parameter: `authClientCephx`

Type: boolean

Description: auth client required cephx

Parameter: `extraConfig`

Type: list of strings

Description: Extra config parameters

Parameter: `autoAdjustCrushMap`

Type: boolean

Description: Automatically Adjust CRUSH Map

Parameter: `rbdCache`

Type: boolean

Description: Enable caching for RADOS Block Device (RBD).

Parameter: `rbdCacheSize`

Type: unsigned integer

Description: The RBD cache size in bytes.

Parameter: `rbdCacheMaxDirty`

Type: unsigned integer

Description: The dirty limit in bytes at which the cache triggers write-back. If 0, uses write-through caching. Constraint: Must be less than rbd cache size.

Parameter: `rbdCacheTargetDirty`

Type: unsigned integer

Description: The dirty target before the cache begins writing data to the data storage. Does not block writes to the cache. Constraint: Must be less than rbd cache max dirty.

Parameter: `rbdCacheMaxDirtyAge`

Type: `float`

Description: The number of seconds dirty data is in the cache before writeback starts.

Parameter: `rbdCacheWritethroughUntilFlush`

Type: `boolean`

Description: Start out in write-through mode, and switch to write-back after the first flush request is received.

Parameter: `rbdReadaheadTriggerRequests`

Type: `integer`

Description: Number of sequential read requests necessary to trigger read-ahead.

Parameter: `rbdReadaheadMaxBytes`

Type: `unsigned integer`

Description: Maximum size of a read-ahead request. If zero, read-ahead is disabled.

Parameter: `rbdReadaheadDisableAfterBytes`

Type: `unsigned integer`

Description: After this many bytes have been read from an RBD image, read-ahead is disabled for that image until it is closed. If zero, read-ahead stays enabled.

5.2.57 `CertificateInfo`: Entity

parent: `Entity`

Parameter: `certificate`

Type: `Certificate`

Description: `Certificate`

Parameter: `private_key`

Type: `string`

Description: Optional private key field.

5.2.58 `CertificateRequest`: Entity

parent: `Entity`

Parameter: `CSR`

Type: `string`

Description: *none*

Parameter: `sessionId`

Type: `unsigned integer`

Description: Session id

Parameter: `clientType`

Type: unsigned integer

Description: Client type

Parameter: requestId

Type: unsigned integer

Description: Request id

Parameter: country

Type: string

Description: Country

Parameter: state

Type: string

Description: State

Parameter: locality

Type: string

Description: Locality

Parameter: organization

Type: string

Description: Organization

Parameter: organizationalUnit

Type: string

Description: Organizational unit

Parameter: commonName

Type: string

Description: Common name

Parameter: subjectAlternativeNames

Type: list of strings

Description: Subject alternative names

Parameter: allowAutosign

Type: boolean

Description: Allow autosign

Parameter: hasEdgeSecret

Type: boolean

Description: Has an edge secret

5.2.59 CertificateSubjectName: Entity

parent: Entity

Parameter: country

Type: string

Description: Country

Parameter: state

Type: string

Description: State

Parameter: locality

Type: string

Description: Locality

Parameter: organization

Type: string

Description: Organization

Parameter: organizationalUnit

Type: string

Description: Organizational unit

Parameter: commonName

Type: string

Description: CommonName

Parameter: profile

Type: string

Description: Profile

Parameter: syslogin

Type: string

Description: Syslogin

Parameter: component

Type: string

Description: Component

Parameter: days

Type: integer

Description: Days

Parameter: ca

Type: boolean

Description: CA

Parameter: subjectAlternativeNames

Type: list of strings

Description: Alternative names

5.2.60 Certificate: Entity

parent: Entity

Parameter: PEM

Type: string

Description: *none*

Parameter: revoked

Type: boolean

Description: Certificate has been revoked and can not be used

Parameter: serialNumber

Type: integer

Description: Serial number

Parameter: remaining

Type: integer

Description: Remaining time until certificate expires

Parameter: startTime

Type: timestamp

Description: Date when certificate is valid

Parameter: expireTime

Type: timestamp

Description: Date when certificate expires

Parameter: CA

Type: boolean

Description: A CA certificate can be used sign other certificates

Parameter: hasEdgeSecret

Type: boolean

Description: Has an edge secret

Parameter: profile

Type: string

Description: Profile

Parameter: sysLogin

Type: string

Description: System log in

Parameter: component

Type: string

Description: Component

Parameter: `subjectName`

Type: `string`

Description: Subject

Parameter: `issuerName`

Type: `string`

Description: Issuer

Parameter: `subjectAlternativeNames`

Type: list of strings

Description: Alternative names

Parameter: `country`

Type: `string`

Description: Country

Parameter: `state`

Type: `string`

Description: State

Parameter: `locality`

Type: `string`

Description: Locality

Parameter: `organization`

Type: `string`

Description: Organization

Parameter: `organizationalUnit`

Type: `string`

Description: Organizational unit

Parameter: `commonName`

Type: `string`

Description: Name

5.2.61 `ChargeBackRequest:Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Name

Parameter: `groupByUser`

Type: `boolean`

Description: Group by user

Parameter: `groupByGroup`

Type: boolean

Description: Group by group

Parameter: groupByAccount

Type: boolean

Description: Group by account

Parameter: groupByJobName

Type: boolean

Description: Group by job name

Parameter: groupByJobId

Type: boolean

Description: Group by job ID

Parameter: groupByParentId

Type: boolean

Description: Group by parent ID

Parameter: users

Type: list of strings

Description: Users

Parameter: groups

Type: list of strings

Description: Users

Parameter: accounts

Type: list of strings

Description: Accounts

Parameter: jobNames

Type: list of strings

Description: Job names

Parameter: jobIds

Type: list of strings

Description: Job IDs

Parameter: parentIds

Type: list of strings

Description: Parent IDs

Parameter: wlmClusters

Type: list of references to WlmCluster

Description: List of wlm clusters which to include, empty for all

Parameter: pricePerCPUSecond

Type: float

Description: Price per CPU second

Parameter: pricePerCPUCoreSecond

Type: float

Description: Price per CPU core second

Parameter: pricePerGPUSecond

Type: float

Description: Price per GPU second

Parameter: pricePerMemoryByteSecond

Type: float

Description: Price per memory byte-second

Parameter: pricePerSlotSecond

Type: float

Description: Price per slot second

Parameter: currency

Type: string

Description: Currency

Parameter: startTime

Type: string

Description: Start time

Parameter: endTime

Type: string

Description: End time

Parameter: utc

Type: boolean

Description: Time in UTC

Parameter: includeRunning

Type: boolean

Description: Include running

Parameter: calculatePrediction

Type: boolean

Description: Calculate prediction

Parameter: preference

Type: unsigned integer

Description: The request with the highest preference be shown by default

Parameter: `notes`

Type: `string`

Description: Administrator notes

5.2.62 Chassis: Device

parent: `Device`

Parameter: `ip`

Type: `IP`

Description: Ip address

Parameter: `network`

Type: reference to `Network` or `None`

Description: Network to which this switch is connected

Parameter: `model`

Type: `string`

Description: Device model name

Parameter: `username`

Type: `string`

Description: Chassis username

Parameter: `password`

Type: `string`

Description: Chassis password

Parameter: `members`

Type: list of references to `Device`

Description: List of devices belonging to this chassis

Parameter: `slots`

Type: list of strings

Description: Slot description per device in chassis

Parameter: `layout`

Type: `string`

Description: Layout definition for rackview (Format: [`|-`]`x,y` e.g: `|8,3` or `-2,6`)

5.2.63 CloudDirectorRole: DirectorRole**parent:** DirectorRole**5.2.64 CloudGatewayRole: Role****parent:** Role**5.2.65 CloudJobDescription: Entity****parent:** Entity**Parameter:** name**Type:** string**Description:** Job name**Parameter:** script**Type:** string**Description:** Script path**Parameter:** workloadManagerJobId**Type:** string**Description:** Job identifier according to the workload manager**Parameter:** user**Type:** string**Description:** Owner of a job**Parameter:** sizeOfInputData**Type:** unsigned integer**Description:** Size of job's input data**Parameter:** sizeOfOutputData**Type:** unsigned integer**Description:** Size of job's output data**Parameter:** expectedSizeOfOutputData**Type:** unsigned integer**Description:** Expected size of job's output data**Parameter:** inputFiles**Type:** list of strings**Description:** Input files list**Parameter:** expandedInputFiles**Type:** list of strings**Description:** Internal list of input files after labeled wildcards are resolved**Parameter:** outputFiles**Type:** list of strings

Description: Output files list

Parameter: `doNotDownloadFiles`

Type: list of strings

Description: List of output files to leave in the cloud without downloading

Parameter: `remoteOutputLists`

Type: list of strings

Description: List of remote files which contain job output file names

Parameter: `workloadManager`

Type: string

Description: Workload manager type

Parameter: `workingDirectory`

Type: string

Description: Job's working directory

Parameter: `region`

Type: string

Description: Cloud region

Parameter: `jobQueue`

Type: string

Description: WLM queue where the job runs

Parameter: `storageStrategy`

Type: enum

Description: *none*

Parameter: `storageVolumeId`

Type: string

Description: Storage Volume ID

Parameter: `storageVolumeSize`

Type: unsigned integer

Description: Size of Storage Volume

Parameter: `storageVolumeDevicePath`

Type: string

Description: OS device path

Parameter: `fsxInstanceId`

Type: string

Description: *none*

Parameter: `fsxInstanceUrl`

Type: string

Description: none

Parameter: fsxInstancePathOnDirector

Type: string

Description: none

Parameter: anfVolumeId

Type: string

Description: none

Parameter: anfVolumeUrl

Type: string

Description: none

Parameter: anfVolumePathOnDirector

Type: string

Description: none

Parameter: jobType

Type: enum

Description: Defines the set of operations that will run on job.

Parameter: storageNode

Type: reference to CloudNode

Description: Storage Node

Parameter: excludedStorageNodes

Type: list of references to CloudNode

Description: Job will not run on those nodes

Parameter: stdoutFileNames

Type: list of strings

Description: Standard output stream filenames list

Parameter: stderrFileNames

Type: list of strings

Description: Standard error stream filenames list

Parameter: uploadTime

Type: float

Description: Time spent on input data transfer and job pre-run preparations

Parameter: downloadTime

Type: float

Description: Time spent on jobs job results transfer and post-run activities

Parameter: maxUploadTime

Type: float

Description: *none*

Parameter: maxDownloadTime

Type: float

Description: *none*

Parameter: jobState

Type: enum

Description: Current state of the job

Parameter: jobStatusMsg

Type: string

Description: Job status

Parameter: jobStatusTimestamp

Type: timestamp

Description: Time when the job status was last changed

Parameter: computeNodes

Type: list of references to Node

Description: List of compute nodes the job was running on

Parameter: numThreads

Type: unsigned integer

Description: *none*

Parameter: submissionTimestamp

Type: timestamp

Description: Time when the job was submitted

Parameter: endTimestamp

Type: timestamp

Description: Time when the job finished execution

Parameter: extraOptions

Type: list of strings

Description: *none*

5.2.66 CloudJobSubmissionStatus: Entity

parent: Entity

Parameter: availableExpectedTransferTimes

Type: boolean

Description: *none*

Parameter: expectedInputDataTransferTimeInSeconds

Type: unsigned integer

Description: *none*

Parameter: `jobName`

Type: string

Description: *none*

Parameter: `errMsg`

Type: string

Description: *none*

Parameter: `extraOptions`

Type: list of strings

Description: *none*

5.2.67 `CloudNode: ComputeNode`

parent: `ComputeNode`

Parameter: `cloudSettings`

Type: `CloudSettings`

Description: Submode containing all cloud node settings

5.2.68 `CloudProvider: Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: Name

Parameter: `tags`

Type: list of strings

Description: List of tags that will be assigned to all resources created by BCM under this cloud provider

5.2.69 `CloudRegion: Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: The name of the cloud region.

Parameter: `provider`

Type: reference to `CloudProvider`

Description: Cloud provider

Parameter: `timeZoneSettings`

Type: `TimeZoneSettings` or `None`

Description: Time zone

5.2.70 CloudSettings: Entity

parent: Entity

Parameter: provider

Type: reference to CloudProvider

Description: Cloud provider

Parameter: isStorageTemplate

Type: boolean

Description: none

Parameter: isStorageNode

Type: boolean

Description: none

Parameter: tags

Type: list of strings

Description: List of tags that will be assigned to cloud instance (for supported providers)

5.2.71 CloudStorageActionData: Entity

parent: Entity

Parameter: jobDescription

Type: reference to CloudJobDescription

Description: none

Parameter: typeString

Type: string

Description: none

Parameter: index

Type: unsigned integer

Description: none

Parameter: totalActions

Type: unsigned integer

Description: none

Parameter: status

Type: enum

Description: none

Parameter: errorMessage

Type: string

Description: none

Parameter: isReverse

Type: boolean

Description: *none*

Parameter: `timeoutSecs`

Type: unsigned integer

Description: *none*

Parameter: `startTime`

Type: timestamp

Description: *none*

Parameter: `retries`

Type: unsigned integer

Description: *none*

Parameter: `workloadManager`

Type: string

Description: *none*

Parameter: `workloadManagerJobId`

Type: string

Description: *none*

Parameter: `jobName`

Type: string

Description: *none*

Parameter: `executionNode`

Type: reference to Node

Description: *none*

Parameter: `extraOptions`

Type: list of strings

Description: *none*

5.2.72 CloudType: Entity

parent: Entity

Parameter: `name`

Type: string

Description: The name of the VM type.

Parameter: `provider`

Type: reference to CloudProvider

Description: Cloud provider

Parameter: `cpu`

Type: string

Description: The amount of CPU cores.

Parameter: `gpu`

Type: `string`

Description: The amount of GPUs.

Parameter: `memory`

Type: `string`

Description: The amount of operating system memory.

Parameter: `disks`

Type: `string`

Description: AWS: The amount of disks coming with the type. Azure: the maximum amount of data disk which can be attached to the VMs of this type.

Parameter: `description`

Type: `string`

Description: The description.

5.2.73 `ClusterSetup`: Entity

parent: Entity

Parameter: `refPartitionUniqueKey`

Type: `unsigned integer`

Description: Partition

Parameter: `CMID`

Type: `unsigned integer`

Description: CMID

Parameter: `databaseVersion`

Type: `unsigned integer`

Description: Database version

Parameter: `organization`

Type: `string`

Description: Organization

Parameter: `powerOnDelay`

Type: `float`

Description: Delay in seconds between powering on nodes

Parameter: `powerOffDelay`

Type: `float`

Description: Delay in seconds between powering off nodes

5.2.74 CMDaemonBackgroundTask: Entity**parent:** Entity**Parameter:** name**Type:** string**Description:** Name**Parameter:** subjects**Type:** list of unsigned numbers**Description:** Subjects**Parameter:** updates**Type:** list of strings**Description:** Updates**Parameter:** exitCode**Type:** integer**Description:** Exit code**Parameter:** runningStatus**Type:** enum**Description:** Running status**Parameter:** startTime**Type:** timestamp**Description:** Start time**Parameter:** endTime**Type:** timestamp**Description:** End time**Parameter:** isCancelable**Type:** boolean**Description:** Cancelable**Parameter:** parentTask**Type:** unsigned integer**Description:** Parent task**Parameter:** subtasks**Type:** list of unsigned numbers**Description:** Sub tasks**Parameter:** nodeKey**Type:** unsigned integer**Description:** Node key

5.2.75 CMDaemonFailoverGroupStatus: Entity

parent: Entity

Parameter: failoverStage

Type: integer

Description: Failover stage

Parameter: activeNodeKey

Type: unsigned integer

Description: Active node key

Parameter: activeUpTime

Type: timestamp

Description: Active up time

Parameter: activeDownTime

Type: timestamp

Description: Active down time

Parameter: activeUpCount

Type: unsigned integer

Description: Active up count

Parameter: failoverThreadRunning

Type: boolean

Description: Failover thread running

Parameter: infoMessage

Type: string

Description: Information messages gather during the last failover

Parameter: errorMessage

Type: string

Description: Error messages gather during the last failover

Parameter: activeGraciousShutdown

Type: boolean

Description: True if the previous active head reported a graceful shutdown

5.2.76 CMDaemonFailoverGroup: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: nodes

Type: list of references to ComputeNode

Description: List of nodes belonging to this group

Parameter: `alsoTakeOverAfterGraciousShutdown`

Type: boolean

Description: Also perform automatic failover if the active group member was gracefully shut down

Parameter: `disableAutomaticFailover`

Type: boolean

Description: When automatic failover is disabled the no node in the group will not take over if the active node is dead

Parameter: `warntime`

Type: unsigned integer

Description: How quickly to issue a 'late' warning

Parameter: `deadtime`

Type: unsigned integer

Description: How quickly to decide that a node in a group is dead

Parameter: `mountScript`

Type: string

Description: Script that mounts the shared storage device when a node becomes the active head node

Parameter: `unmountScript`

Type: string

Description: Script that unmounts the shared storage device when a node stoppes being the active head node

Parameter: `preFailoverScript`

Type: string

Description: Prefailover script will be run on all nodes before failover has begun

Parameter: `postFailoverScript`

Type: string

Description: Postfailover script will be run on all nodes after failover has completed

Parameter: `ipTakeOverMethod`

Type: enum

Description: The manner in which shared IP gets transferred

Parameter: `ipTakeOverScript`

Type: string

Description: IP take over script

5.2.77 `CMDaemonFailoverPeer`: Entity

parent: Entity

Parameter: `key`

Type: unsigned integer

Description: Node key

Parameter: status

Type: list of strings

Description: Status

Parameter: failCount

Type: list of unsigned numbers

Description: Number of sequential times failure was detected

5.2.78 CMDaemonFailoverStatus: Entity

parent: Entity

Parameter: myKey

Type: unsigned integer

Description: Unique key of head node to which handled request

Parameter: masterKey

Type: unsigned integer

Description: Unique key of active head node

Parameter: masterTime

Type: unsigned integer

Description: Master time (not used)

Parameter: failoverId

Type: unsigned integer

Description: Head node with the highest failover ID will be active

Parameter: error

Type: boolean

Description: Head node is in error state

Parameter: peers

Type: list of CMDaemonFailoverPeer

Description: Peer status per head node in the failover group

5.2.79 CMDaemonFailover: Entity

parent: Entity

Parameter: secondaryHeadNode

Type: reference to HeadNode or None

Description: Secondary/failover head node

Parameter: keepalive

Type: unsigned integer

Description: Interval between pings

Parameter: `warntime`

Type: unsigned integer

Description: How quickly to issue a 'late' warning

Parameter: `deadtime`

Type: unsigned integer

Description: How quickly to decide that a node in a cluster is dead

Parameter: `initdead`

Type: unsigned integer

Description: Time between starting failover and declaring a cluster node dead

Parameter: `quorumTime`

Type: unsigned integer

Description: Time before deciding quorum ended in failure

Parameter: `mountScript`

Type: string

Description: Script that mounts the shared storage device when a node becomes the active headnode

Parameter: `unmountScript`

Type: string

Description: Script that unmounts the shared storage device when a node stoppes being the active headnode

Parameter: `failoverNetwork`

Type: reference to Network or None

Description: Network for failover ping

Parameter: `disableAutomaticFailover`

Type: boolean

Description: When automatic failover is disabled the passive headnode will not take over if it detects the active headnode is dead

Parameter: `preFailoverScript`

Type: string

Description: Prefailover script will be run on both headnodes before failover has begun

Parameter: `postFailoverScript`

Type: string

Description: Postfailover script will be run on both headnodes after failover has completed

Parameter: `ipTakeOverMethod`

Type: enum

Description: The manner in which shared IP gets transferred

Parameter: ipTakeOverScript

Type: string

Description: IP take over script

5.2.80 CMDaemonStatus: Entity

parent: Entity

Parameter: version

Type: string

Description: CMDaemon version

Parameter: state

Type: string

Description: CMDaemon state

Parameter: myTime

Type: timestamp

Description: System time

Parameter: startTime

Type: timestamp

Description: CMDaemon start time

Parameter: uptime

Type: unsigned integer

Description: System uptime

Parameter: utime

Type: float

Description: User time spend by CMDaemon

Parameter: stime

Type: float

Description: System time spend by CMDaemon

Parameter: memused

Type: unsigned integer

Description: Memory used by CMDaemon

Parameter: sessionCount

Type: unsigned integer

Description: Total Number of cmsh/Bright View/python/node sessions

Parameter: activeSessionCount

Type: unsigned integer

Description: Number of currently active sessions

Parameter: `httpdNumWorkers`

Type: unsigned integer

Description: Number of threads handing http requests

Parameter: `httpdNumFreeWorkers`

Type: unsigned integer

Description: Number of threads free to handle http requests

Parameter: `httpdConnectionCounter`

Type: unsigned integer

Description: Total number of http connections handled by CMDaemon

Parameter: `httpdRequestCounter`

Type: unsigned integer

Description: Total number of http request handled by CMDaemon

Parameter: `httpdBytesRead`

Type: unsigned integer

Description: Bytes read from http request

Parameter: `httpdBytesWritten`

Type: unsigned integer

Description: Bytes written in response to http requests

5.2.81 CMJobConfig: Entity

parent: Entity

Parameter: `name`

Type: string

Description: CMJob config name

Parameter: `provider`

Type: reference to CloudProvider

Description: Cloud provider

Parameter: `storageNodePolicies`

Type: list of StorageNodePolicy

Description: Storage node policies

Parameter: `activeStorageNodePolicy`

Type: element of storageNodePolicies or None

Description: This policy will be used to start new storage nodes

Parameter: `extraOptions`

Type: list of strings

Description: Extra options

5.2.82 CMJobIntermediateStorage: Entity

parent: Entity

5.2.83 CMService: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: tokens

Type: list of strings

Description: Tokens belonging to this service

5.2.84 ComputeNode: Node

parent: Node

Parameter: installMode

Type: string

Description: Installmode to be used by default, if empty use category installMode

Parameter: nextBootInstallMode

Type: string

Description: Installmode to be used during the next boot, will be cleared during boot

Parameter: blockDevicesClearedOnNextBoot

Type: list of strings

Description: List of block devices that will be cleared during the next boot

Parameter: initialize

Type: string

Description: Node specific initialize script

Parameter: finalize

Type: string

Description: Node specific finalize script

Parameter: raidconf

Type: string

Description: Node specific Hardware RAID configuration

Parameter: category

Type: reference to Category

Description: Category to which this node belongs

Parameter: disksetup

Type: string

Description: Node specific disk setup

Parameter: `excludeListFull`

Type: string

Description: Exclude list for full install

Parameter: `excludeListSync`

Type: string

Description: Exclude list for sync install

Parameter: `excludeListUpdate`

Type: string

Description: Exclude list for update

Parameter: `excludeListGrab`

Type: string

Description: Exclude list for grabbing to an existing image

Parameter: `excludeListGrabnew`

Type: string

Description: Exclude list for grabbing to a new image

Parameter: `nodeInstallerDisk`

Type: boolean

Description: The node has it's own node installer disk

Parameter: `installBootRecord`

Type: boolean

Description: Install boot record on local disk

Parameter: `managementNetwork`

Type: reference to Network or None

Description: Determines what network should be used for management traffic. If not set, category or partition setting is used.

Parameter: `dataNode`

Type: boolean

Description: If enabled the node will never do a FULL install without explicit user confirmation

Parameter: `allowNetworkingRestart`

Type: boolean

Description: Allow node to update ifcfg files and restart networking

Parameter: `softwareImageProxy`

Type: SoftwareImageProxy or None

Description: Software image used by node

Parameter: `fspartAssociations`

Type: list of `FSPartAssociation`

Description: *none*

Parameter: `kernelVersion`

Type: string

Description: Kernel version used

Parameter: `kernelParameters`

Type: string

Description: Kernel parameters passed to the kernel at boot time

Parameter: `kernelOutputConsole`

Type: string

Description: Kernel output console used at boot time

Parameter: `modules`

Type: list of `KernelModule`

Description: Manage kernel modules loaded in this node

Parameter: `bootLoader`

Type: enum

Description: Boot loader

Parameter: `bootLoaderProtocol`

Type: enum

Description: Boot loader protocol for retrieving `initrd` and `vmlinuz`

Parameter: `bootLoaderFile`

Type: string

Description: Alternative boot loader file

Parameter: `fips`

Type: enum

Description: Federal Information Processing Standard Security Requirements

Parameter: `templateNode`

Type: boolean

Description: Indicate this is a template node and should not be powered on and booted

Parameter: `fromTemplateNode`

Type: unsigned integer

Description: Indicate from which template node this node was copied

5.2.85 ConfigFileVersion: Entity**parent:** Entity**Parameter:** nodeKey**Type:** unsigned integer**Description:** Node key**Parameter:** filename**Type:** string**Description:** File name**Parameter:** content**Type:** string**Description:** Content of the file**Parameter:** creationTime**Type:** timestamp**Description:** Creation time**5.2.86** ConfigurationOverlay: Entity**parent:** Entity**Parameter:** name**Type:** string**Description:** Name**Parameter:** allHeadNodes**Type:** boolean**Description:** All head nodes**Parameter:** nodes**Type:** list of references to Node**Description:** List of nodes belonging to this group**Parameter:** categories**Type:** list of references to Category**Description:** List of categories belonging to this group**Parameter:** customizationFiles**Type:** list of CustomizationFile**Description:** Config file customizations**Parameter:** roles**Type:** list of Role**Description:** Assign the roles**Parameter:** priority**Type:** integer

Description: Priority of the roles, node roles have a 750 priority, and category roles 250, set to -1 disable the overlay

5.2.87 ConnectivityCheckerSubSystemInfo: SubSystemInfo

parent: SubSystemInfo

Parameter: stopped

Type: unsigned integer

Description: Stopped

Parameter: updateCallback

Type: unsigned integer

Description: Update callback defined

Parameter: changeCallback

Type: unsigned integer

Description: Change callback defined

Parameter: ttl

Type: unsigned integer

Description: ttl

Parameter: idOffset

Type: unsigned integer

Description: Ping ID offset

Parameter: interval

Type: unsigned integer

Description: Interval

Parameter: timeout

Type: unsigned integer

Description: Timeout

Parameter: sequence

Type: unsigned integer

Description: Sequence ID

Parameter: activeSequences

Type: unsigned integer

Description: Active ping sequences still being waited for

Parameter: activeNodeSequences

Type: unsigned integer

Description: Number of nodes in active ping sequences still being waited for

Parameter: nodes

Type: unsigned integer

Description: Nodes being pinged

Parameter: `nodeSequences`

Type: unsigned integer

Description: Number of pings nodes are waiting for

Parameter: `updates`

Type: unsigned integer

Description: Total number of handled updates

Parameter: `changes`

Type: unsigned integer

Description: Total number of handled changes

5.2.88 Consolidator: Entity

parent: Entity

Parameter: `name`

Type: string

Description: Name

Parameter: `maxAge`

Type: float

Description: Maximal age of historic data, 0 for infinite

Parameter: `maxSamples`

Type: unsigned integer

Description: Maximal samples of historic data, 0 for infinite

Parameter: `interval`

Type: float

Description: Sampling interval

Parameter: `offset`

Type: float

Description: Time offset for sampling interval

Parameter: `kind`

Type: enum

Description: Kind of consolidation to be done

5.2.89 ContainerInfo: Entity

parent: Entity

Parameter: `name`

Type: string

Description: The name of the container

Parameter: containerId

Type: string

Description: The id

Parameter: image

Type: string

Description: The name of the image

Parameter: imageId

Type: string

Description: The sha id of the image

Parameter: state

Type: string

Description: The state of the container

Parameter: startTime

Type: timestamp

Description: The time when the container started

Parameter: lastTerminationState

Type: string

Description: The last state when the container terminated

Parameter: reason

Type: string

Description: The reason for the termination

Parameter: lastExitCode

Type: integer

Description: The exit code of the container

Parameter: previousStartTime

Type: timestamp

Description: The previous start time

Parameter: previousFinishTime

Type: timestamp

Description: The previous finish time

Parameter: ready

Type: boolean

Description: Whether the container is ready or not

Parameter: restartCount

Type: integer

Description: The number of restarts of the container

Parameter: `environmentVariables`

Type: list of strings

Description: The environment variables passed to the container

5.2.90 CustomizationEntry: Entity

parent: Entity

Parameter: `key`

Type: string

Description: Name of the key

Parameter: `value`

Type: string

Description: Value for the key

Parameter: `enabled`

Type: boolean

Description: *none*

Parameter: `action`

Type: enum

Description: Determines how entres are added

Parameter: `formatting`

Type: string

Description: *none*

Parameter: `extraField`

Type: boolean

Description: Reserved for future use

Parameter: `separator`

Type: string

Description: *none*

5.2.91 CustomizationFile: Entity

parent: Entity

Parameter: `name`

Type: string

Description: *none*

Parameter: `entries`

Type: list of CustomizationEntry

Description: Config file customization entries

Parameter: label

Type: string

Description: none

Parameter: type

Type: enum

Description: Determines file type

Parameter: managedsection

Type: enum

Description: Determines how cmdaemon should customize the file

Parameter: formatting

Type: string

Description: none

Parameter: enabled

Type: boolean

Description: none

5.2.92 DeviceStatus: Entity

parent: Entity

Parameter: refDeviceUniqueKey

Type: unsigned integer

Description: Device

Parameter: status

Type: enum

Description: Status determined by ping and report

Parameter: reportedStatus

Type: enum

Description: Reported status

Parameter: reportedStatusTimestamp

Type: unsigned integer

Description: Reported status timestamp in steady clock epoch milliseconds

Parameter: terminated

Type: boolean

Description: none

Parameter: closed

Type: boolean

Description: none

Parameter: muted

Type: boolean

Description: *none*

Parameter: burning

Type: boolean

Description: *none*

Parameter: unassigned

Type: boolean

Description: *none*

Parameter: noPingMethod

Type: boolean

Description: *none*

Parameter: nullIdentifier

Type: boolean

Description: *none*

Parameter: additionalCost

Type: boolean

Description: *none*

Parameter: restartRequired

Type: boolean

Description: *none*

Parameter: healthCheckFailed

Type: boolean

Description: *none*

Parameter: healthCheckUnknown

Type: boolean

Description: *none*

Parameter: provisioningFailed

Type: boolean

Description: *none*

Parameter: stateFlapping

Type: boolean

Description: *none*

Parameter: stateFlappingCheckTime

Type: unsigned integer

Description: *none*

Parameter: pingable

Type: boolean

Description: none

Parameter: sshable

Type: boolean

Description: none

Parameter: infoMessage

Type: string

Description: none

Parameter: userMessage

Type: string

Description: none

Parameter: toolMessage

Type: string

Description: none

Parameter: restartRequiredReasons

Type: list of strings

Description: none

Parameter: gracePeriod

Type: unsigned integer

Description: none

Parameter: powerResetOnUnreachableCount

Type: unsigned integer

Description: none

Parameter: failBeforeDown

Type: unsigned integer

Description: none

Parameter: updateIndex

Type: unsigned integer

Description: none

Parameter: updateDisplay

Type: boolean

Description: none

Parameter: hasClientDaemon

Type: boolean

Description: *none*

Parameter: `allowDataNodeFullInstall`

Type: `boolean`

Description: *none*

5.2.93 Device:Entity

parent: `Entity`

Parameter: `tag`

Type: `string`

Description: Hardware tag

Parameter: `hostname`

Type: `string`

Description: Hostname

Parameter: `mac`

Type: `MAC`

Description: MAC address

Parameter: `defaultGateway`

Type: `IP`

Description: Default gateway for the device

Parameter: `creationTime`

Type: `timestamp`

Description: Date on which node was defined

Parameter: `partition`

Type: `reference to Partition`

Description: Partition to which this device belongs

Parameter: `networkSwitches`

Type: `list of SwitchPort`

Description: Switch ports

Parameter: `powerDistributionUnits`

Type: `list of PDUPort`

Description: List of outlets on powerdistributionunits

Parameter: `rack`

Type: `RackPosition or None`

Description: Name of the rack in which the device resides

Parameter: `indexInsideContainer`

Type: `unsigned integer`

Description: Index inside container object (used for drawing twins/chassis inside rackview)

Parameter: `powerControl`

Type: string

Description: Specifies which type of power control feature is being used (values: none, apc, custom, cloud, ipmi0, ilo0, drac0, rf0 or cimc0)

Parameter: `customPowerScript`

Type: string

Description: Script that will be used to perform power on/off/reset/status operations

Parameter: `customPowerScriptArgument`

Type: string

Description: Argument for the custom power script

Parameter: `customPingScript`

Type: string

Description: Script that will be used to ping a device

Parameter: `customPingScriptArgument`

Type: string

Description: Argument for the custom ping script

Parameter: `notes`

Type: string

Description: Administrator notes

Parameter: `userdefined1`

Type: string

Description: A free text field passed to custom scripts

Parameter: `userdefined2`

Type: string

Description: A free text field passed to custom scripts

Parameter: `userDefinedResources`

Type: list of strings

Description: User defined resources used to filter monitoring data producers

Parameter: `supportsGNSS`

Type: boolean

Description: Supports GNSS location

5.2.94 DIGITSRole: Role

parent: Role

Parameter: `version`

Type: string

Description: DIGITS version

Parameter: port

Type: unsigned integer

Description: DIGITS port

Parameter: jobsDir

Type: string

Description: Location where job files are stored. Defined in DIGITS_JOBS_DIR

Parameter: logfileFilename

Type: string

Description: File for saving log messages. Defined in DIGITS_LOGFILE_FILENAME

Parameter: logfileLevel

Type: enum

Description: Minimum log message level to be saved (DEBUG/INFO/WARNING/ERROR/CRITICAL). Defined in DIGITS_LOGFILE_LEVEL

Parameter: serverName

Type: string

Description: The name of the server (accessible in the UI under 'Info'). Default is the system host-name. Defined in DIGITS_SERVER_NAME

Parameter: modelStoreUrl

Type: string

Description: A list of URL's, separated by comma. Default is the official NVIDIA store. Defined in DIGITS_MODEL_STORE_URL

Parameter: urlPrefix

Type: string

Description: A path to prepend before every URL. Sets the home-page to be at 'http://localhost/custom-prefix' instead of 'http://localhost/'. Defined in DIGITS_URL_PREFIX

Parameter: caffeRoot

Type: string

Description: Path to your local Caffe build. Should contain build/tools/caffe and python/caffe/. Defined in CAFFE_ROOT

Parameter: torchRoot

Type: string

Description: Path to your local Torch build. Should contain install/bin/th. Defined in TORCH_ROOT

Parameter: tensorflowRoot

Type: string

Description: Path to your local TensorFlow build. Defined in TENSORFLOW_ROOT

5.2.95 DirectorRole: Role

parent: Role

Parameter: syncFSParts

Type: enum

Description: Sync FSParts mode

Parameter: fsparts

Type: list of references to FSPart

Description: FSParts

Parameter: disableAutomaticExports

Type: boolean

Description: Disable creation of automatic filesystem exports

Parameter: createHomeDirectories

Type: enum

Description: Create home directories for ldap users

Parameter: whitelistUsers

Type: list of strings

Description: Whitelist users

Parameter: whitelistGroups

Type: list of strings

Description: Whitelist groups

5.2.96 DiskAssertion: Entity

parent: Entity

Parameter: name

Type: string

Description: Name.

Parameter: script

Type: string

Description: Assertion script.

Parameter: args

Type: string

Description: Script arguments.

5.2.97 DiskDevice: Entity

parent: Entity

Parameter: requiredSize

Type: string

Description: Required Size

Parameter: vendor

Type: string

Description: Required Vendor

Parameter: blockDevs

Type: list of strings

Description: Block Devices

Parameter: partitions

Type: list of DiskPartition

Description: Partitions

Parameter: assertions

Type: list of DiskAssertion

Description: Assertions

5.2.98 DiskInfo: Entity

parent: Entity

Parameter: name

Type: string

Description: none

Parameter: model

Type: string

Description: none

Parameter: vendor

Type: string

Description: none

Parameter: size

Type: unsigned integer

Description: none

Parameter: rev

Type: string

Description: none

Parameter: ioScheduler

Type: string

Description: none

5.2.99 DiskPartitionInfo: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: name

Type: string

Description: The partition name

Parameter: majorID

Type: unsigned integer

Description: Major

Parameter: minorID

Type: unsigned integer

Description: Minor

Parameter: blocks

Type: unsigned integer

Description: Blocks

Parameter: cipher

Type: string

Description: Encryption cipher

Parameter: slaves

Type: list of strings

Description: Slaves

Parameter: deviceMapper

Type: string

Description: Device mapper

5.2.100 DiskPartition: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: size

Type: string

Description: Size

Parameter: type

Type: string

Description: Type

Parameter: mountpoint

Type: string

Description: Mount point

Parameter: mountoptions

Type: string

Description: Mount options

Parameter: filesystem

Type: string

Description: Filesystem

5.2.101 DiskRaid: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: size

Type: string

Description: Size

Parameter: level

Type: integer

Description: Level

Parameter: partitions

Type: list of strings

Description: Partitions

Parameter: mountpoint

Type: string

Description: Mount point

Parameter: mountoptions

Type: string

Description: Mount options

Parameter: filesystem

Type: string

Description: Filesystem

Parameter: swap

Type: boolean

Description: Use for swap

5.2.102 DiskSetup: Entity

parent: Entity

Parameter: devices

Type: list of DiskDevice

Description: List of block devices.

Parameter: raids

Type: list of DiskRaid

Description: List of raid devices.

Parameter: volumeGroups

Type: list of DiskVolumeGroup

Description: List of volume groups.

Parameter: diskless

Type: boolean

Description: If set the node will have its root file-system in RAM.

Parameter: maxMemSize

Type: string

Description: Maximum amount (in bytes) of RAM the root file-system can use.

5.2.103 DiskVolumeGroup: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: extentSize

Type: string

Description: Size

Parameter: physicalVolumes

Type: list of strings

Description: Physical volumes

Parameter: logicalVolumes

Type: list of DiskVolume

Description: Logical volumes

5.2.104 DiskVolume: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: size

Type: string

Description: Size

Parameter: mountpoint

Type: string

Description: Mount point

Parameter: mountoptions

Type: string

Description: Mount options

Parameter: filesystem

Type: string

Description: Filesystem

5.2.105 DnsRole: Role

parent: Role

Parameter: nodegroups

Type: list of references to NodeGroup

Description: List of node groups which can boot from this node

Parameter: categories

Type: list of references to Category

Description: List of categories which can boot from this node

Parameter: racks

Type: list of references to Rack

Description: List of racks which can boot from this node

Parameter: allowQuery

Type: list of strings

Description: List of additional free hosts to allow queries from

Parameter: options

Type: list of strings

Description: List of additional key=value pairs to add to the options

Parameter: maxCacheSize

Type: unsigned integer

Description: Maximum cache size

Parameter: cleaningInterval

Type: unsigned integer

Description: Cleaning cache interval

Parameter: `maxCacheTTL`

Type: unsigned integer

Description: Maximal cache TTL

Parameter: `maxNegativeCacheTTL`

Type: unsigned integer

Description: Maximal cache negative response TTL

5.2.106 `DockerHostRole: Role`

parent: `Role`

Parameter: `spool`

Type: string

Description: Root of the Docker runtime

Parameter: `tmpDir`

Type: string

Description: Location used for temporary files (token `$spool` is replaced to path to docker runtime root directory)

Parameter: `enableSelinux`

Type: boolean

Description: Enable selinux support in docker daemon

Parameter: `defaultUlimits`

Type: list of strings

Description: Set the default ulimit options to use for all containers

Parameter: `debug`

Type: boolean

Description: Enable debug mode

Parameter: `logLevel`

Type: string

Description: Set the logging level

Parameter: `bridgeIp`

Type: string

Description: Network bridge IP

Parameter: `bridge`

Type: string

Description: Attach containers to a network bridge

Parameter: `mtu`

Type: unsigned integer

Description: Set the containers network MTU (in bytes)

Parameter: apiSockets

Type: list of strings

Description: Daemon socket(s) to connect to (-H docker daemon option)

Parameter: iptables

Type: boolean

Description: Enable addition of iptables rules

Parameter: userNamespaceRemap

Type: string

Description: User/Group setting for user namespaces

Parameter: insecureRegistries

Type: list of strings

Description: If you have a registry secured with https but do not have proper certs distributed, you can tell docker to not look for full authorization by adding the registry to this list. Accepted Format : CIDR or hostname:port

Parameter: enableTls

Type: boolean

Description: Use TLS

Parameter: verifyTls

Type: boolean

Description: Use TLS and verify the remote

Parameter: tlsCa

Type: string

Description: Trust certs signed only by this CA

Parameter: tlsCertificate

Type: string

Description: Path to TLS certificate file

Parameter: tlsKey

Type: string

Description: Path to TLS key file

Parameter: certificatesPath

Type: string

Description: Path to docker certificates

Parameter: storageBackends

Type: list of DockerStorageBackend

Description: Docker storage backends

Parameter: `containerdSocket`

Type: string

Description: Path to containerd socket

Parameter: `runtime`

Type: string

Description: Docker runtime

Parameter: `options`

Type: list of strings

Description: Additional parameters for docker daemon

5.2.107 `DockerStorageAufsBackend: DockerStorageBackend`

parent: `DockerStorageBackend`

Parameter: `options`

Type: list of strings

Description: Extra options used for the AUFS storage backend

5.2.108 `DockerStorageBackend: Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: Docker storage backend name

5.2.109 `DockerStorageDeviceMapperBackend: DockerStorageBackend`

parent: `DockerStorageBackend`

Parameter: `loopDataSize`

Type: string

Description: Size to use when creating the loopback file for the 'data' device which is used for the thin pool (driver option: `dm.loopdatasize`)

Parameter: `loopMetadataSize`

Type: string

Description: Size to use when creating the loopback file for the 'metadadata' device which is used for the thin pool (driver option: `dm.loopmetadatasize`)

Parameter: `baseSize`

Type: string

Description: Size to use when creating the base device, which limits the size of images and container (driver option: `dm.basesize`)

Parameter: `poolDevice`

Type: string

Description: Custom block storage device to use for the thin pool (driver option: dm.thinpooldev)

Parameter: filesystem

Type: string

Description: Filesystem type to use for the base device (driver option: dm.fs)

Parameter: blockSize

Type: string

Description: Custom blocksize to use for the thin pool (driver option: dm.blocksize)

Parameter: blkDiscard

Type: boolean

Description: Enables or disables the use of blkdiscard when removing devicemapper devices (driver option: dm.blkdiscard)

Parameter: mkfsArguments

Type: list of strings

Description: Extra mkfs arguments to be used when creating the base device (drive option: dm.mkfsarg)

Parameter: mountOptions

Type: list of strings

Description: Extra mount options used when mounting the thin devices (drive option: dm.mountopt)

5.2.110 DockerStorageOverlay2Backend: DockerStorageBackend

parent: DockerStorageBackend

Parameter: overrideKernelCheck

Type: boolean

Description: Override the kernel check to allow overlay2

Parameter: size

Type: string

Description: Default max size of the container (empty = unlimited)

Parameter: options

Type: list of strings

Description: Extra options used for the AUFS storage backend

5.2.111 DrainAction: Entity

parent: Entity

Parameter: node

Type: reference to Node

Description: Node

Parameter: actions

Type: list of references to MonitoringAction

Description: Actions to execute after the node has been drained

5.2.112 DrainResult: Entity

parent: Entity

Parameter: refEntityUniqueKey

Type: unsigned integer

Description: Entity

Parameter: success

Type: boolean

Description: Success

Parameter: node

Type: list of unsigned numbers

Description: Node

Parameter: queue

Type: list of unsigned numbers

Description: Queue

Parameter: reason

Type: list of strings

Description: Reason

Parameter: result

Type: enum

Description: Result

5.2.113 EC2AvailabilityZone: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

5.2.114 EC2EBSStorage: EC2Storage

parent: EC2Storage

Parameter: volumeId

Type: string

Description: Volume ID assigned by EC2 EC2

Parameter: size

Type: unsigned integer

Description: Size

Parameter: persistent

Type: boolean

Description: Persistent storage will not be removed when instance is removed

Parameter: `availabilityZone`

Type: `string`

Description: Availability zone set by EC2

Parameter: `creationTime`

Type: `timestamp`

Description: Time of creation in EC2

Parameter: `status`

Type: `string`

Description: Status of EBS volume in EC2

Parameter: `volumeType`

Type: `enum`

Description: Specifies what type of EBS volume to use

Parameter: `iops`

Type: `unsigned integer`

Description: Specifies the IOPS rate for the provisioned IOPS volume type

Parameter: `encrypted`

Type: `boolean`

Description: *none*

Parameter: `snapshotId`

Type: `string`

Description: ID of the snapshot which should be used to instantiate the new disk. This field can be used to speed up node provisioning by first provisioning a cloud compute node, creating a snapshot of its volumes, and then setting that snapshot ID in this field for remaining cloud compute nodes.

5.2.115 `EC2EphemeralStorage: EC2Storage`

parent: `EC2Storage`

Parameter: `volumeId`

Type: `string`

Description: Ephemeral ID

Parameter: `size`

Type: `unsigned integer`

Description: Size

5.2.116 `EC2Image: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: The name of the image.

Parameter: id

Type: string

Description: The AMI ID

Parameter: apiHash

Type: string

Description: The API hash used to select compatible images.

Parameter: regionName

Type: string

Description: The name of the image region.

5.2.117 EC2OnDemandPrice: Entity

parent: Entity

Parameter: regionName

Type: string

Description: Region name.

Parameter: instanceType

Type: string

Description: Instance type.

Parameter: price

Type: string

Description: On-demand price.

Parameter: currency

Type: string

Description: Currency.

5.2.118 EC2Provider: CloudProvider

parent: CloudProvider

Parameter: APIRegionName

Type: string

Description: AWS region to be used for listing available regions

Parameter: accessKeyId

Type: string

Description: AWS access key ID

Parameter: accessKeySecret

Type: string

Description: AWS secret access key

Parameter: `iamRoleName`

Type: `string`

Description: IAM role to get AWS credentials from. The role must be assigned to the COD-AWS head node.

Parameter: `VPCs`

Type: `list of EC2VPC`

Description: List of VPCs

Parameter: `regions`

Type: `list of references to EC2Region`

Description: *none*

Parameter: `defaultRegion`

Type: `reference to EC2Region or None`

Description: Default region to start instances in

Parameter: `defaultType`

Type: `reference to EC2Type or None`

Description: Default type for instances

Parameter: `defaultDirectorType`

Type: `reference to EC2Type or None`

Description: Default type for cloud director instances

Parameter: `imageOwners`

Type: `list of strings`

Description: AWS Account IDs to be used to search for images

Parameter: `addJobBasedTag`

Type: `boolean`

Description: Enable automatic tagging of cloud resources with information of running cloud jobs to allow cost monitoring

Parameter: `JobIdTagName`

Type: `string`

Description: The name of the tag that contains the job ID when using job based tagging

Parameter: `JobAccountTagName`

Type: `string`

Description: The name of the tag that contains the job account when using job based tagging

Parameter: `JobUserTagName`

Type: `string`

Description: The name of the tag that contains the user name when using job based tagging

Parameter: `JobNameTagName`

Type: string

Description: The name of the tag that contains the job name when using job based tagging

Parameter: billingAccessKeyId

Type: string

Description: AWS billing access key ID

Parameter: billingAccessKeySecret

Type: string

Description: AWS billing secret access key

Parameter: marketplaceUsePolicy

Type: enum

Description: Preference towards using marketplace AMIs

5.2.119 EC2RegionAMI:Entity

parent: Entity

Parameter: region

Type: reference to EC2Region

Description: The cloud region containing this AMI

Parameter: amiID

Type: string

Description: The AMI ID

5.2.120 EC2Region:CloudRegion

parent: CloudRegion

Parameter: url

Type: string

Description: url

Parameter: availabilityZones

Type: list of EC2AvailabilityZone

Description: Availability zones

5.2.121 EC2Settings:CloudSettings

parent: CloudSettings

Parameter: instanceId

Type: string

Description: Instance-ID provided by EC2

Parameter: spotId

Type: string

Description: Spot-request-ID provided by EC2

Parameter: sshConnectString

Type: string

Description: SSH connection string provided by EC2

Parameter: externalIP

Type: IP

Description: The external IP address as set by the cloudprovider

Parameter: releaseStaticIPOnTermination

Type: boolean

Description: Release Static IP on termination of the instance

Parameter: useKernelAndInitrdFromTheSoftwareImage

Type: boolean

Description: Make the cloud node's node-installer download the kernel and the initrd from the software image configured for this cloud node and then reboot the cloud node to use those, instead of using the kernel and initrd already present on the node-installer's cloud image.

Parameter: type

Type: reference to EC2Type or None

Description: Type for instance

Parameter: region

Type: reference to EC2Region

Description: Region for instance

Parameter: imageId

Type: string

Description: ID of the AMI used to create instance ('latest': use latest AMI, '': inherit AMI from cloud provider)

Parameter: usesMarketplaceImage

Type: boolean

Description: Whether a paid AWS Marketplace is used for this node

Parameter: allocatePublicIP

Type: boolean

Description: Whether to allocate a public IP for this instance. Always true for cloud directors.

Parameter: sourceDestinationCheck

Type: boolean

Description: Whether to perform source/destination checks on the instance traffic.

Parameter: kernel

Type: string

Description: Kernel used to create instance

Parameter: initrd

Type: string

Description: Initial ramdisk used to create instance

Parameter: options

Type: string

Description: User defined options passed to EC2 on instance creation

Parameter: storage

Type: list of EC2Storage

Description: Assign EC2 storage

Parameter: cpuOptions

Type: string

Description: CPU Options in AWS shorthand syntax (e.g: CoreCount=8,ThreadsPerCore=1)

Parameter: spotPrice

Type: float

Description: Maximum price to start instance with

Parameter: spotPersistent

Type: boolean

Description: Persistent spot instances are requested again after they are automatically stopped, because price became to high

Parameter: useNonDefaultVirtualizationType

Type: boolean

Description: none

Parameter: placementGroup

Type: string

Description: Start instance in the specified placement group

Parameter: iamInstanceProfile

Type: string

Description: Name or ARN of instance profile to associate with

5.2.122 EC2SpotPrice: Entity

parent: Entity

Parameter: az

Type: string

Description: Availabiliy zone.

Parameter: instanceType

Type: string

Description: Instance type.

Parameter: price

Type: string

Description: Spot price.

Parameter: timestamp

Type: unsigned integer

Description: Price timestamp.

5.2.123 EC2Storage: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: drive

Type: string

Description: Mount device as /dev/?

Parameter: tags

Type: list of strings

Description: List of tags that will be assigned to storage

5.2.124 EC2Type: CloudType

parent: CloudType

Parameter: virtualizationType

Type: string

Description: Virtualization type.

5.2.125 EC2VPC: Entity

parent: Entity

Parameter: name

Type: string

Description: User-defined name of the private cloud

Parameter: vpcID

Type: string

Description: AWS VPC identifier

Parameter: defaultImageId

Type: string

Description: ID of the default AMI to start instances with ('latest' means using the latest AMI)

Parameter: mainRouteTable

Type: string

Description: Main route table AWS ID

Parameter: defaultACL

Type: string

Description: Default network access controll list ID

Parameter: internetGatewayID

Type: string

Description: The AWS ID of the internet gateway assigned to this VPC

Parameter: region

Type: reference to EC2Region

Description: AWS region of the VPC

Parameter: subnets

Type: list of references to Network

Description: Subnets (networks) associated with the VPC

Parameter: baseAddress

Type: IP

Description: Base IP address of the VPC

Parameter: netmaskBits

Type: integer

Description: Number of netmask Bits

Parameter: securityGroupNode

Type: string

Description: Security group ID of the cloud nodes

Parameter: securityGroupDirector

Type: string

Description: Security group ID of the cloud director

Parameter: routeTableIdPublic

Type: string

Description: Routing table ID for the public subnet

Parameter: routeTableIdPrivate

Type: string

Description: Routing table ID for private subnets

Parameter: setDirectorAsDefaultGateway

Type: boolean

Description: If specified, a default route via the director will be created in the private subnet. This is not necessary if the private subnet was already configured and the nodes have access to the head node (e.g Direct Connect)

Parameter: useInternalIPForDirectorIP

Type: boolean

Description: If specified, CMDaemon will use cloud director's internal IP, instead of a public/external IP. Useful when you have existing IP connectivity to your VPC.

Parameter: `enforceDirectorIP`

Type: IP

Description: If specified, CMDaemon will assume this is the cloud director's IP address.

5.2.126 `EdgeDirectorRole: DirectorRole`

parent: `DirectorRole`

Parameter: `nodePowerOperations`

Type: boolean

Description: Execute all power operations of nodes in the edge site on the director

Parameter: `directorPowerOperations`

Type: boolean

Description: Execute all power operation of the director on the director, note that this means it cannot be powered on

Parameter: `nodeSelectionBootRole`

Type: boolean

Description: Use the edge site as a node selection mechanism for the boot role

Parameter: `nodeSelectionDnsRole`

Type: boolean

Description: Use the edge site as a node selection mechanism for the DNS role

Parameter: `nodeSelectionProvisioningRole`

Type: boolean

Description: Use the edge site as a node selection mechanism for the provisioning role

Parameter: `addNamedService`

Type: boolean

Description: Add named service to the node

Parameter: `addSlapdService`

Type: boolean

Description: Add slapd service to the node

Parameter: `addNtpdService`

Type: boolean

Description: Add ntpd service to the node

Parameter: `openTCPPortsOnHeadNode`

Type: list of unsigned numbers

Description: The list of TCP ports that will be opened in shorewall on the head node

Parameter: `openUDPPortsOnHeadNode`

Type: list of unsigned numbers

Description: The list of UDP ports that will be opened in shorewall on the head node

Parameter: `externallyVisibleIp`

Type: IP

Description: IP that will be seen by other nodes when the director connects

Parameter: `externallyVisibleHeadNodeId`

Type: IP

Description: Head node IP that will be use by this director

Parameter: `syncCmShared`

Type: boolean

Description: Sync /cm/shared if required

5.2.127 `EdgeSite: Entity`

parent: Entity

Parameter: `name`

Type: string

Description: Name

Parameter: `contact`

Type: list of strings

Description: Names of contacts

Parameter: `adminEmail`

Type: list of strings

Description: Administrator's email

Parameter: `address`

Type: string

Description: Address

Parameter: `city`

Type: string

Description: City

Parameter: `country`

Type: string

Description: Country

Parameter: `timeZoneSettings`

Type: TimeZoneSettings or None

Description: Time zone

Parameter: `notes`

Type: string

Description: Notes

Parameter: nodes

Type: list of references to ComputeNode

Description: List of nodes in this site

Parameter: switches

Type: list of references to Switch

Description: List of switches in this site

Parameter: genericDevices

Type: list of references to GenericDevice

Description: List of generic devices in this site

Parameter: unmanagedNodes

Type: list of references to UnmanagedNode

Description: List of unmanaged nodes in this site

Parameter: powerDistributionUnits

Type: list of references to PowerDistributionUnit

Description: List of power distribution units in this site

Parameter: fabricDevices

Type: list of references to FabricDevice

Description: List of power distribution units in this site

Parameter: racks

Type: list of references to Rack

Description: List of racks in this site

Parameter: secret

Type: string

Description: Edge site secret

Parameter: metaDataDeviceLabel

Type: string

Description: Meta data device label which to mount in order get the meta data

Parameter: metaDataUrl

Type: string

Description: Meta data URL that contains information for edge directors

Parameter: createISO

Type: enum

Description: Edge site site ISO/script for USB

Parameter: createIMG

Type: enum

Description: Edge site site IMG/script for MMC

Parameter: includeCMSharedOnMedia

Type: boolean

Description: Include /cm/shared on media to reduce the amount of rsync during edge director installation

Parameter: includeImagesOnMedia

Type: boolean

Description: Include images on media to reduce the amount of rsync during edge director installation

Parameter: preStageRequestID

Type: UUID

Description: Pre-staging request ID

Parameter: preStageRequestIDCreationTime

Type: timestamp

Description: Pre-staging request ID creation time

5.2.128 EntityManagersMD5: Entity

parent: Entity

Parameter: name

Type: list of strings

Description: Name

Parameter: md5

Type: list of strings

Description: MD5

5.2.129 Entity

Parameter: uniqueKey

Type: 64 bit unsigned

Description: Unique identifier

Parameter: baseType

Type: string

Description: Basis instance type

Parameter: childType

Type: string

Description: Specialized instance type

Parameter: revision

Type: string

Description: A free text revision field

5.2.130 EtcdCluster: Entity**parent:** Entity**Parameter:** name**Type:** string**Description:** Name of the Etcd cluster**Parameter:** heartBeatInterval**Type:** unsigned integer**Description:** Time (in milliseconds) of a heartbeat interval**Parameter:** electionTimeout**Type:** unsigned integer**Description:** Time (in milliseconds) for an election to timeout**Parameter:** notes**Type:** string**Description:** Notes**Parameter:** ca**Type:** string**Description:** The Certificate Authority (CA) Certificate path for Etcd, used to generate certificates for Etcd.**Parameter:** cakey**Type:** string**Description:** The Certificate Authority (CA) Key path for Etcd, used to generate certificates for Etcd.**Parameter:** memberCertificate**Type:** string**Description:** The Certificate path to use for Etcd cluster members, signed with the Etcd CA.**Parameter:** memberCertificateKey**Type:** string**Description:** The Key path to use for Etcd cluster members, signed with the Etcd CA.**Parameter:** clientCertificate**Type:** string**Description:** The Client Certificate used for Etcdctl for example.**Parameter:** clientCertificateKey**Type:** string**Description:** The Client Certificate Key used for Etcdctl for example.**Parameter:** clientCA**Type:** string

Description: The Certificate Authority (CA) used for client certificates. When set it is assumed client certificate and key will be generated and signed with this CA by another party. Etcd still expects the path to be correct for the Client Certificate and Key.

Parameter: `clientTypeEtcd`

Type: unsigned integer

Description: client type in the CLIENT_TYPE_ETCD range

Parameter: `moduleFileTemplate`

Type: string

Description: Template for system module file

5.2.131 `EtcdHostRole: Role`

parent: Role

Parameter: `memberName`

Type: string

Description: Human-readable name for this member (\$hostname will be replaced to the node hostname)

Parameter: `spool`

Type: string

Description: Path to the data directory

Parameter: `listenClientUrls`

Type: list of strings

Description: List of URLs to listen on for client traffic

Parameter: `listenPeerUrls`

Type: list of strings

Description: List of URLs to listen on for peer traffic

Parameter: `advertiseClientUrls`

Type: list of strings

Description: List of this member's client URLs to advertise to the public

Parameter: `advertisePeerUrls`

Type: list of strings

Description: List of this member's peer URLs to advertise to the rest of the cluster

Parameter: `snapshotCount`

Type: unsigned integer

Description: Number of committed transactions to trigger a snapshot to disk

Parameter: `maxSnapshots`

Type: unsigned integer

Description: Maximum number of snapshot files to retain (0 is unlimited)

Parameter: `loglevel`

Type: `enum`

Description: Log level, only supports debug, info, warn, error, panic, or fatal.

Parameter: `options`

Type: list of strings

Description: Additional parameters for etcd daemon

Parameter: `etcdCluster`

Type: reference to `EtcdCluster`

Description: The Etcd cluster instance

Parameter: `memberCertificate`

Type: `string`

Description: Etcd member certificate, signed with CA specified in the Etcd Cluster. When set it will overrule the value from the `EtcdCluster` object.

Parameter: `memberCertificateKey`

Type: `string`

Description: Etcd member certificate key, signed with CA specified in the Etcd Cluster. When set it will overrule the value from the `EtcdCluster` object.

5.2.132 `EthernetSwitch: Switch`

parent: `Switch`

5.2.133 `ExcludeListSnippet: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Name

Parameter: `excludeList`

Type: list of strings

Description: Excluded paths in the node image update

Parameter: `disabled`

Type: `boolean`

Description: Disabled

Parameter: `noNewFiles`

Type: `boolean`

Description: No new files

Parameter: `modeSync`

Type: `boolean`

Description: Include this snippet when mode is sync

Parameter: modeFull

Type: boolean

Description: Include this snippet when mode is full

Parameter: modeUpdate

Type: boolean

Description: Include this snippet when mode is update

Parameter: modeGrab

Type: boolean

Description: Include this snippet when mode is grab

Parameter: modeGrabNew

Type: boolean

Description: Include this snippet when mode is grab new

5.2.134 ExternalOperationFirmwareInfoResult: ExternalOperationResult

parent: ExternalOperationResult

Parameter: firmwareInfo

Type: list of FirmwareInfo

Description: Firmware info

5.2.135 ExternalOperationJSONResult: ExternalOperationResult

parent: ExternalOperationResult

Parameter: output

Type: free JSON object

Description: Output

Parameter: error

Type: string

Description: Error

5.2.136 ExternalOperationRawResult: ExternalOperationResult

parent: ExternalOperationResult

Parameter: output

Type: string

Description: Output

Parameter: error

Type: string

Description: Error

5.2.137 ExternalOperationResult: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: result

Type: enum

Description: Result

5.2.138 FabricConfigurationBindingStatus: Entity

parent: Entity

Parameter: refFabricSwitchUniqueKey

Type: unsigned integer

Description: FabricSwitch

Parameter: bindings

Type: list of FabricConfigurationBinding

Description: Bindings

5.2.139 FabricConfigurationBinding: Entity

parent: Entity

Parameter: refTopologyZoneUniqueKey

Type: unsigned integer

Description: Topology zone

Parameter: refTopologyDSPUniqueKeys

Type: list of unsigned numbers

Description: Topology DSPs bound to this zone, host

Parameter: refTopologyLinkUniqueKeys

Type: list of unsigned numbers

Description: Topology links bound to this zone, host

5.2.140 FabricConfigurationFreeBinding: FabricConfigurationBinding

parent: FabricConfigurationBinding

5.2.141 FabricConfigurationHostBinding: FabricConfigurationBinding

parent: FabricConfigurationBinding

Parameter: refTopologyHostUniqueKey

Type: unsigned integer

Description: Topology host

5.2.142 FabricConfigurationLinkBinding: FabricConfigurationBinding

parent: FabricConfigurationBinding

Parameter: refTopologyLinkUniqueKey

Type: unsigned integer

Description: Topology link

5.2.143 FabricConfiguration: Entity

parent: Entity

Parameter: name

Type: string

Description: A short name to identify this fabric configuration

Parameter: bindMethod

Type: enum

Description: Redfish REST method to use for sending binding changes

Parameter: unbindAllAfterTopologyApply

Type: boolean

Description: Unbind all after topology apply

Parameter: checkNodesDownForApplyTopology

Type: boolean

Description: Check nodes down for apply topology

Parameter: checkResourceBoxesDownForApplyTopology

Type: boolean

Description: Check resources boxes down for apply topology

Parameter: checkNodesDownForApplyBinding

Type: boolean

Description: Check nodes down for apply binding

Parameter: checkResourceBoxesDownForApplyBinding

Type: boolean

Description: Check resources boxes down for apply binding

Parameter: topology

Type: FabricConfigurationTopology

Description: Configured topology

5.2.144 FabricConfigurationTopologyDevice: FabricConfigurationTopologyItem

parent: FabricConfigurationTopologyItem

Parameter: switchIndex

Type: unsigned integer

Description: The index of the switch the device is on

Parameter: portIndex

Type: unsigned integer

Description: The port of the switch the device is on

5.2.145 FabricConfigurationTopologyDSP: FabricConfigurationTopologyDevice**parent:** FabricConfigurationTopologyDevice**Parameter:** fabricResourceBox**Type:** reference to FabricResourceBox or None**Description:** Host**Parameter:** side**Type:** enum**Description:** Side of the fabricResourceBox**5.2.146 FabricConfigurationTopologyHost: FabricConfigurationTopologyDevice****parent:** FabricConfigurationTopologyDevice**Parameter:** host**Type:** reference to Node or None**Description:** Host**Parameter:** dynamic**Type:** boolean**Description:** Add the node as a dynamic host so it can be swapped out without applying the topology**5.2.147 FabricConfigurationTopologyItem: Entity****parent:** Entity**Parameter:** portsUsed**Type:** unsigned integer**Description:** The number of port used on the switch**Parameter:** lanes**Type:** unsigned integer**Description:** The number of PCI lanes**5.2.148 FabricConfigurationTopologyLink: FabricConfigurationTopologyItem****parent:** FabricConfigurationTopologyItem**Parameter:** index**Type:** unsigned integer**Description:** Index**Parameter:** name**Type:** string**Description:** Alternative name**Parameter:** downstreamSwitchIndex**Type:** unsigned integer**Description:** The index of the switch of the downstream bridge connection**Parameter:** downstreamPortIndex

Type: unsigned integer

Description: The port of the switch of the downstream bridge connection

Parameter: upstreamSwitchIndex

Type: unsigned integer

Description: The index of the switch of the upstream bridge connection

Parameter: upstreamPortIndex

Type: unsigned integer

Description: The port of the switch the of the upstream bridge connection

Parameter: type

Type: enum

Description: Type of link this ports connect

5.2.149 FabricConfigurationTopologySwitch: Entity

parent: Entity

Parameter: index

Type: unsigned integer

Description: The index of the zone

Parameter: fabricSwitch

Type: reference to FabricSwitch or None

Description: Switch

5.2.150 FabricConfigurationTopology: Entity

parent: Entity

Parameter: name

Type: string

Description: Name of the topology

Parameter: rawTemplate

Type: free JSON object

Description: Template returned by the switch

Parameter: refFabricSwitchUniqueKeys

Type: list of unsigned numbers

Description: The fabric switches that provide this topology

Parameter: topologyZones

Type: list of FabricConfigurationTopologyZone

Description: Zones

Parameter: topologyDevices

Type: list of FabricConfigurationTopologyDevice

Description: Devices

Parameter: topologyLinks

Type: list of FabricConfigurationTopologyLink

Description: Links

Parameter: topologySwitches

Type: list of FabricConfigurationTopologySwitch

Description: Switches

Parameter: topologyManagementSwitch

Type: element of topologySwitches

Description: The switch in the topology that will be used for all management operations

Parameter: topologyBindings

Type: list of FabricConfigurationBinding

Description: Fixed topology bindings

5.2.151 FabricConfigurationTopologyZone: Entity

parent: Entity

Parameter: index

Type: unsigned integer

Description: The index of the zone

Parameter: name

Type: string

Description: Name of the zone

5.2.152 FabricDevice: Device

parent: Device

Parameter: ip

Type: IP

Description: Ip address

Parameter: network

Type: reference to Network or None

Description: Network to which this switch is connected

Parameter: userName

Type: string

Description: Username used to send Redfish commands

Parameter: password

Type: string

Description: Password used to send Redfish commands

5.2.153 FabricNodeStatus: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: uuid

Type: UUID

Description: UUID

Parameter: good

Type: boolean

Description: Good

Parameter: info

Type: string

Description: Information

5.2.154 FabricResourceBoxDeviceFunctionInformation: Entity

parent: Entity

Parameter: id

Type: string

Description: ID

Parameter: name

Type: string

Description: Name

Parameter: description

Type: string

Description: Description

Parameter: deviceClass

Type: string

Description: Device class

Parameter: deviceId

Type: string

Description: Device ID

Parameter: revisionId

Type: string

Description: Revision ID

Parameter: subSystemId

Type: string

Description: Sub system ID

Parameter: subSystemVendorId

Type: string

Description: Sub system vendor ID

Parameter: vendorId

Type: string

Description: Vendor ID

5.2.155 FabricResourceBoxDeviceInformation: Entity

parent: Entity

Parameter: id

Type: string

Description: ID

Parameter: name

Type: string

Description: Name

Parameter: description

Type: string

Description: Description

Parameter: manufacturer

Type: string

Description: Manufacturer

Parameter: serialNumber

Type: string

Description: Serial number

Parameter: firmwareVersion

Type: string

Description: Firmware version

Parameter: slot

Type: string

Description: Slot

Parameter: functions

Type: list of FabricResourceBoxDeviceFunctionInformation

Description: Functions

5.2.156 FabricResourceBoxInformation: Entity**parent:** Entity**Parameter:** refTopologyDSPUniqueKey**Type:** unsigned integer**Description:** Topology DSP matching this resource/side**Parameter:** chassisType**Type:** string**Description:** Chassis type**Parameter:** description**Type:** string**Description:** Description**Parameter:** manufacturer**Type:** string**Description:** Manufacturer**Parameter:** redfishVersion**Type:** string**Description:** Red fish version**Parameter:** devices**Type:** list of FabricResourceBoxDeviceInformation**Description:** Devices**5.2.157 FabricResourceBox: FabricDevice****parent:** FabricDevice**5.2.158 FabricSwitch: FabricDevice****parent:** FabricDevice**Parameter:** vendor**Type:** string**Description:** Fabric switch vendor**Parameter:** ports**Type:** unsigned integer**Description:** Number of ports**Parameter:** lanesPerPort**Type:** unsigned integer**Description:** PCI Lanes per port**5.2.159 FailoverRole: Role****parent:** Role**Parameter:** syncCmShared

Type: boolean

Description: Passive head node has a local copy of /cm/shared

5.2.160 FileContent: Entity

parent: Entity

Parameter: filename

Type: string

Description: Filename

Parameter: content

Type: string

Description: Content

Parameter: username

Type: string

Description: Username

Parameter: permissions

Type: integer

Description: Permissions

5.2.161 FileWriteInfo: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: path

Type: string

Description: Path

Parameter: timestamp

Type: timestamp

Description: Timestamp on which file was last changed

Parameter: actor

Type: enum

Description: Actor that wrote the file

Parameter: frozen

Type: boolean

Description: Frozen

5.2.162 FirewallInterface: Entity

parent: Entity

Parameter: zone

Type: string

Description: Zone

Parameter: interface

Type: string

Description: Interface

Parameter: broadcast

Type: string

Description: Broadcast

Parameter: options

Type: string

Description: Options

5.2.163 FirewallOpenPort:Entity

parent: Entity

Parameter: action

Type: enum

Description: Specifies the action to be taken if the connection request matches the rule

Parameter: network

Type: string

Description: Network

Parameter: port

Type: unsigned integer

Description: Port

Parameter: protocol

Type: enum

Description: Protocol

Parameter: address

Type: CIDR

Description: Network Address

Parameter: destination

Type: string

Description: Destination hosts to which the rule applies

Parameter: description

Type: string

Description: Description

5.2.164 FirewallPolicy: Entity**parent:** Entity**Parameter:** source**Type:** string**Description:** Source**Parameter:** dest**Type:** string**Description:** Dest**Parameter:** policy**Type:** enum**Description:** Policy**Parameter:** log**Type:** string**Description:** Log**Parameter:** options**Type:** string**Description:** Options**5.2.165 FirewallRole: Role****parent:** Role**Parameter:** shorewall**Type:** boolean**Description:** Manage shorewall**Parameter:** openPorts**Type:** list of FirewallOpenPort**Description:** The list of ports that will be opened on the node's firewall**Parameter:** zones**Type:** list of FirewallZone**Description:** The list of extra zones that will be defined in the node's firewall**Parameter:** interfaces**Type:** list of FirewallInterface**Description:** The list of extra interfaces that will be defined in the node's firewall**Parameter:** policies**Type:** list of FirewallPolicy**Description:** The list of extra policies that will be defined in the node's firewall

5.2.166 FirewallZone: Entity**parent:** Entity**Parameter:** zone**Type:** string**Description:** Zone**Parameter:** zone_type**Type:** enum**Description:** Type**Parameter:** options**Type:** string**Description:** Options**5.2.167 FirmwareInfo: Entity****parent:** Entity**Parameter:** refNodeUniqueKey**Type:** unsigned integer**Description:** Node**Parameter:** filename**Type:** string**Description:** Filename**Parameter:** component**Type:** string**Description:** Component**Parameter:** version**Type:** string**Description:** Version**Parameter:** state**Type:** enum**Description:** Result**Parameter:** progress**Type:** float**Description:** Progress**Parameter:** result**Type:** string**Description:** Result**Parameter:** size**Type:** unsigned integer

Description: Size

Parameter: date

Type: string

Description: Date

Parameter: timestamp

Type: timestamp

Description: Epoch timestamp, parsed version of date

5.2.168 FPGAInfo:Entity

parent: Entity

Parameter: vendor

Type: string

Description: none

Parameter: bdf

Type: string

Description: none

Parameter: cardType

Type: string

Description: none

Parameter: flashType

Type: string

Description: none

Parameter: dsaRunningFPGA

Type: string

Description: none

Parameter: dsaPackageInstalled

Type: string

Description: none

Parameter: name

Type: string

Description: none

Parameter: rev

Type: string

Description: none

Parameter: serial

Type: string

Description: *none*

Parameter: `configMode`

Type: `string`

Description: *none*

Parameter: `fanPresence`

Type: `string`

Description: *none*

Parameter: `maxPowerLevel`

Type: `string`

Description: *none*

Parameter: `mac0`

Type: `MAC`

Description: *none*

Parameter: `mac1`

Type: `MAC`

Description: *none*

Parameter: `mac2`

Type: `MAC`

Description: *none*

Parameter: `mac3`

Type: `MAC`

Description: *none*

5.2.169 `FSExport:Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Normally the same as the path, useful when exporting a path twice

Parameter: `path`

Type: `string`

Description: Path to export

Parameter: `network`

Type: reference to `Network` or `None`

Description: Network the interface is connected to

Parameter: `hosts`

Type: `string`

Description: Specify extra hosts-range allowed access to this export (space separated)

Parameter: `automatic`

Type: `boolean`

Description: The export was created automatically

Parameter: `allowWrite`

Type: `boolean`

Description: Allow writing

Parameter: `async`

Type: `boolean`

Description: Allow the NFS server to violate the NFS protocol and reply to requests before any changes made by that request have been committed to stable storage

Parameter: `rootSquash`

Type: `boolean`

Description: Map requests from uid/gid 0 to the anonymous uid/gid

Parameter: `allSquash`

Type: `boolean`

Description: Map all uids and gids to the anonymous user

Parameter: `anonUid`

Type: `unsigned integer`

Description: Anonymous account user id number

Parameter: `anonGid`

Type: `unsigned integer`

Description: Anonymous account group id number

Parameter: `extraOptions`

Type: `string`

Description: Extra options to be added to this export

Parameter: `fsid`

Type: `unsigned integer`

Description: Identification for exports used in failover setup. Make sure these are identical

Parameter: `rdma`

Type: `boolean`

Description: Enable NFS over RDMA

Parameter: `disabled`

Type: `boolean`

Description: Disable the export

Parameter: `checkTree`

Type: `boolean`

Description: Check tree

5.2.170 `FSMount:Entity`

parent: `Entity`

Parameter: `device`

Type: `string`

Description: What to mount.

Parameter: `mountpoint`

Type: `string`

Description: Where to mount.

Parameter: `filesystem`

Type: `string`

Description: The file system type.

Parameter: `mountoptions`

Type: `string`

Description: What options to use for mounting.

Parameter: `dump`

Type: `boolean`

Description: Dump field in fstab, see man fstab.

Parameter: `fsck`

Type: `enum`

Description: Filesystem check field in fstab, see man fstab.

Parameter: `rdma`

Type: `boolean`

Description: Enable NFS over RDMA.

5.2.171 `FSPartAssociation:Entity`

parent: `Entity`

Parameter: `syncPoint`

Type: `string`

Description: Directory the FSPart should be synchronized to on the target.

Parameter: `prefix`

Type: `string`

Description: Optional prefix to the sync point.

Parameter: `fspart`

Type: reference to `FSPart`

Description: FSPart this association is associated with.

Parameter: onSharedStorage

Type: boolean

Description: FSPart associations on shared storage can be used as provisioning source, but don't need to be kept up-to-date.

Parameter: disabled

Type: boolean

Description: Do not rsync this association

Parameter: backupDirectory

Type: string

Description: Backup directory

5.2.172 FSPartBasicAssociation: FSPartAssociation

parent: FSPartAssociation

Parameter: isRoot

Type: boolean

Description: Indicates if this association is the root file system for the target. A node can only have one association where this is set.

5.2.173 FSPartInfo: Entity

parent: Entity

Parameter: refFSPartUniqueKey

Type: unsigned integer

Description: FSPart

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: archOSInfo

Type: ArchOSInfo or None

Description: Detected arch/OS

Parameter: size

Type: unsigned integer

Description: Total size

Parameter: inotifyWatcherSize

Type: unsigned integer

Description: Inotify watcher size

5.2.174 FSPartProviderAssociation: FSPartAssociation**parent:** FSPartAssociation**Parameter:** onlyWhenActive**Type:** boolean**Description:** Only use provider association if the node is the active head node**5.2.175 FSPartRole: Role****parent:** Role**Parameter:** fsparts**Type:** list of references to FSPart**Description:** FSParts**Parameter:** fspartSource**Type:** boolean**Description:** Server as source for all these FSParts**5.2.176 FSPart: Entity****parent:** Entity**Parameter:** path**Type:** string**Description:** Full source path of the filesystem part**Parameter:** type**Type:** enum**Description:** The type of filesystem part**Parameter:** watchDirectories**Type:** list of strings**Description:** Watch directories for changes on the active head node, filesystem part will be marked dirty when changed**Parameter:** dirtyAutoSyncDelay**Type:** unsigned integer**Description:** Time to wait before automatically syncing after the filesystem part became dirty, set 0 to disable**Parameter:** autoDirtyDelay**Type:** unsigned integer**Description:** Time to wait before automatically marking an filesystem part as dirty, set 0 to disable**Parameter:** preSyncScript**Type:** string**Description:** Script to be executed before rsync runs**Parameter:** postSyncScript**Type:** string

Description: Script to be executed after rsync runs

Parameter: `abortOnPreSyncScriptFailure`

Type: `boolean`

Description: Do not rsync if the pre sync script exited with a non zero exit code

Parameter: `runPostOnFailure`

Type: `boolean`

Description: Run the post rsync script even if the pre sync or sync ended with a non zero exit code

Parameter: `syncScriptTimeout`

Type: `unsigned integer`

Description: Script timeout

Parameter: `rsyncAcls`

Type: `boolean`

Description: Rsync with `-acls`

Parameter: `rsyncXattrs`

Type: `boolean`

Description: Rsync with `-xattrs`

Parameter: `rsyncHardlinks`

Type: `boolean`

Description: Rsync with `-hard-links`

Parameter: `rsyncSparse`

Type: `boolean`

Description: Rsync with `-sparse`

Parameter: `rsyncNumericIds`

Type: `boolean`

Description: Rsync with `-numeric-ids`

Parameter: `rsyncForce`

Type: `boolean`

Description: Rsync with `-force`

Parameter: `rsyncPrune`

Type: `boolean`

Description: Rsync with `-prune-empty-dirs`

Parameter: `rsyncDelta`

Type: `boolean`

Description: Rsync with `-inplace -no-whole-file`

Parameter: `rsyncBlockSize`

Type: unsigned integer

Description: Rsync with `-block-size=<value>` Max 128KB, 0 implies rsync default

Parameter: `rsyncBandWidthLimit`

Type: unsigned integer

Description: Rsync with `-bwlimit=<value>`

Parameter: `rsyncCompress`

Type: enum

Description: Rsync with `-compress`

Parameter: `rsyncCompressLevel`

Type: enum

Description: Rsync compression at a specific level

Parameter: `extraRsyncArguments`

Type: list of strings

Description: Extra rsync arguments. These can be made condition based on `type=no-new-files|normal` and `mode=sync|update|full|sync`. For example: `-max-delete=0?type=normal&mode=update|sync`

Parameter: `excludeListSnippets`

Type: list of `ExcludeListSnippet`

Description: *none*

5.2.177 FSxInstance: Entity

parent: Entity

Parameter: `fsxId`

Type: string

Description: AWS assigned unique identifier

Parameter: `name`

Type: string

Description: Non-unique identifier

Parameter: `owner`

Type: string

Description: Owner of the FSx instance

Parameter: `sharedWith`

Type: list of strings

Description: Other cmjob users that can use this instance for jobs.

Parameter: `vpcId`

Type: string

Description: The VPC in which it exists

Parameter: `region`

Type: string

Description: The AWS region where the instance was created

Parameter: capacity

Type: unsigned integer

Description: Size in GB. Should be at least 3600

Parameter: status

Type: string

Description: AWS reported status of the instance

Parameter: hostname

Type: string

Description: Hostname of the FSx, is internal to the VPC

Parameter: management

Type: enum

Description: Instance management type

Parameter: creationTime

Type: string

Description: Creation time

5.2.178 GenericDevice: Device

parent: Device

Parameter: ip

Type: IP

Description: Ip address

Parameter: network

Type: reference to Network or None

Description: Network to which this switch is connected

Parameter: model

Type: string

Description: Device model name

Parameter: additionalHostnames

Type: list of strings

Description: List of additional hostnames that should resolve to the interfaces IP address

5.2.179 GenericResource: BasicResource

parent: BasicResource

Parameter: activateScript

Type: string

Description: Script to be executed when the resource is given to a node

Parameter: deactivateScript

Type: string

Description: Script to be executed when the resource is taken a way from a node

Parameter: checkScript

Type: string

Description: Script to be executed periodically to verify the resource is still running

Parameter: arguments

Type: list of strings

Description: Arguments to pass to the script

Parameter: scriptTimeout

Type: unsigned integer

Description: Script timeout

5.2.180 GenericRoleConfiguration: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: createDirectory

Type: boolean

Description: Create directory if it doesn't exist

Parameter: filename

Type: string

Description: Filename

Parameter: mask

Type: unsigned integer

Description: Filemask directory

Parameter: userName

Type: string

Description: User ownership applied to the file

Parameter: groupName

Type: string

Description: Group ownership applied to the file

Parameter: disabled

Type: boolean

Description: Disabled

Parameter: `serviceActionOnWrite`

Type: enum

Description: Action performed on service if the file changed

Parameter: `serviceStopOnFailure`

Type: boolean

Description: Stop services if the file write failed

5.2.181 `GenericRoleEnvironment: Entity`

parent: Entity

Parameter: `name`

Type: string

Description: Name

Parameter: `value`

Type: string

Description: Value

Parameter: `nodeEnvironment`

Type: boolean

Description: Update the node environment variables

5.2.182 `GenericRoleGeneratedConfiguration: GenericRoleConfiguration`

parent: GenericRoleConfiguration

Parameter: `script`

Type: string

Description: Script

Parameter: `arguments`

Type: list of strings

Description: Arguments

Parameter: `timeout`

Type: unsigned integer

Description: Timeout

Parameter: `watch`

Type: boolean

Description: Watch script for for changes, and rerun

5.2.183 `GenericRoleStaticConfiguration: GenericRoleConfiguration`

parent: GenericRoleConfiguration

Parameter: `content`

Type: string

Description: Content to write into file

Parameter: filemask

Type: unsigned integer

Description: Filemask

5.2.184 GenericRoleSymlinkConfiguration: GenericRoleConfiguration

parent: GenericRoleConfiguration

Parameter: sourceFilename

Type: string

Description: Source filename

Parameter: watch

Type: boolean

Description: Watch source file for for changes, and treat as file change

5.2.185 GenericRoleTemplatedConfiguration: GenericRoleConfiguration

parent: GenericRoleConfiguration

Parameter: templateContent

Type: string

Description: Template to use for writing file

Parameter: environmentFromKeyValueStore

Type: boolean

Description: Use key value store for extra replacement rules

5.2.186 GenericRole: Role

parent: Role

Parameter: services

Type: list of strings

Description: *none*

Parameter: configuration

Type: list of GenericRoleConfiguration

Description: *none*

Parameter: extraEnvironment

Type: list of GenericRoleEnvironment

Description: *none*

Parameter: excludeListSnippets

Type: list of ExcludeListSnippet

Description: *none*

Parameter: dataNode

Type: boolean

Description: If enabled the node will never do a FULL install without explicit user confirmation

5.2.187 GNSSLocation: Entity

parent: Entity

Parameter: refEntityUniqueKey

Type: unsigned integer

Description: Entity

Parameter: timestamp

Type: float

Description: none

Parameter: latitude

Type: float

Description: none

Parameter: longitude

Type: float

Description: none

Parameter: height

Type: float

Description: none

Parameter: message

Type: string

Description: none

5.2.188 GPUInfo: Entity

parent: Entity

Parameter: name

Type: string

Description: none

Parameter: index

Type: unsigned integer

Description: none

Parameter: pciBusId

Type: string

Description: none

Parameter: pciDevId

Type: string

Description: none

Parameter: pciSubSysId

Type: string

Description: *none*

Parameter: pciMaxLinkGen

Type: string

Description: *none*

Parameter: pciLinkGen

Type: string

Description: *none*

Parameter: pciMaxLinkWidth

Type: string

Description: *none*

Parameter: pciLinkWidth

Type: string

Description: *none*

Parameter: serial

Type: string

Description: *none*

Parameter: uuid

Type: string

Description: *none*

Parameter: vBios

Type: string

Description: *none*

Parameter: driverModel

Type: string

Description: *none*

Parameter: infoRom

Type: string

Description: *none*

Parameter: powerMode

Type: string

Description: *none*

Parameter: powerLimit

Type: string

Description: *none*

Parameter: `displayMode`

Type: `string`

Description: *none*

Parameter: `eccMode`

Type: `string`

Description: *none*

Parameter: `computeMode`

Type: `string`

Description: *none*

Parameter: `operationMode`

Type: `string`

Description: *none*

Parameter: `persistenceMode`

Type: `string`

Description: *none*

Parameter: `clocksSettings`

Type: `list of strings`

Description: *none*

5.2.189 GPUProfilingMetricInfo: Entity

parent: `Entity`

Parameter: `refNodeUniqueKey`

Type: `unsigned integer`

Description: `Node`

Parameter: `gpu`

Type: `unsigned integer`

Description: `GPU index`

Parameter: `majorId`

Type: `unsigned integer`

Description: `Major ID`

Parameter: `minorId`

Type: `unsigned integer`

Description: `Minor ID`

Parameter: `fieldId`

Type: `unsigned integer`

Description: Field ID

Parameter: `metric`

Type: string

Description: Metric

Parameter: `enabled`

Type: boolean

Description: Enabled

5.2.190 GPUSettings: Entity

parent: Entity

Parameter: `name`

Type: string

Description: Range of GPUs for which these settings apply

5.2.191 GpuStatusEntry: Entity

parent: Entity

Parameter: `refNodeUniqueKey`

Type: unsigned integer

Description: Node

Parameter: `index`

Type: unsigned integer

Description: GPU index for this status entry

Parameter: `gpu`

Type: string

Description: Name of the GPU

Parameter: `property`

Type: string

Description: Property name

Parameter: `value`

Type: string

Description: Value of the property

Parameter: `supported`

Type: list of strings

Description: List of supported values for this property

5.2.192 GridEngineJobQueueStat: JobQueueStat

parent: JobQueueStat

Parameter: `load`

Type: float

Description: Queue queue load

Parameter: `used`

Type: unsigned integer

Description: Used queue slots

Parameter: `available`

Type: unsigned integer

Description: Available queue slots

Parameter: `total`

Type: unsigned integer

Description: Total queue slots

Parameter: `resv`

Type: unsigned integer

Description: Reserved queue slots

5.2.193 GridEngineJobQueue: JobQueue

parent: JobQueue

Parameter: `slots`

Type: string

Description: Number of slots

Parameter: `tmpdir`

Type: string

Description: Temporary directory for queue

Parameter: `prolog`

Type: string

Description: Path to prolog script (e.g. `root@/cm/local/apps/cmd/scripts/prolog`)

Parameter: `epilog`

Type: string

Description: Path to epilog script

Parameter: `starterMethod`

Type: string

Description: Script to be executed instead of shell to run the job

Parameter: `suspendMethod`

Type: string

Description: Grid Engine Suspend method

Parameter: `resumeMethod`

Type: string

Description: Grid Engine Resume method

Parameter: `terminateMethod`

Type: `string`

Description: Grid Engine Terminate method

Parameter: `minWalltime`

Type: `string`

Description: Minimum runtime for jobs in queue

Parameter: `maxWalltime`

Type: `string`

Description: Maximum runtime for jobs in queue

5.2.194 `GridEngineJob: Job`

parent: `Job`

5.2.195 `GridEngineParallelEnvironment: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: The name of the parallel environment (to be used in the `qsub -pe` switch)

Parameter: `slots`

Type: `unsigned integer`

Description: The number of parallel processes being allowed to run in total under the PE concurrently

Parameter: `userLists`

Type: `list of strings`

Description: A list of user access list names

Parameter: `xUserLists`

Type: `list of strings`

Description: An exclude list of user access list names

Parameter: `startProcedureArguments`

Type: `string`

Description: The invocation command line of a start-up procedure

Parameter: `stopProcedureArguments`

Type: `string`

Description: The invocation command line of a shutdown procedure

Parameter: `allocationRule`

Type: `string`

Description: The allocation rule helps the scheduler to decide how to distribute parallel processes

Parameter: `controlSlaves`

Type: `boolean`

Description: Indicates if GE is the creator of the slave tasks via `sge_execd` and `sge_shepherd`

Parameter: `jobIsFirstTask`

Type: `boolean`

Description: A value of true indicates that the GE job script already contains one of the tasks

Parameter: `urgencySlots`

Type: `string`

Description: Specifies the method to be used by GE to assess the number of slots such jobs might finally get

Parameter: `accountingSummary`

Type: `boolean`

Description: Indicates if only a single accounting record (job summary) is written to the accounting file

Parameter: `extraParameters`

Type: list of strings

Description: Additional parameters that will be added to PE configuration

Parameter: `perPeTaskProlog`

Type: `string`

Description: Prolog script that is started for each slave task

Parameter: `perPeTaskEpilog`

Type: `string`

Description: Epilog script that is started for each slave task

5.2.196 Group: Entity

parent: Entity

Parameter: `ID`

Type: `string`

Description: Group ID

Parameter: `name`

Type: `string`

Description: Group name

Parameter: `members`

Type: list of strings

Description: Users belonging to this group

5.2.197 GuiCephOsdPoolInfo: Entity

parent: Entity

Parameter: `refCephOSDPoolUniqueKey`

Type: unsigned integer

Description: CephOSDPool

Parameter: name

Type: string

Description: Name

Parameter: sizeBytes

Type: unsigned integer

Description: size_bytes

Parameter: numObjects

Type: unsigned integer

Description: num_objects

Parameter: numObjectClones

Type: unsigned integer

Description: num_object_clones

Parameter: numObjectCopies

Type: unsigned integer

Description: num_object_copies

Parameter: numObjectsMissingOnPrimary

Type: unsigned integer

Description: num_objects_missing_on_primary

Parameter: numObjectsDegraded

Type: unsigned integer

Description: num_objects_degraded

Parameter: numObjectsUnfound

Type: unsigned integer

Description: num_objects_unfound

Parameter: readOps

Type: unsigned integer

Description: Number of reads

Parameter: readBytes

Type: unsigned integer

Description: Total read

Parameter: writeOps

Type: unsigned integer

Description: Number of writes

Parameter: `writeBytes`
Type: unsigned integer
Description: Total write

5.2.198 `GuiCephOverview: Entity`

parent: `Entity`

Parameter: `refCephUniqueKey`
Type: unsigned integer
Description: Ceph

Parameter: `status`
Type: string
Description: Status

Parameter: `numPgs`
Type: unsigned integer
Description: Number of placement groups

Parameter: `numMons`
Type: unsigned integer
Description: Number of monitors

Parameter: `numOsds`
Type: unsigned integer
Description: Total

Parameter: `numUpOsds`
Type: unsigned integer
Description: Up

Parameter: `numInOsds`
Type: unsigned integer
Description: In

Parameter: `pgsBytesTotal`
Type: unsigned integer
Description: PGS Bytes Total

Parameter: `pgsBytesUsed`
Type: unsigned integer
Description: PGS Bytes Used

Parameter: `pgsBytesAvail`
Type: unsigned integer
Description: PGS Bytes Avail

Parameter: `pgsDataBytes`

Type: unsigned integer

Description: Amount of actual data in placement groups

Parameter: pgsReadBytesSec

Type: unsigned integer

Description: Bytes read per second for placement groups

Parameter: pgsWriteBytesSec

Type: unsigned integer

Description: Bytes written per second for placement groups

Parameter: pgs

Type: list of GuiCephPgsInfo

Description: PGS

Parameter: osdpools

Type: list of GuiCephOsdPoolInfo

Description: Ceph OSD Pool Information

5.2.199 GuiCephPgsInfo: Entity

parent: Entity

Parameter: stateName

Type: string

Description: State name

Parameter: version

Type: string

Description: Version

Parameter: numPgs

Type: unsigned integer

Description: Num Pgs

Parameter: dataBytes

Type: unsigned integer

Description: Data Bytes

Parameter: usedBytes

Type: unsigned integer

Description: Used Bytes

Parameter: availBytes

Type: unsigned integer

Description: Avail Bytes

Parameter: totalBytes

Type: unsigned integer

Description: Total Bytes

5.2.200 `GuiClusterOverview: Entity`

parent: Entity

Parameter: `refPartitionUniqueKey`

Type: unsigned integer

Description: Partition

Parameter: `uptime`

Type: unsigned integer

Description: Uptime of the active head node

Parameter: `nodesUp`

Type: unsigned integer

Description: Number of nodes that are listed as up

Parameter: `nodesDown`

Type: unsigned integer

Description: Number of nodes that are listed as down

Parameter: `nodesClosed`

Type: unsigned integer

Description: Number of nodes that are listed as closed

Parameter: `nodesTotal`

Type: unsigned integer

Description: Number of nodes

Parameter: `liteNodesUp`

Type: unsigned integer

Description: Number of lite nodes that are listed as up

Parameter: `liteNodesDown`

Type: unsigned integer

Description: Number of lite nodes that are listed as down

Parameter: `liteNodesClosed`

Type: unsigned integer

Description: Number of lite nodes that are listed as closed

Parameter: `liteNodesTotal`

Type: unsigned integer

Description: Number of lite nodes

Parameter: `unmanagedNodesUp`

Type: unsigned integer

Description: Number of unmanaged nodes that are listed as up

Parameter: `unmanagedNodesDown`

Type: unsigned integer

Description: Number of unmanaged nodes that are listed as down

Parameter: `unmanagedNodesClosed`

Type: unsigned integer

Description: Number of unmanaged nodes that are listed as closed

Parameter: `unmanagedNodesTotal`

Type: unsigned integer

Description: Number of unmanaged nodes

Parameter: `devicesUp`

Type: unsigned integer

Description: Number of non-node devices that are listed as up

Parameter: `devicesDown`

Type: unsigned integer

Description: Number of non-node devices that are listed as down

Parameter: `devicesClosed`

Type: unsigned integer

Description: Number of non-node devices that are listed as closed

Parameter: `devicesTotal`

Type: unsigned integer

Description: Number of non-node devices

Parameter: `coresUp`

Type: unsigned integer

Description: Sum of all cores for nodes which are up

Parameter: `coresTotal`

Type: unsigned integer

Description: Sum of all cores for nodes which are up at one time

Parameter: `gpusUp`

Type: unsigned integer

Description: Sum of all GPUs for nodes which are up

Parameter: `gpusTotal`

Type: unsigned integer

Description: Sum of all GPUs for nodes which are up at one time

Parameter: `fpgasUp`

Type: unsigned integer

Description: Sum of all FPGAs for nodes which are up

Parameter: fpgasTotal

Type: unsigned integer

Description: Sum of all FPGAs for nodes which are up at one time

Parameter: disks

Type: list of GuiDiskUsage

Description: Number of disks

Parameter: workload

Type: list of GuiWorkload

Description: Workload information

Parameter: usersLoggedIn

Type: unsigned integer

Description: Number of logged in users on the active head node

Parameter: usersLoggedOut

Type: unsigned integer

Description: Number of logged out users on the active head node

Parameter: usersTotal

Type: unsigned integer

Description: Number of users known to the active head node

Parameter: memoryUsed

Type: unsigned integer

Description: Sum of used memory over all nodes

Parameter: memoryUnused

Type: unsigned integer

Description: Sum of unused memory over all nodes

Parameter: memoryTotal

Type: unsigned integer

Description: Sum of total memory over all nodes

Parameter: swapUsed

Type: unsigned integer

Description: Sum of used swap memory over all nodes

Parameter: swapUnused

Type: unsigned integer

Description: Sum of unused swap memory over all nodes

Parameter: swapTotal

Type: unsigned integer

Description: Sum of total swap over all nodes

Parameter: usageUser

Type: float

Description: Average user cpu usage over all nodes

Parameter: usageSystem

Type: float

Description: Average system cpu usage over all nodes

Parameter: usageIdle

Type: float

Description: Average idle cpu usage over all nodes

Parameter: usageOther

Type: float

Description: Percentage of cpu time spend on other operations

Parameter: phaseLoad

Type: float

Description: Phase load accross all APCs

Parameter: occupationRate

Type: float

Description: Formula: $\text{Average}\{\text{allnodes}\} (\min(\text{load}, \text{cores}) / \text{cores})$

Parameter: freeRate

Type: float

Description: Formula: $1 - \text{Average}\{\text{allnodes}\} (\min(\text{load}, \text{cores}) / \text{cores})$

5.2.201 GuiDiskUsage: Entity

parent: Entity

Parameter: refDeviceUniqueKey

Type: unsigned integer

Description: Device

Parameter: mountpoint

Type: string

Description: Mountpoint

Parameter: used

Type: unsigned integer

Description: Bytes in use on this device

Parameter: free

Type: unsigned integer

Description: Bytes free on this device

5.2.202 GuiFabricConfigurationPortmap: Entity

parent: Entity

Parameter: refFabricConfigurationUniqueKey

Type: unsigned integer

Description: FabricConfiguration

Parameter: state

Type: enum

Description: State

Parameter: name

Type: string

Description: Name

Parameter: switches

Type: list of GuiFabricSwitchOverview

Description: Switches

5.2.203 GuiFabricSwitchLed: Entity

parent: Entity

Parameter: port

Type: unsigned integer

Description: Port

Parameter: partition

Type: unsigned integer

Description: Partition

Parameter: neighbor

Type: unsigned integer

Description: Neighbor

Parameter: cableId

Type: string

Description: Cable ID

Parameter: linkUp

Type: boolean

Description: Link up

Parameter: present

Type: boolean

Description: Present

Parameter: leftColor

Type: enum

Description: Left side color

Parameter: leftBlink

Type: boolean

Description: Left side blinking led

Parameter: rightColor

Type: enum

Description: Left side color

Parameter: rightBlink

Type: boolean

Description: Left side blinking led

Parameter: direction

Type: enum

Description: Direction

Parameter: maxWidth

Type: unsigned integer

Description: Maximal width

Parameter: negotiatedWidth

Type: unsigned integer

Description: Negotiated width

Parameter: rate

Type: string

Description: Rate

5.2.204 GuiFabricSwitchOverview: Entity

parent: Entity

Parameter: refFabricSwitchUniqueKey

Type: unsigned integer

Description: FabricSwitch

Parameter: state

Type: enum

Description: State

Parameter: guid

Type: string

Description: GUID

Parameter: leds

Type: list of GuiFabricSwitchLed

Description: Leds

Parameter: ports

Type: list of GuiFabricSwitchPort

Description: Ports

5.2.205 GuiFabricSwitchPort: Entity

parent: Entity

Parameter: ports

Type: list of unsigned numbers

Description: Ports

Parameter: maxSpeed

Type: unsigned integer

Description: Maximal speed

Parameter: negotiatedSpeed

Type: unsigned integer

Description: Negotiated speed

Parameter: partition

Type: unsigned integer

Description: Partition

Parameter: status

Type: enum

Description: Status

Parameter: direction

Type: enum

Description: Direction

Parameter: ltssm

Type: enum

Description: Link Training and Status State Machine

Parameter: rate

Type: unsigned integer

Description: Rate

Parameter: configuredRate

Type: unsigned integer

Description: Configured rate

5.2.206 GuiGPU:Entity

parent: Entity

Parameter: refDeviceUniqueKey

Type: unsigned integer

Description: Device

Parameter: name

Type: string

Description: Name

Parameter: memoryUsed

Type: unsigned integer

Description: Memory used

Parameter: memoryFree

Type: unsigned integer

Description: Memory free

Parameter: utilization

Type: float

Description: GPU Utilization

Parameter: powerUsage

Type: float

Description: Power usage

Parameter: temperature

Type: float

Description: Temperature

Parameter: smClock

Type: float

Description: Streaming multiprocessor clock speed

Parameter: memoryClock

Type: float

Description: Memory clock speed

5.2.207 GuiJob:Entity

parent: Entity

Parameter: refWlmClusterUniqueKey

Type: unsigned integer

Description: WlmCluster

Parameter: `refJobQueueUniqueKey`

Type: unsigned integer

Description: Queue

Parameter: `jobID`

Type: string

Description: Job ID

Parameter: `name`

Type: string

Description: Name

Parameter: `user`

Type: string

Description: User

Parameter: `runtime`

Type: unsigned integer

Description: Runtime

5.2.208 `GuiKubeClusterOverview: Entity`

parent: Entity

Parameter: `refKubeClusterUniqueKey`

Type: unsigned integer

Description: KubeCluster

Parameter: `name`

Type: string

Description: Cluster Name

Parameter: `version`

Type: string

Description: Kubernetes Version

Parameter: `notes`

Type: string

Description: Notes

Parameter: `numNodes`

Type: unsigned integer

Description: Number of nodes

Parameter: `numNamespaces`

Type: unsigned integer

Description: Number of namespaces

Parameter: `numServices`

Type: unsigned integer

Description: Number of services

Parameter: numRcs

Type: unsigned integer

Description: Number of replication controllers

Parameter: numPvs

Type: unsigned integer

Description: Number of persistent volumes

Parameter: numPvcs

Type: unsigned integer

Description: Number of persistent volumes claims

Parameter: jobs

Type: list of JobInfo

Description: Jobs

Parameter: pods

Type: list of KubePodInfo

Description: Pods

5.2.209 GuiNetworkInterface: Entity

parent: Entity

Parameter: name

Type: string

Description: Interface name

Parameter: rx

Type: unsigned integer

Description: Number of bytes received since startup

Parameter: tx

Type: unsigned integer

Description: Number of bytes transmitted since startup

5.2.210 GuiNodeOverview: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: interfaces

Type: list of GuiNetworkInterface

Description: Detailed interface information

Parameter: disks

Type: list of GuiDiskUsage

Description: Detailed disk information

Parameter: jobs

Type: list of GuiJob

Description: Detailed job information

Parameter: gpus

Type: list of GuiGPU

Description: Detailed GPU information

Parameter: load1

Type: float

Description: Average system load over the last minute

Parameter: load5

Type: float

Description: Average system load over the last five minutes

Parameter: load15

Type: float

Description: Average system load over the last fifteen minutes

Parameter: uptime

Type: unsigned integer

Description: Uptime

Parameter: memoryUsed

Type: unsigned integer

Description: Memory used

Parameter: memoryUnused

Type: unsigned integer

Description: Memory unused

Parameter: memoryTotal

Type: unsigned integer

Description: Total memory

Parameter: swapUsed

Type: unsigned integer

Description: Swap memory used

Parameter: swapUnused

Type: unsigned integer

Description: Swap memory unused

Parameter: swapTotal

Type: unsigned integer

Description: Total swap memory

Parameter: wlmSlotsUsed

Type: unsigned integer

Description: WLM slots used

Parameter: wlmSlotsUnused

Type: unsigned integer

Description: WLM slots unused

Parameter: wlmSlotsTotal

Type: unsigned integer

Description: Total WLM slots

Parameter: usageUser

Type: float

Description: Percentage of cpu time spend on user processes

Parameter: usageSystem

Type: float

Description: Percentage of cpu time spend on system processes

Parameter: usageIdle

Type: float

Description: Percentage of cpu time spend in idle

Parameter: usageOther

Type: float

Description: Percentage of cpu time spend in non user/system/idle

Parameter: usageSoftIrq

Type: float

Description: Percentage of cpu time spend in soft irq

Parameter: usageIrq

Type: float

Description: Percentage of cpu time spend in irq

Parameter: usageNice

Type: float

Description: Percentage of cpu time spend in nice

Parameter: usageSteal

Type: float

Description: Percentage of cpu time spend in steal

Parameter: usageGuest

Type: float

Description: Percentage of cpu time spend in guest

Parameter: usageWait

Type: float

Description: Percentage of cpu time spend in wait

5.2.211 GuiNodeStatus: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: status

Type: DeviceStatus

Description: Device status

Parameter: load1

Type: float

Description: Average system load over the last minute

Parameter: load5

Type: float

Description: Average system load over the last five minutes

Parameter: load15

Type: float

Description: Average system load over the last fifteen minutes

Parameter: uptime

Type: unsigned integer

Description: Uptime

Parameter: memoryUsed

Type: unsigned integer

Description: Memory used

Parameter: swapUsed

Type: unsigned integer

Description: Swap memory used

Parameter: wlmSlotsUsed

Type: unsigned integer

Description: WLM slots used

Parameter: usageUser

Type: float

Description: Percentage of cpu time spend on user processes

Parameter: usageSystem

Type: float

Description: Percentage of cpu time spend on system processes

Parameter: usageIdle

Type: float

Description: Percentage of cpu time spend in idle

5.2.212 GuiPDUBank: Entity

parent: Entity

Parameter: bank

Type: unsigned integer

Description: Bank

Parameter: load

Type: float

Description: Load

5.2.213 GuiPDUOutlet: Entity

parent: Entity

Parameter: outlet

Type: unsigned integer

Description: Outlet

Parameter: status

Type: enum

Description: Status

Parameter: assigned

Type: list of unsigned numbers

Description: Assigned

5.2.214 GuiPDUOverview: Entity

parent: Entity

Parameter: refPowerDistributionUnitUniqueKey

Type: unsigned integer

Description: none

Parameter: model

Type: string

Description: none

Parameter: outlets

Type: list of GuiPDUOutlet

Description: none

Parameter: banks

Type: list of GuiPDUBank

Description: none

5.2.215 GuiSwitchOverview: Entity

parent: Entity

Parameter: refSwitchUniqueKey

Type: unsigned integer

Description: Switch

Parameter: model

Type: string

Description: Model

Parameter: ports

Type: list of GuiSwitchPort

Description: Ports

5.2.216 GuiSwitchPort: Entity

parent: Entity

Parameter: prt

Type: integer

Description: Port

Parameter: name

Type: string

Description: Name

Parameter: status

Type: string

Description: Status

Parameter: uplink

Type: boolean

Description: Uplink

Parameter: assigned

Type: unsigned integer

Description: Unique key of the device assigned to this port

Parameter: `detected`

Type: `string`

Description: List of MAC address detected on this port

Parameter: `speed`

Type: `unsigned integer`

Description: Speed

5.2.217 `GuiWorkload:Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Queue name

Parameter: `scheduler`

Type: `string`

Description: Scheduler

Parameter: `slots`

Type: `string`

Description: Slots

Parameter: `nodeKeys`

Type: `list of unsigned numbers`

Description: Node keys

Parameter: `nodes`

Type: `string`

Description: Nodes

Parameter: `running`

Type: `unsigned integer`

Description: Number of running jobs in this queue

Parameter: `queued`

Type: `unsigned integer`

Description: Number of pending jobs in this queue

Parameter: `error`

Type: `unsigned integer`

Description: Number of jobs ended in an error state

Parameter: `completed`

Type: `unsigned integer`

Description: Number of completed jobs

Parameter: `averageDuration`

Type: unsigned integer

Description: Average duration of jobs

Parameter: `estimatedDelay`

Type: unsigned integer

Description: Estimated delay for a new job to start

5.2.218 `HeadNodeRole: Role`

parent: `Role`

Parameter: `failoverId`

Type: unsigned integer

Description: *none*

Parameter: `disableAutomaticExports`

Type: boolean

Description: Disable creation of automatic filesystem exports

5.2.219 `HeadNode: Node`

parent: `Node`

5.2.220 `IBSwitch: Switch`

parent: `Switch`

Parameter: `guid`

Type: string

Description: The switch GUID

Parameter: `subnetManager`

Type: boolean

Description: Indicate the subnet manager is running

Parameter: `disableSNMP`

Type: boolean

Description: Disable SNMP calls

5.2.221 `IPCPerm: Entity`

parent: `Entity`

Parameter: `key`

Type: integer

Description: Message queue ID

Parameter: `mode`

Type: unsigned integer

Description: Access permissions

Parameter: uid

Type: integer

Description: Owner ID

Parameter: gid

Type: integer

Description: Owner group ID

Parameter: owner

Type: string

Description: Owner

Parameter: group

Type: string

Description: Group name

5.2.222 IPResource: BasicResource

parent: BasicResource

Parameter: ip

Type: IP

Description: IP

Parameter: networkDeviceName

Type: string

Description: The network device name to start this IP on. Leave blank to automatically determine based on IP.

Parameter: alias

Type: string

Description: The network device name alias

Parameter: timeout

Type: unsigned integer

Description: Timeout

5.2.223 JobInfoStatistics: Entity

parent: Entity

Parameter: refWlmClusterUniqueKey

Type: unsigned integer

Description: WlmCluster

Parameter: refJobQueueUniqueKey

Type: unsigned integer

Description: Queue

Parameter: user

Type: string

Description: none

Parameter: group

Type: string

Description: none

Parameter: account

Type: string

Description: none

Parameter: parentId

Type: string

Description: none

Parameter: intervalStart

Type: timestamp

Description: none

Parameter: intervalEnd

Type: timestamp

Description: none

Parameter: pending

Type: unsigned integer

Description: none

Parameter: running

Type: unsigned integer

Description: none

Parameter: finished

Type: unsigned integer

Description: none

Parameter: error

Type: unsigned integer

Description: none

Parameter: total

Type: unsigned integer

Description: none

Parameter: pendingTime

Type: unsigned integer

Description: *none*

Parameter: runningTime

Type: unsigned integer

Description: *none*

Parameter: finishedTime

Type: unsigned integer

Description: *none*

Parameter: errorTime

Type: unsigned integer

Description: *none*

Parameter: nodes

Type: unsigned integer

Description: *none*

Parameter: maxRunning

Type: unsigned integer

Description: *none*

5.2.224 JobInfo: Entity

parent: Entity

Parameter: refWlmClusterUniqueKey

Type: unsigned integer

Description: WlmCluster

Parameter: refJobQueueUniqueKey

Type: unsigned integer

Description: Queue

Parameter: jobId

Type: string

Description: Job ID

Parameter: jobName

Type: string

Description: Job name

Parameter: user

Type: string

Description: User name

Parameter: group

Type: string

Description: User group name

Parameter: `account`

Type: `string`

Description: Job account

Parameter: `parentId`

Type: `string`

Description: Parent ID

Parameter: `nodes`

Type: list of unsigned numbers

Description: List of job's nodes

Parameter: `cgroup`

Type: `string`

Description: Relative cgroup path

Parameter: `submitTime`

Type: `timestamp`

Description: Job submit time

Parameter: `startTime`

Type: `timestamp`

Description: Job start time

Parameter: `endTime`

Type: `timestamp`

Description: Job end time

Parameter: `persistent`

Type: `boolean`

Description: Whether job is persistent in DB or not

Parameter: `exitCode`

Type: `integer`

Description: Jobscrip exit code

Parameter: `state`

Type: `string`

Description: Job status

Parameter: `requestedCPUs`

Type: unsigned integer

Description: Requested CPUs

Parameter: `requestedCPUCores`

Type: unsigned integer

Description: Requested CPU cores

Parameter: requestedGPUs

Type: unsigned integer

Description: Requested GPU

Parameter: requestedMemory

Type: unsigned integer

Description: Requested memory

Parameter: requestedSlots

Type: unsigned integer

Description: Requested slots

Parameter: monitoring

Type: boolean

Description: Whether job still has monitoring data

Parameter: comment

Type: string

Description: Comment

5.2.225 JobQueuePlaceholder: Entity

parent: Entity

Parameter: queue

Type: string

Description: Name of queue

Parameter: baseNodeName

Type: string

Description: Placeholder node base name

Parameter: maxNodes

Type: unsigned integer

Description: Maximum number of nodes in queue

Parameter: templateNode

Type: reference to Node

Description: Node that will be used as a placeholder

5.2.226 JobQueueStat: Entity

parent: Entity

Parameter: name

Type: string

Description: Queue name

Parameter: `running`

Type: unsigned integer

Description: Running jobs

Parameter: `queued`

Type: unsigned integer

Description: Queued jobs

Parameter: `maxRunning`

Type: unsigned integer

Description: Maximum number of jobs that can run simultaneously

5.2.227 `JobQueue: Entity`

parent: Entity

Parameter: `name`

Type: string

Description: Name of queue

Parameter: `wlmCluster`

Type: reference to WlmCluster

Description: WlmCluster to which this node belongs

Parameter: `options`

Type: list of strings

Description: Additional parameters that will be passed to the WLM queue configuration

5.2.228 `Job: Entity`

parent: Entity

Parameter: `refWlmClusterUniqueKey`

Type: unsigned integer

Description: WlmCluster

Parameter: `refJobQueueUniqueKey`

Type: unsigned integer

Description: Queue name

Parameter: `jobID`

Type: string

Description: Job identifier

Parameter: `arrayID`

Type: string

Description: Job array identifier

Parameter: taskID

Type: string

Description: Job array task identifier(s)

Parameter: parentID

Type: string

Description: Job parent identifier

Parameter: jobname

Type: string

Description: Name of job

Parameter: username

Type: string

Description: Job owner name

Parameter: status

Type: string

Description: Current job status

Parameter: project

Type: string

Description: Project name

Parameter: priority

Type: string

Description: Job priority

Parameter: inqueue

Type: string

Description: Shows whether job has already been queued or not

Parameter: nodes

Type: list of strings

Description: Requested nodes

Parameter: cgroup

Type: string

Description: CGroup allocated for this job on all nodes

Parameter: rundirectory

Type: string

Description: Job work directory

Parameter: executable

Type: string

Description: File which is executed inside job script

Parameter: `arguments`

Type: `string`

Description: Arguments of executable file

Parameter: `stdinfile`

Type: `string`

Description: Standard input file

Parameter: `stdoutfile`

Type: `string`

Description: Standard output file

Parameter: `stderrfile`

Type: `string`

Description: Standard error file

Parameter: `submittime`

Type: `string`

Description: Job submission time

Parameter: `starttime`

Type: `string`

Description: Job start time (available when job is started)

Parameter: `endtime`

Type: `string`

Description: Job end time (available when job is finished or cancelled)

Parameter: `mailOptions`

Type: `string`

Description: Mail oprions

Parameter: `mailList`

Type: `string`

Description: Mail addresses

Parameter: `mailNotify`

Type: `boolean`

Description: Shows whether mail notification is requested or not

Parameter: `maxWallClock`

Type: `string`

Description: Maximum available running time

Parameter: `runWallClock`

Type: unsigned integer

Description: Running time

Parameter: `numberOfProcesses`

Type: unsigned integer

Description: Number of processes

Parameter: `memoryUse`

Type: unsigned integer

Description: Memory usage

Parameter: `scriptFile`

Type: string

Description: Job script file

Parameter: `numberOfNodes`

Type: unsigned integer

Description: Number of nodes

Parameter: `usergroup`

Type: string

Description: Job user group

Parameter: `commandLineInterpreter`

Type: string

Description: Command line interpreter

Parameter: `dependencies`

Type: list of strings

Description: Job dependencies

Parameter: `parallelEnvironment`

Type: string

Description: Parallel environment

Parameter: `account`

Type: string

Description: Account name

Parameter: `resourceList`

Type: list of strings

Description: List of requested resources

Parameter: `modules`

Type: list of strings

Description: Environment modules loaded for the script

Parameter: `environmentVariables`

Type: list of strings

Description: Additional environment variables

Parameter: `debug`

Type: boolean

Description: Debug mode (used when new job is submitted via CMDaemon API)

Parameter: `userdefined`

Type: list of strings

Description: User defined parameters

Parameter: `exitCode`

Type: integer

Description: Exit code of job

Parameter: `minMemPerNode`

Type: unsigned integer

Description: Minimum memory per node requested

Parameter: `comment`

Type: string

Description: Comment set by workload manager

Parameter: `placement`

Type: string

Description: Jobs are placed on nodes according to their place statements (useful for PBS, see 'man pbs_resources')

Parameter: `pendingReasons`

Type: list of strings

Description: List of pending reasons

Parameter: `requestedCPUs`

Type: unsigned integer

Description: Requested CPUs

Parameter: `requestedCPUCores`

Type: unsigned integer

Description: Requested CPU cores

Parameter: `requestedGPUs`

Type: unsigned integer

Description: Requested GPUs

Parameter: `requestedMemory`

Type: unsigned integer

Description: Requested memory

Parameter: requestedSlots

Type: unsigned integer

Description: Requested slots

5.2.229 JupyterHubConfig: Entity

parent: Entity

Parameter: key

Type: string

Description: Configuration key

Parameter: value

Type: string

Description: The value for the given configuration key, needs to be literal (include quotes for strings)

5.2.230 JupyterHubRole: Role

parent: Role

Parameter: version

Type: string

Description: JupyterHub version

Parameter: port

Type: unsigned integer

Description: Port for proxy (JupyterHub.port)

Parameter: hubPort

Type: unsigned integer

Description: Port for hub (JupyterHub.hub_port)

Parameter: hubIp

Type: string

Description: The ip address or hostname for the Hub process to bind to (JupyterHub.hub_ip)

Parameter: proxyApiUrl

Type: string

Description: The URL which the hub uses to connect to the proxy's API (c.ConfigurableHTTPProxy.api_url)

Parameter: dataFilesPath

Type: string

Description: The location of jupyterhub data files (JupyterHub.data_files_path)

Parameter: pamOpenSessions

Type: boolean

Description: Enable SSL communication with HTTPS (PAMAuthenticator.open_sessions)

Parameter: `ca`

Type: `string`

Description: Filename containing the PEM-encoded certificate used for the Certification authority (CA)

Parameter: `cakey`

Type: `string`

Description: Filename containing the corresponding PEM-encoded private key used for the Certification authority (CA)

Parameter: `cert`

Type: `string`

Description: Path to the ssl certificate file (JupyterHub.ssl_cert)

Parameter: `key`

Type: `string`

Description: Path to the ssl key file (JupyterHub.ssl_key)

Parameter: `adminUsers`

Type: `list of strings`

Description: User with administrator privileges (Authenticator.admin_users)

Parameter: `userForService`

Type: `string`

Description: User for running cm-jupyterhub service (defined as User in `/usr/lib/systemd/system/cm-jupyterhub.service`)

Parameter: `trustedDomains`

Type: `list of strings`

Description: Trusted domains to be included in JupyterHub certificates as Alt Subjects.

Parameter: `configs`

Type: `list of JupyterHubConfig`

Description: Configuration options JupyterHub

5.2.231 `KernelModule: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: The name of the kernel module.

Parameter: `parameters`

Type: `string`

Description: Options to be passed to the module.

5.2.232 `KeyValuePair: Entity`**parent:** Entity**Parameter:** key**Type:** string**Description:** none**Parameter:** value**Type:** string**Description:** none**Parameter:** onlydaemon**Type:** boolean**Description:** none**Parameter:** ispattern**Type:** boolean**Description:** none**Parameter:** priority**Type:** integer**Description:** none**5.2.233** `KeyValueSettings: Entity`**parent:** Entity**Parameter:** keyValues**Type:** list of strings**Description:** List of key=value pairs**5.2.234** `KubeAppEnvironment: Entity`**parent:** Entity**Parameter:** name**Type:** string**Description:** Name**Parameter:** value**Type:** string**Description:** Value**Parameter:** nodesEnvironment**Type:** boolean**Description:** Add variable to the nodes environment**5.2.235** `KubeAppGroup: Entity`**parent:** Entity**Parameter:** name

Type: string

Description: Object name

Parameter: applications

Type: list of KubeApp

Description: Kubernetes applications managed by cmdaemon

Parameter: enabled

Type: boolean

Description: Enable this application group

5.2.236 KubeApp: Entity

parent: Entity

Parameter: name

Type: string

Description: Object name

Parameter: format

Type: string

Description: Configuration format

Parameter: enabled

Type: boolean

Description: Enable this application

Parameter: config

Type: string

Description: Yaml or json configuration for the object

Parameter: extraEnvironment

Type: list of KubeAppEnvironment

Description: none

Parameter: excludeListSnippets

Type: list of ExcludeListSnippet

Description: none

Parameter: state

Type: integer

Description: none

5.2.237 KubeCluster: Entity

parent: Entity

Parameter: name

Type: string

Description: Name of the Kubernetes cluster

Parameter: `authorizationMode`

Type: list of strings

Description: Selects how to do authorization on the secure port

Parameter: `kubeConfig`

Type: string

Description: Path to a kubeconfig file, specifying how to authenticate to API server

Parameter: `kubeClientConfig`

Type: string

Description: Path to a kubeconfig file, specifying how to authenticate to API server

Parameter: `kubeConfigTemplate`

Type: string

Description: Template for system kubeconfig file

Parameter: `ca`

Type: string

Description: Filename containing the PEM-encoded certificate used for the Certification authority (CA)

Parameter: `cakey`

Type: string

Description: Filename containing the corresponding PEM-encoded private key used for the Certification authority (CA)

Parameter: `kubernetesCertificate`

Type: string

Description: File containing x509 Certificate used by the Kubelets

Parameter: `kubernetesKey`

Type: string

Description: File containing x509 private key used by the Kubelets

Parameter: `kubernetesClientCertificate`

Type: string

Description: File containing x509 Certificate used for the Kubelets

Parameter: `kubernetesClientKey`

Type: string

Description: File containing x509 private key used for the Kubelets

Parameter: `serviceAccountCertificate`

Type: string

Description: File containing x509 Certificate used Service Accounts

Parameter: `serviceAccountKey`

Type: `string`

Description: File containing x509 private key used for Service Accounts

Parameter: `apiAggregatorCertificate`

Type: `string`

Description: File containing x509 Certificate used Kube API Aggregator

Parameter: `apiAggregatorKey`

Type: `string`

Description: File containing x509 private key used for Kube API Aggregator

Parameter: `domain`

Type: `string`

Description: Domain name used by the DNS

Parameter: `etcdCluster`

Type: reference to `EtcdCluster`

Description: The Etcd cluster instance

Parameter: `etcdServers`

Type: list of strings

Description: List of etcd servers to watch (format: [http://host:port])

Parameter: `etcdPrefix`

Type: `string`

Description: The prefix for all resource paths in etcd

Parameter: `serviceNetwork`

Type: reference to `Network`

Description: Network where service cluster IPs will be assigned from (must not overlap with any IP ranges assigned to nodes for pods)

Parameter: `podNetwork`

Type: reference to `Network`

Description: Network where POD IPs will be assigned from

Parameter: `podNetworkNodeMask`

Type: `string`

Description: Pod Network mask size for node cidr in cluster.

Parameter: `internalNetwork`

Type: reference to `Network`

Description: Network to use to back the internal communications

Parameter: kubeDnsIp

Type: IP

Description: KubeDNS IP address

Parameter: kubernetesApiServer

Type: string

Description: Kubernetes API server address (format: [https://host:port])

Parameter: kubernetesApiServerProxyPort

Type: unsigned integer

Description: Kubernetes API server proxy port

Parameter: appGroups

Type: list of KubeAppGroup

Description: Kubernetes applications managed by cmdaemon

Parameter: labelSets

Type: list of KubeLabelSet

Description: Labels managed by cmdaemon

Parameter: notes

Type: string

Description: Notes

Parameter: trustedDomains

Type: list of strings

Description: Trusted domains to be included in Kubernetes related certificates as Alt Subjects.

Parameter: clientTypeKube

Type: unsigned integer

Description: client type in the CLIENT_TYPE_KUBERNETES range

Parameter: clientTypeKubeUsers

Type: unsigned integer

Description: client type in the CLIENT_TYPE_KUBERNETES_USERS range

Parameter: clientTypeKubeServiceAccounts

Type: unsigned integer

Description: client type in the CLIENT_TYPE_KUBE_SERVICEACCOUNTS range

Parameter: moduleFileTemplate

Type: string

Description: Template for system module file

Parameter: InitializationState

Type: enum

Description: Kube Cluster Initialization State

Parameter: users

Type: list of KubeUser

Description: Kubernetes users

5.2.238 KubeLabelSet: Entity

parent: Entity

Parameter: name

Type: string

Description: Object name

Parameter: labels

Type: list of strings

Description: Node labels

Parameter: nodes

Type: list of references to Node

Description: List of nodes belonging to this label set

Parameter: categories

Type: list of references to Category

Description: List of categories belonging to this label set

Parameter: overlays

Type: list of references to ConfigurationOverlay

Description: List of overlays belonging to this label set

5.2.239 KubeNodeLoad: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: cpu

Type: float

Description: CPU %

Parameter: mem

Type: float

Description: Memory % of total capacity

Parameter: pods

Type: float

Description: Pods % of maximum

5.2.240 KubePodController: Entity

parent: Entity

Parameter: name

Type: string

Description: Kubernetes pod controller name

Parameter: type

Type: string

Description: Kubernetes pod controller type

Parameter: kubeNamespace

Type: string

Description: Namespace name

Parameter: uid

Type: string

Description: Pod controller unique ID in Kubernetes

Parameter: startTime

Type: timestamp

Description: Pod controller start time

Parameter: creationTime

Type: timestamp

Description: Pod controller creation time

Parameter: resources

Type: list of strings

Description: List of requested (if pending) or allocated (if started) resources

Parameter: labels

Type: list of strings

Description: List of labels assigned to the controller object

Parameter: status

Type: string

Description: Current pod controller status

Parameter: reason

Type: string

Description: Pod controller status reason

Parameter: priority

Type: unsigned integer

Description: Workload priority

5.2.241 KubePodInfo: Entity**parent:** Entity**Parameter:** name**Type:** string**Description:** none**Parameter:** podNamespace**Type:** string**Description:** none**Parameter:** image**Type:** string**Description:** none**Parameter:** nodes**Type:** list of unsigned numbers**Description:** none**Parameter:** startTime**Type:** timestamp**Description:** none**Parameter:** labels**Type:** list of strings**Description:** none**Parameter:** status**Type:** string**Description:** none**Parameter:** reason**Type:** string**Description:** none**Parameter:** message**Type:** string**Description:** none**Parameter:** ip**Type:** IP**Description:** none**Parameter:** replicaSets**Type:** list of strings**Description:** none

Parameter: `ready`

Type: `boolean`

Description: *none*

Parameter: `volumes`

Type: `list of strings`

Description: *none*

Parameter: `containers`

Type: `list of ContainerInfo`

Description: *none*

Parameter: `creationTime`

Type: `timestamp`

Description: *none*

Parameter: `controllerId`

Type: `string`

Description: *none*

Parameter: `resources`

Type: `list of strings`

Description: List of requested (if pending) or allocated (if started) resources

5.2.242 `KubernetesApiServerProxyRole: BaseNginxRole`

parent: `BaseNginxRole`

Parameter: `kubeClusters`

Type: `list of references to KubeCluster`

Description: The Kubernetes cluster instances (pointers)

5.2.243 `KubernetesApiServerRole: Role`

parent: `Role`

Parameter: `kubeCluster`

Type: `reference to KubeCluster`

Description: The Kubernetes cluster instance (pointer)

Parameter: `insecurePort`

Type: `unsigned integer`

Description: The port on which to serve unsecured, unauthenticated access.

Parameter: `securePort`

Type: `unsigned integer`

Description: The port on which to serve HTTPS with authentication and authorization (if 0, don't serve HTTPS at all)

Parameter: `advertiseAddress`

Type: IP

Description: The IP address on which to advertise the apiserver to members of the cluster. When set to 0.0.0.0 the IP from the Headnode's Management Network will be used.

Parameter: insecureBindAddress

Type: IP

Description: IP address to serve on (set to 0.0.0.0 for all interfaces)

Parameter: secureBindAddress

Type: IP

Description: The IP address on which to serve the read only and secure ports

Parameter: allowedPrivileged

Type: boolean

Description: If true, allow privileged containers

Parameter: admissionControl

Type: list of strings

Description: Ordered list of plug-ins to do admission control of resources into cluster

Parameter: eventTtl

Type: string

Description: Amount of time to retain events

Parameter: kubeletTimeout

Type: string

Description: Kubelet connections timeout

Parameter: logLevel

Type: unsigned integer

Description: Log level

Parameter: logToStdErr

Type: boolean

Description: Logging to stderr means we get it in the systemd journal

Parameter: options

Type: list of strings

Description: Additional parameters for kube-apiserver daemon

5.2.244 KubernetesControllerRole: Role

parent: Role

Parameter: kubeCluster

Type: reference to KubeCluster

Description: The Kubernetes cluster instance (pointer)

Parameter: address

Type: IP

Description: IP address to serve on (set to 0.0.0.0 for all interfaces)

Parameter: port

Type: unsigned integer

Description: Port that the controller-manager runs on

Parameter: concurrentEndpointSyncs

Type: unsigned integer

Description: Number of endpoint syncing operations that will be done concurrently

Parameter: namespaceSyncPeriod

Type: string

Description: Period for syncing namespace life-cycle updates

Parameter: nodeMonitorGracePeriod

Type: string

Description: Amount of time which we allow running Node to be unresponsive before marking it unhealthy

Parameter: nodeMonitorPeriod

Type: string

Description: Period for syncing NodeStatus in NodeController

Parameter: nodeStartupGracePeriod

Type: string

Description: Amount of time which we allow starting Node to be unresponsive before marking it unhealthy

Parameter: nodeSyncPeriod

Type: string

Description: Period for syncing nodes from cloudprovider

Parameter: podEvictionTimeout

Type: string

Description: Grace period for deleting pods on failed nodes

Parameter: pvClaimBinderSyncPeriod

Type: string

Description: Period for syncing persistent volumes and persistent volume claims

Parameter: registerRetryCount

Type: string

Description: Number of retries for initial node registration

Parameter: resourceQuotaSyncPeriod

Type: string

Description: Period for syncing quota usage status in the system

Parameter: `logLevel`

Type: unsigned integer

Description: Log level

Parameter: `logToStdErr`

Type: boolean

Description: Logging to stderr means we get it in the systemd journal

Parameter: `options`

Type: list of strings

Description: Additional parameters for kube-controller-manager daemon

Parameter: `clusterSigningCertFile`

Type: string

Description: Filename containing a PEM-encoded X509 CA certificate used to issue cluster-scoped certificates. (leave empty to use the value of CA)

Parameter: `clusterSigningKeyFile`

Type: string

Description: Filename containing a PEM-encoded RSA or ECDSA private key used to sign cluster-scoped certificates. (leave empty to use the value of CA Key)

Parameter: `useServiceAccountCredentials`

Type: boolean

Description: Flag to enable or disable use of Service Account Credentials

Parameter: `allocateNodeCidrs`

Type: boolean

Description: Allocate node cidr in cluster using Pod Network and Node Mask size defined in Kubernetes Cluster Object

Parameter: `kubeConfig`

Type: string

Description: Path to a kubeconfig file, specifying how to authenticate to API server.

Parameter: `kubernetesCertificate`

Type: string

Description: File containing x509 Certificate used by Kubernetes Controller Manager

Parameter: `kubernetesKey`

Type: string

Description: File containing x509 private key used by Kubernetes Controller Manager

5.2.245 `KubernetesNodeRole: Role`

parent: `Role`

Parameter: `kubeCluster`

Type: reference to `KubeCluster`

Description: The Kubernetes cluster instance (pointer)

Parameter: `address`

Type: IP

Description: IP address to serve on (set to 0.0.0.0 for all interfaces)

Parameter: `kubeletPort`

Type: unsigned integer

Description: Port that the Node's http service runs on

Parameter: `spool`

Type: string

Description: Directory path for managing kubelet files

Parameter: `manifestsPath`

Type: string

Description: Path to the config file or directory of files

Parameter: `enableServer`

Type: boolean

Description: Enable Kubelet's server

Parameter: `networkPlugin`

Type: string

Description: The name of the network plugin to be invoked for various events in kubelet/pod lifecycle

Parameter: `cniPluginBinariesPath`

Type: string

Description: The full path of the directory in which to search for CNI plugin binaries.

Parameter: `hostnameOverride`

Type: string

Description: If non-empty, will use this string as identification instead of the actual hostname

Parameter: `cgroupRoot`

Type: string

Description: Optional root cgroup to use for pods

Parameter: `containerRuntime`

Type: string

Description: The container runtime to use

Parameter: `containerRuntimeEndpoint`

Type: `string`

Description: The endpoint of remote runtime service

Parameter: `containerRuntimeService`

Type: `string`

Description: The container runtime systemd service

Parameter: `resourceContainer`

Type: `string`

Description: Absolute name of the resource-only container to create and run the Kubelet in

Parameter: `allowedPrivileged`

Type: `boolean`

Description: If true, allow privileged containers

Parameter: `registerOnStart`

Type: `boolean`

Description: Register the node with the apiserver

Parameter: `maxPods`

Type: `unsigned integer`

Description: Number of Pods that can run on this node

Parameter: `evictionSoft`

Type: `list of strings`

Description: Soft eviction constraints

Parameter: `evictionSoftGrace`

Type: `list of strings`

Description: Soft eviction grace period

Parameter: `evictionMaxPodGrace`

Type: `unsigned integer`

Description: Maximum allowed grace period (in sec) allowed to terminated pods

Parameter: `evictionHard`

Type: `list of strings`

Description: Hard eviction constraints

Parameter: `evictionMinReclaim`

Type: `list of strings`

Description: Minimum amount of resources reclaimed in an eviction

Parameter: `runOnce`

Type: `boolean`

Description: If true, exit after spawning pods from local manifests or remote urls

Parameter: `fileCheckFrequency`

Type: string

Description: Duration between checking config files for new data

Parameter: `httpCheckFrequency`

Type: string

Description: Duration between checking http for new data

Parameter: `nodeStatusUpdateFrequency`

Type: string

Description: Duration between kubelet posts of node status to master

Parameter: `syncFrequency`

Type: string

Description: Max period between synchronizing running containers and config

Parameter: `streamingConnectionIdleTimeout`

Type: string

Description: Maximum time a streaming connection can be idle before the connection is automatically closed

Parameter: `imageGcHighThreshold`

Type: unsigned integer

Description: The percent of disk usage after which image garbage collection is always run

Parameter: `imageGcLowThreshold`

Type: unsigned integer

Description: The percent of disk usage before which image garbage collection is never run

Parameter: `oomScoreAdjust`

Type: integer

Description: The `oom_score_adj` value for kubelet process

Parameter: `logLevel`

Type: unsigned integer

Description: Log level

Parameter: `logToStdErr`

Type: boolean

Description: Logging to stderr means we get it in the systemd journal

Parameter: `options`

Type: list of strings

Description: Additional parameters for kubelet daemon

Parameter: kubeConfig

Type: string

Description: Path to a kubeconfig file, specifying how to authenticate to API server

5.2.246 KubernetesProxyRole: Role

parent: Role

Parameter: kubeCluster

Type: reference to KubeCluster

Description: The Kubernetes cluster instance (pointer)

Parameter: address

Type: IP

Description: IP address to serve on (set to 0.0.0.0 for all interfaces)

Parameter: proxyPortRangeStart

Type: unsigned integer

Description: Range of host ports (format: 'beginPort-endPort', inclusive) that may be consumed in order to proxy service traffic

Parameter: proxyPortRangeEnd

Type: unsigned integer

Description: Range of host ports (format: 'beginPort-endPort', inclusive) that may be consumed in order to proxy service traffic

Parameter: masqueradeAll

Type: boolean

Description: If using the pure iptables proxy, SNAT everything

Parameter: healthCheckAddress

Type: IP

Description: The IP address for the health check server to serve on

Parameter: healthCheckPort

Type: unsigned integer

Description: The port to bind the health check server (use 0 to disable)

Parameter: oomScoreAdjust

Type: integer

Description: The oom_score_adj value for kube-proxy process

Parameter: kubeConfig

Type: string

Description: Path to a kubeconfig file, specifying how to authenticate to API server.

Parameter: kubernetesCertificate

Type: string

Description: File containing x509 Certificate used by kube-proxy

Parameter: `kubernetesKey`

Type: string

Description: File containing x509 private key used by Kubernetes API server

5.2.247 `KubernetesSchedulerRole: Role`

parent: Role

Parameter: `kubeCluster`

Type: reference to KubeCluster

Description: The Kubernetes cluster instance (pointer)

Parameter: `address`

Type: IP

Description: IP address to serve on (set to 0.0.0.0 for all interfaces)

Parameter: `port`

Type: unsigned integer

Description: Port that the scheduler's http service runs on

Parameter: `algorithmProvider`

Type: string

Description: The scheduling algorithm provider to use

Parameter: `policyConfig`

Type: string

Description: File with scheduler policy configuration

Parameter: `logLevel`

Type: unsigned integer

Description: Log level

Parameter: `logToStdErr`

Type: boolean

Description: Logging to stderr means we get it in the systemd journal

Parameter: `options`

Type: list of strings

Description: Additional parameters for kube-scheduler daemon

Parameter: `kubeConfig`

Type: string

Description: Path to a kubeconfig file, specifying how to authenticate to API server.

Parameter: `kubernetesCertificate`

Type: string

Description: File containing x509 Certificate used by Kubernetes Scheduler

Parameter: `kubernetesKey`

Type: `string`

Description: File containing x509 private key used by Kubernetes Scheduler

5.2.248 `KubeUser: Entity`

parent: `Entity`

Parameter: `userName`

Type: `string`

Description: User name (not user ID)

Parameter: `manageKubeConfig`

Type: `boolean`

Description: Write a kubeconfig file for this user

5.2.249 `LabeledEntity: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Name

Parameter: `introductionTime`

Type: `timestamp`

Description: Introduction time

Parameter: `lastUsedTime`

Type: `timestamp`

Description: Time entity was last used

Parameter: `permanent`

Type: `boolean`

Description: Do not allow automatic deletion

5.2.250 `LdapServerRole: Role`

parent: `Role`

Parameter: `nodegroups`

Type: list of references to `NodeGroup`

Description: List of node groups which can boot from this node

Parameter: `categories`

Type: list of references to `Category`

Description: List of categories which can boot from this node

Parameter: `racks`

Type: list of references to `Rack`

Description: List of racks which can boot from this node

5.2.251 LicenseInfo: Entity

parent: Entity

Parameter: refPartitionUniqueKey

Type: unsigned integer

Description: Partition

Parameter: macAddress

Type: string

Description: MAC address linked to the license

Parameter: licensedNodes

Type: unsigned integer

Description: Number of pre-paid nodes

Parameter: licensedAcceleratorNodes

Type: integer

Description: Number of licensed nodes with accelerators

Parameter: licensedBurstNodes

Type: integer

Description: Number of ondemand nodes

Parameter: version

Type: string

Description: Version

Parameter: edition

Type: string

Description: Edition

Parameter: startTime

Type: timestamp

Description: Time from which the license is active

Parameter: endTime

Type: timestamp

Description: Time at which the license stops being valid

Parameter: serial

Type: integer

Description: Serial

Parameter: licensee

Type: string

Description: Licensee

Parameter: `nodeCount`

Type: unsigned integer

Description: Nodes count with a MAC / cloud-identifier set

Parameter: `burstNodeCount`

Type: unsigned integer

Description: Bursted nodes count

Parameter: `acceleratorNodeCount`

Type: unsigned integer

Description: Nodes with one or more accelerators

Parameter: `accountingAndReporting`

Type: boolean

Description: Accounting and reporting enabled/disabled

Parameter: `edgeSites`

Type: boolean

Description: Edge sites enabled/disabled

Parameter: `message`

Type: string

Description: License count message

Parameter: `licenseType`

Type: string

Description: License type

5.2.252 `LiteMonitoredEntity: Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: *none*

Parameter: `types`

Type: list of strings

Description: *none*

Parameter: `resources`

Type: list of strings

Description: *none*

Parameter: `disabled`

Type: boolean

Description: *none*

5.2.253 LiteMonitoringMeasurable: Entity

parent: Entity

Parameter: producer

Type: unsigned integer

Description: *none*

Parameter: name

Type: string

Description: *none*

Parameter: parameter

Type: string

Description: *none*

Parameter: kind

Type: string

Description: *none*

Parameter: disabled

Type: boolean

Description: *none*

Parameter: cumulative

Type: boolean

Description: *none*

5.2.254 LiteNode: Device

parent: Device

Parameter: ip

Type: IP

Description: Ip address

Parameter: network

Type: reference to Network or None

Description: Network to which this switch is connected

Parameter: additionalHostnames

Type: list of strings

Description: List of additional hostnames that should resolve to the interfaces IP address

5.2.255 LSFBBaseJobQueueStat: JobQueueStat

parent: JobQueueStat

Parameter: status

Type: string

Description: Queue status

Parameter: priority

Type: unsigned integer

Description: Queue priority

Parameter: njobs

Type: unsigned integer

Description: Number of all jobs in queue

Parameter: suspended

Type: unsigned integer

Description: Number of suspended jobs in queue

5.2.256 LSFBaseJobQueue: JobQueue

parent: JobQueue

Parameter: administrators

Type: string

Description: List of queue administrators.

Parameter: corelimit

Type: unsigned integer

Description: The per-process core file size limit (in KB) for all of the processes belonging to a job from this queue.

Parameter: cpulimit

Type: string

Description: Maximum normalized CPU time and optionally, the default normalized CPU time allowed for all processes of a job running in this queue; value format: [default_limit] maximum_limit.

Parameter: chkPnt

Type: string

Description: Enables automatic checkpointing; value format: dir [period], where dir is the directory where the checkpoint files are created (do not use environment variables); period is the checkpoint period in minutes.

Parameter: datalimit

Type: unsigned integer

Description: The per-process data segment size limit (in KB) for all of the processes belonging to a job from this queue.

Parameter: description

Type: string

Description: Description of the queue that will be displayed by 'bqueues -l'

Parameter: default_host_spec

Type: string

Description: The default CPU time normalization host for the queue.

Parameter: `dispatch_window`

Type: string

Description: The time windows in which jobs from this queue are dispatched.

Parameter: `exclusive`

Type: string

Description: If Y, specifies an exclusive queue. Jobs submitted to an exclusive queue with 'bsub -x' will only be despatched to a host that has no other LSF jobs running.

Parameter: `filelimit`

Type: unsigned integer

Description: The per-process file size limit (in KB) for all of the processes belonging to a job from this queue.

Parameter: `hjob_limit`

Type: unsigned integer

Description: Maximum number of job slots that this queue can use on any host.

Parameter: `hosts`

Type: string

Description: A space-separated list of hosts, host groups, and host partitions on which jobs from this queue can be run.

Parameter: `ignore_deadline`

Type: string

Description: If Y, disables deadline constraint scheduling (starts all jobs regardless of deadline constraints).

Parameter: `interactive`

Type: string

Description: Causes the queue to reject interactive batch jobs (NO) or accept nothing but interactive batch jobs (ONLY). Interactive batch jobs are submitted via 'bsub -I'.

Parameter: `job_accept_interval`

Type: unsigned integer

Description: The number of dispatch turns to wait after dispatching a job to a host, before dispatching a second job to the same host.

Parameter: `job_controls`

Type: string

Description: Changes the behaviour of the SUSPEND, RESUME, and TERMINATE actions.

Parameter: `pre_post_exec_user`

Type: string

Description: Username for prolog and epilog execution.

Parameter: `prolog`

Type: `string`

Description: Path to prolog script (`pre_exec`).

Parameter: `epilog`

Type: `string`

Description: Path to epilog script (`post_exec`).

Parameter: `hostProlog`

Type: `string`

Description: Path to per host prolog script (`host_pre_exec`).

Parameter: `hostEpilog`

Type: `string`

Description: Path to per host epilog script (`host_post_exec`).

Parameter: `job_starter`

Type: `string`

Description: Creates a specific environment for submitted jobs prior to execution.

Parameter: `load_index`

Type: `string`

Description: Scheduling and suspending thresholds for the specified dynamic load index.

Parameter: `memlimit`

Type: `string`

Description: The per-process memory resident set size limit (in KB) for all of the processes belonging to a job from this queue. Format is '[default_limit] maximum_limit'.

Parameter: `mig`

Type: unsigned integer

Description: Enables automatic job migration and specifies the migration threshold, in minutes.

Parameter: `new_job_sched_delay`

Type: unsigned integer

Description: The maximum or minimum length of time that a new job waits before being dispatched; the behavior depends on whether the delay period specified is longer or shorter than a regular dispatch interval (`MBD_SLEEP_TIME` in `lsb.params`, 60 seconds by default).

Parameter: `nice`

Type: unsigned integer

Description: Adjusts the Unix scheduling priority at which jobs from this queue execute.

Parameter: `pjob_limit`

Type: unsigned integer

Description: The per-processor job slot limit for the queue.

Parameter: `processlimit`

Type: `string`

Description: Limits the number of concurrent processes that can be part of a job.

Parameter: `proclimit`

Type: `string`

Description: Limits the number of processors that can be allocated to the job.

Parameter: `priority`

Type: `unsigned integer`

Description: Queue priority.

Parameter: `qjob_limit`

Type: `unsigned integer`

Description: Job slot limit for the queue. Total number of job slots this queue can use.

Parameter: `rerunnable`

Type: `string`

Description: If yes, enables automatic job rerun (restart).

Parameter: `require_exit_values`

Type: `string`

Description: The exit codes that will cause the job to be requeued.

Parameter: `res_req`

Type: `string`

Description: Resource requirements used to determine eligible hosts.

Parameter: `resume_cond`

Type: `string`

Description: Use the select section of the resource requirement string to specify load thresholds. All other sections are ignored.

Parameter: `run_window`

Type: `string`

Description: Time period during which jobs in the queue are allowed to run.

Parameter: `runlimit`

Type: `string`

Description: The maximum run limit and optionally the default run limit. Value format: `[default_limit] maximum_limit`.

Parameter: `slot_reserve`

Type: `unsigned integer`

Description: Enables processor reservation and specifies the number of dispatch turns over which a parallel job can reserve job slots.

Parameter: `stacklimit`

Type: unsigned integer

Description: The per-process stack segment size limit (in KB) for all of the processes belonging to a job from this queue.

Parameter: `stop_cond`

Type: string

Description: Use the select section of the resource requirement string to specify load thresholds. All other sections are ignored.

Parameter: `swaplimit`

Type: unsigned integer

Description: The amount of total virtual memory limit (in KB) for a job from this queue.

Parameter: `terminate_when`

Type: string

Description: Configures the queue to invoke the TERMINATE action instead of the SUSPEND action in the specified circumstance.

Parameter: `ujob_limit`

Type: unsigned integer

Description: The per-user job slot limit for the queue. Maximum number of slots that each user can use in this queue.

Parameter: `users`

Type: string

Description: A list of users or user groups that can submit jobs to this queue. Use the reserved word all to specify all users.

Parameter: `r15s`

Type: string

Description: Built-in load index: run queue length (15 sec average).

Parameter: `r1m`

Type: string

Description: Built-in load index: run queue length (1 min average).

Parameter: `r15m`

Type: string

Description: Built-in load index: run queue length (15 min average).

Parameter: `it`

Type: string

Description: Built-in load index: idle time.

Parameter: `io`

Type: string

Description: Built-in load index: disk I/O.

Parameter: `ut`

Type: string

Description: Built-in load index: CPU utilization.

Parameter: `mem`

Type: string

Description: Built-in load index: available memory (in MB).

Parameter: `pg`

Type: string

Description: Built-in load index: pages in + pages out.

Parameter: `tmp`

Type: string

Description: Built-in load index: available space in temporary file system (MB).

Parameter: `swp`

Type: string

Description: Built-in load index: available swap space (in MB).

Parameter: `ls`

Type: string

Description: Built-in load index.

5.2.257 LSFBaseJob: Job

parent: Job

5.2.258 LSFGroupsSettings: WlmCgroupsSettings

parent: WlmCgroupsSettings

Parameter: `resourceEnforce`

Type: list of strings

Description: Controls resource enforcement through the Linux cgroup memory and cpuset subsystem on Linux systems with cgroup support (LSB_RESOURCE_ENFORCE)

Parameter: `processTracking`

Type: boolean

Description: Enable this parameter to track processes based on job control functions such as termination, suspension, resume and other signaling, on Linux systems which support cgroups freezer subsystem (LSF_PROCESS_TRACKING)

Parameter: `linuxCgroupAccounting`

Type: boolean

Description: Enable this parameter to track processes based on CPU and memory accounting for Linux systems that support cgroup's memory and cpuacct subsystems (LSF_LINUX_CGROUP_ACCT)

Parameter: jobCgroupTemplate

Type: string

Description: Template for job cgroup path (\$CLUSTER will be replaced to LSF cluster name, \$JOBID will be replaced to job id)

5.2.259 LSFClientRole: LSFRole

parent: LSFRole

Parameter: slots

Type: string

Description: Number of slots available on this node/category

Parameter: queues

Type: list of references to LSFJobQueue

Description: Queues this node/nodes in this category belongs to

Parameter: allQueues

Type: boolean

Description: When set, the role will provide all available queues (the queues property will then be ignored)

Parameter: gpus

Type: unsigned integer

Description: Number of gpus

Parameter: gpuDevices

Type: list of strings

Description: /dev/* available to workload management

Parameter: server

Type: boolean

Description: Is LSF server (can run jobs)

Parameter: hostModel

Type: string

Description: Host model (possible values are defined in lsf.shared)

Parameter: hostType

Type: string

Description: Host type (possible values are defined in lsf.shared)

Parameter: nodeCustomizations

Type: list of WlmNodeCustomizationEntry

Description: LSF node custom properties

5.2.260 LSFJobQueueStat: LSFBaseJobQueueStat**parent:** LSFBaseJobQueueStat**5.2.261 LSFJobQueue: LSFBaseJobQueue****parent:** LSFBaseJobQueue**Parameter:** fairshare**Type:** string**Description:** Fairshare scheduling**Parameter:** backfill**Type:** string**Description:** Backfill scheduling**Parameter:** preemption**Type:** string**Description:** Preemption scheduling**Parameter:** defaultQueue**Type:** boolean**Description:** Specifies the queue which is to accept jobs when no queue is requested**5.2.262 LSFJob: LSFBaseJob****parent:** LSFBaseJob**5.2.263 LSFRole: Role****parent:** Role**Parameter:** wlmCluster**Type:** reference to LSFWlmCluster**Description:** WLM cluster link to this WLM role**5.2.264 LSFServerRole: LSFRole****parent:** LSFRole**Parameter:** externalServer**Type:** boolean**Description:** LSF server daemons are running on some external machine**5.2.265 LSFSubmitRole: WlmSubmitRole****parent:** WlmSubmitRole**Parameter:** lsfWlmClusters**Type:** list of references to LSFWlmCluster**Description:** List of LSF clusters which the role belongs to**Parameter:** hostType**Type:** string**Description:** Host type (possible values are defined in lsf.shared)

5.2.266 LSFwlmCluster: WlmCluster**parent:** WlmCluster**Parameter:** version**Type:** string**Description:** Major LSF version**Parameter:** prefix**Type:** string**Description:** LSF installation directory**Parameter:** var**Type:** string**Description:** Var directory location**Parameter:** localVar**Type:** string**Description:** Local var directory location**Parameter:** logDir**Type:** string**Description:** Logging directory location (LSF_LOGDIR in lsf.conf)**Parameter:** dynamicCloudNodes**Type:** boolean**Description:** Cloud nodes are added dynamically to LSF**Parameter:** placeholders**Type:** list of JobQueuePlaceholder**Description:** Job queue node placeholders mode**Parameter:** cgroups**Type:** LSFCgroupsSettings**Description:** Submode containing LSF related cgroups settings**Parameter:** doBackups**Type:** boolean**Description:** Backup configuration file before update**Parameter:** gpuAutoconfig**Type:** boolean**Description:** Enable GPU autodetection (LSF_GPU_AUTOCONFIG in lsf.conf)**Parameter:** gpuNewSyntax**Type:** boolean**Description:** Enable new GPU request syntax (LSB_GPU_NEW_SYNTAX in lsf.conf)

Parameter: `dcgmPort`

Type: unsigned integer

Description: Enable DCGM features and specifies the port number that LSF uses to communicate with the DCGM daemon (0 for disabled)

Parameter: `unitForLimits`

Type: string

Description: Enables scaling of large units in the resource usage limits (LSF_UNIT_FOR_LIMITS in lsf.conf)

Parameter: `noQueueHostsString`

Type: string

Description: String that is used to replace empty nodes list for a queue

Parameter: `enableEgo`

Type: boolean

Description: Enable EGO functionality (LSF_ENABLE_EGO in lsf.conf)

Parameter: `dynamicHostWaitTime`

Type: unsigned integer

Description: Defines the length of time in seconds that a dynamic host awaits communicating with the master host LIM to either add the host to the cluster or to shut down any running daemons if the host is not added successfully. Note that the time will be truncated to the minute (LSF_DYNAMIC_HOST_WAIT_TIME in lsf.conf)

Parameter: `hostAddressRange`

Type: string

Description: Identifies the range of IP addresses that are allowed to be LSF hosts that can be dynamically added to or removed from the cluster (LSF_HOST_ADDR_RANGE in lsf.conf)

Parameter: `manageMIG`

Type: boolean

Description: enable dynamic MIG scheduling (LSF_MANAGE_MIG in lsf.conf)

5.2.267 `MemoryInfo:Entity`

parent: `Entity`

Parameter: `IDs`

Type: list of strings

Description: IDs

Parameter: `locations`

Type: list of strings

Description: Location

Parameter: `speed`

Type: unsigned integer

Description: Speed

Parameter: size

Type: unsigned integer

Description: Size

Parameter: description

Type: string

Description: Description

5.2.268 MIGInformation:Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: gpuId

Type: unsigned integer

Description: The hardware GPU identifier

Parameter: name

Type: string

Description: none

Parameter: profileId

Type: unsigned integer

Description: none

Parameter: instanceId

Type: unsigned integer

Description: none

Parameter: placementStart

Type: unsigned integer

Description: none

Parameter: placementSize

Type: unsigned integer

Description: none

Parameter: memory

Type: unsigned integer

Description: none

Parameter: P2P

Type: boolean

Description: *none*

Parameter: SM

Type: unsigned integer

Description: *none*

Parameter: CE

Type: unsigned integer

Description: *none*

Parameter: DEC

Type: unsigned integer

Description: *none*

Parameter: JPEG

Type: unsigned integer

Description: *none*

Parameter: ENC

Type: unsigned integer

Description: *none*

Parameter: OFA

Type: unsigned integer

Description: *none*

5.2.269 MonitoringActionRunData: Entity

parent: Entity

Parameter: target

Type: unsigned integer

Description: Target node

Parameter: info

Type: string

Description: Extra information

Parameter: env

Type: list of strings

Description: Environment

5.2.270 MonitoringAction: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: `runOn`

Type: `enum`

Description: Run the action on

Parameter: `allowedTime`

Type: `string`

Description: Sets time interval during which action is allowed to be executed

Parameter: `disable`

Type: `boolean`

Description: Disable

Parameter: `suppressedByGoingDown`

Type: `boolean`

Description: Suppress running action if device is going down

5.2.271 `MonitoringCacheSubSystemInfo: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Name

Parameter: `queued`

Type: `unsigned integer`

Description: Number of samples ready for delivery

Parameter: `pickup`

Type: `unsigned integer`

Description: Number of times data has been picked up

Parameter: `delivered`

Type: `unsigned integer`

Description: Number of samples delivered the last pick up

Parameter: `handled`

Type: `unsigned integer`

Description: Total number of samples handled

5.2.272 `MonitoringCategoryListExecutionFilter: MonitoringExecutionFilter`

parent: `MonitoringExecutionFilter`

Parameter: `categories`

Type: list of references to `Category`

Description: List of categories belonging to this group

5.2.273 MonitoringCategoryListExecutionMultiplexer: MonitoringExecutionMultiplexer

parent: MonitoringExecutionMultiplexer

Parameter: categories

Type: list of references to Category

Description: List of categories belonging to this group

5.2.274 MonitoringCompareExpression: MonitoringExpression

parent: MonitoringExpression

Parameter: entities

Type: string

Description: Entities matching the regex, leave empty for all

Parameter: measurables

Type: string

Description: Measurables matching the regex, leave empty for all

Parameter: parameters

Type: string

Description: Parameters matching the regex, leave empty for all

Parameter: op

Type: enum

Description: Operator

Parameter: grouping

Type: enum

Description: Method to group all matching entity measurable parameter

Parameter: value

Type: string

Description: Value

Parameter: useRaw

Type: boolean

Description: Use raw data instead of rate for cumulative metrics

Parameter: code

Type: string

Description: Lua code

5.2.275 MonitoringConsolidator: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: disabled

Type: boolean

Description: Disable, consolidator for all entities. Do not throw away existing data.

Parameter: consolidators

Type: list of Consolidator

Description: Consolidators

5.2.276 MonitoringDataCacheSubSystemInfo: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: size

Type: unsigned integer

Description: First plot request

Parameter: updates

Type: unsigned integer

Description: Last plot request

Parameter: requests

Type: unsigned integer

Description: Number of plot requests

5.2.277 MonitoringDataProducerAggregateNode: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

Parameter: maxSampleAge

Type: float

Description: Maximal age of node sample to contribute

Parameter: excludeNodes

Type: list of references to Node

Description: List of nodes to exclude from the total

Parameter: excludeCategories

Type: list of references to Category

Description: List of node groups to exclude from the total

Parameter: excludeNodeGroups

Type: list of references to NodeGroup

Description: List of node groups to exclude from the total

5.2.278 MonitoringDataProducerAggregatePDU: MonitoringDataProducerInternal**parent:** MonitoringDataProducerInternal**Parameter:** maxSampleAge**Type:** float**Description:** Maximal age of node sample to contribute**Parameter:** excludePDUs**Type:** list of references to PowerDistributionUnit**Description:** List of PDUs to exclude from the total**5.2.279 MonitoringDataProducerAlertLevel: MonitoringDataProducerInternal****parent:** MonitoringDataProducerInternal**5.2.280 MonitoringDataProducerClusterTotal: MonitoringDataProducerInternal****parent:** MonitoringDataProducerInternal**5.2.281 MonitoringDataProducerCMDaemonState: MonitoringDataProducerInternal****parent:** MonitoringDataProducerInternal**Parameter:** subsystems**Type:** list of strings**Description:** Subsystems**5.2.282 MonitoringDataProducerDeviceState: MonitoringDataProducerInternal****parent:** MonitoringDataProducerInternal**5.2.283 MonitoringDataProducerEC2SpotPrices: MonitoringDataProducerInternal****parent:** MonitoringDataProducerInternal**Parameter:** regions**Type:** enum**Description:** Regions to collect data for**Parameter:** customRegions**Type:** list of references to EC2Region**Description:** Custom list of regions to collect data from**Parameter:** types**Type:** enum**Description:** Types to collect data for**Parameter:** customTypes**Type:** list of references to EC2Type**Description:** Custom list of types to collect data from

5.2.284 `MonitoringDataProducerEthernetSwitch: MonitoringDataProducerInternal`**parent:** `MonitoringDataProducerInternal`**5.2.285** `MonitoringDataProducerFabricTotal: MonitoringDataProducerInternal`**parent:** `MonitoringDataProducerInternal`**5.2.286** `MonitoringDataProducerGPU: MonitoringDataProducer`**parent:** `MonitoringDataProducer`**Parameter:** `updateFreq`**Type:** `float`**Description:** Update frequency of the internal cuda metric sampler**5.2.287** `MonitoringDataProducerInternal: MonitoringDataProducer`**parent:** `MonitoringDataProducer`**5.2.288** `MonitoringDataProducerJobMetadata: MonitoringDataProducer`**parent:** `MonitoringDataProducer`**Parameter:** `allowPreAllocate`**Type:** `boolean`**Description:** Allow pre-allocate of monitoring structures, speeds up for large number of jobs. Disable if measurables per node differ a lot**Parameter:** `excludeMetrics`**Type:** `list of strings`**Description:** Exclude metrics by name from collection**Parameter:** `includeMetrics`**Type:** `list of strings`**Description:** Only these metrics will be samples if the set is not empty**Parameter:** `excludeUsers`**Type:** `list of strings`**Description:** Exclude usage data for the specified users**Parameter:** `includeUsers`**Type:** `list of strings`**Description:** Only include usage data for the specified users**Parameter:** `excludeShell`**Type:** `list of strings`**Description:** Exclude usage data for the specified shells**Parameter:** `minimalUserId`**Type:** `unsigned integer`**Description:** Minimal user ID**Parameter:** `userCode`

Type: string

Description: Lua code for calculation of extra metric per user

Parameter: storeLastChangeTimestamp

Type: boolean

Description: Add extra metric to store last change timestamp

5.2.289 MonitoringDataProducerJobQueue: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: wlmClusters

Type: list of references to WlmCluster

Description: List of wlm clusters for which to sample, empty for all

5.2.290 MonitoringDataProducerJob: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: allowPreAllocate

Type: boolean

Description: Allow pre-allocate of monitoring structures, speeds up for large number of jobs. Disable if measurables per node differ a lot

Parameter: metricSettings

Type: MonitoringJobMetricSettings

Description: Submode containing job metric settings

5.2.291 MonitoringDataProducerLua: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: code

Type: string

Description: Lua code

Parameter: timeout

Type: unsigned integer

Description: Lua timeout

5.2.292 MonitoringDataProducerMonitoringSystem: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.293 MonitoringDataProducerPerpetual: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: script

Type: string

Description: Script

Parameter: runInBash

Type: boolean

Description: Run the script in a bash session

Parameter: arguments

Type: list of strings

Description: Additional arguments to pass to the script

Parameter: format

Type: enum

Description: Expected output format

Parameter: watch

Type: boolean

Description: Watch script for for changes, and restart

5.2.294 `MonitoringDataProducerPowerDistributionUnit:`
`MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

5.2.295 `MonitoringDataProducerProcMemInfo:` `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

5.2.296 `MonitoringDataProducerProcMount:` `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

Parameter: includeMedia

Type: boolean

Description: Include media mount points

Parameter: includeRemote

Type: boolean

Description: Include remote mount points

Parameter: includeDocker

Type: boolean

Description: Include docker mount points

Parameter: excludeMountPoints

Type: list of strings

Description: Exclude mount points

5.2.297 `MonitoringDataProducerProcNetDev:` `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

Parameter: excludeIf

Type: list of strings

Description: Exclude interfaces

5.2.298 `MonitoringDataProducerProcNetSnmp: MonitoringDataProducerInternal`**parent:** `MonitoringDataProducerInternal`**5.2.299** `MonitoringDataProducerProcPidStat: MonitoringDataProducerInternal`**parent:** `MonitoringDataProducerInternal`**Parameter:** `pid`**Type:** unsigned integer**Description:** PID to sample**Parameter:** `process`**Type:** string**Description:** Process**5.2.300** `MonitoringDataProducerProcStat: MonitoringDataProducerInternal`**parent:** `MonitoringDataProducerInternal`**Parameter:** `individualCPU`**Type:** boolean**Description:** Measure individual CPUs**5.2.301** `MonitoringDataProducerProcVMStat: MonitoringDataProducerInternal`**parent:** `MonitoringDataProducerInternal`**5.2.302** `MonitoringDataProducerPrometheus: MonitoringDataProducer`**parent:** `MonitoringDataProducer`**Parameter:** `urls`**Type:** list of strings**Description:** One or more URLs to try connect to**Parameter:** `timeout`**Type:** unsigned integer**Description:** Http get timeout**Parameter:** `passEnvironment`**Type:** boolean**Description:** Pass the entity environment to the script**Parameter:** `username`**Type:** string**Description:** Username used in http call**Parameter:** `password`**Type:** string**Description:** Password used in http call**Parameter:** `https`**Type:** boolean

Description: https

Parameter: caPath

Type: string

Description: CA certificate path

Parameter: pricateKeyPath

Type: string

Description: Certificate path

Parameter: certificatePath

Type: string

Description: Private key path

Parameter: staleTracking

Type: boolean

Description: Enable automatic tracking of stale metrics

Parameter: withCertificate

Type: boolean

Description: Pass the cmdaemon certificate to make the call

Parameter: includeProducerJobName

Type: boolean

Description: Automatically include producer job name in Prometheus label

Parameter: includeEntityName

Type: boolean

Description: Automatically include entity name in Prometheus label

Parameter: rules

Type: list of PrometheusRecordingRule

Description: Recording rules

5.2.303 MonitoringDataProducerRackSensor: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.304 MonitoringDataProducerRecorder: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: query

Type: reference to PrometheusQuery or None

Description: Query to execute

Parameter: freeQuery

Type: string

Description: Free string query to execute

Parameter: `parameters`

Type: list of strings

Description: Parameters

Parameter: `evaluationTime`

Type: string

Description: Evaluation time

Parameter: `stalenessDelay`

Type: float

Description: Staleness delay

Parameter: `excludeBright`

Type: boolean

Description: Exclude Bright data

Parameter: `excludePrometheus`

Type: boolean

Description: Exclude Prometheus data

Parameter: `inputRules`

Type: list of PrometheusRecordingRule

Description: Input recording rules

Parameter: `rules`

Type: list of PrometheusRecordingRule

Description: Recording rules

5.2.305 MonitoringDataProducerRedfishSubscription: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.306 MonitoringDataProducerScript: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: `script`

Type: string

Description: Script

Parameter: `timeout`

Type: unsigned integer

Description: Script timeout

Parameter: `arguments`

Type: list of strings

Description: Additional arguments to pass to the script

Parameter: `format`

Type: enum

Description: Expected output format

5.2.307 `MonitoringDataProducerSingleLineHealthCheckScript:`
`MonitoringDataProducerSingleLineScript`

parent: `MonitoringDataProducerSingleLineScript`

5.2.308 `MonitoringDataProducerSingleLineMetricScript:`
`MonitoringDataProducerSingleLineScript`

parent: `MonitoringDataProducerSingleLineScript`

Parameter: `minimum`

Type: `float`

Description: Minimum

Parameter: `maximum`

Type: `float`

Description: Maximum

Parameter: `cumulative`

Type: `boolean`

Description: Cumulative

Parameter: `unit`

Type: `string`

Description: Unit

5.2.309 `MonitoringDataProducerSingleLineScript:` `MonitoringDataProducer`

parent: `MonitoringDataProducer`

Parameter: `script`

Type: `string`

Description: Script

Parameter: `typeClass`

Type: `string`

Description: Type class, slash(/) separated for levels

Parameter: `timeout`

Type: `unsigned integer`

Description: Script timeout

Parameter: `arguments`

Type: `list of strings`

Description: Additional arguments to pass to the script

Parameter: `runInBash`

Type: `boolean`

Description: Run the script in a bash session

5.2.310 MonitoringDataProducerSysBlockStat: MonitoringDataProducerInternal**parent:** MonitoringDataProducerInternal**Parameter:** excludeVirtualDisks**Type:** boolean**Description:** Exclude virtual disks**Parameter:** excludeDisks**Type:** list of strings**Description:** Exclude disks**5.2.311 MonitoringDataProducerSysInfo: MonitoringDataProducerInternal****parent:** MonitoringDataProducerInternal**5.2.312 MonitoringDataProducerTest: MonitoringDataProducerInternal****parent:** MonitoringDataProducerInternal**Parameter:** instances**Type:** unsigned integer**Description:** Number of instances per test**5.2.313 MonitoringDataProducer: Entity****parent:** Entity**Parameter:** name**Type:** string**Description:** Name**Parameter:** description**Type:** string**Description:** Description**Parameter:** notes**Type:** string**Description:** Administrator notes**Parameter:** when**Type:** enum**Description:** When the producer should run**Parameter:** maxAge**Type:** float**Description:** Maximal age of historic data, 0 for infinite**Parameter:** maxSamples**Type:** unsigned integer**Description:** Maximal samples of historic data, 0 for infinite**Parameter:** interval

Type: float

Description: Sampling interval

Parameter: offset

Type: float

Description: Time offset for sampling interval

Parameter: startupDelay

Type: float

Description: Delay the first sampling the specified time after cmd starts

Parameter: intervals

Type: list of floating point numbers

Description: Out of band sampling interval

Parameter: gap

Type: unsigned integer

Description: Number of missed samples before we add a NaN

Parameter: fuzzyOffset

Type: float

Description: Automatic fuzzy offset factor [0-1]. Multiplied by interval

Parameter: introduceNaN

Type: boolean

Description: Introduce NaN if device goes up/down/up

Parameter: automaticReinitialize

Type: boolean

Description: Automatic run -initialize when a new metric has been detected

Parameter: disabled

Type: boolean

Description: Disabled

Parameter: disableTriggers

Type: boolean

Description: Disable triggers from being evaluated

Parameter: disableOnHighLoad

Type: boolean

Description: Disable when nodes are very busy

Parameter: nodeExecutionFilters

Type: list of MonitoringExecutionFilter

Description: Filter nodes which should run this data producer. If none are specified: execute on each node.

Parameter: `executionMultiplexers`

Type: list of `MonitoringExecutionMultiplexer`

Description: Execute the producer once for each entity which matches one of the criteria. If none are specified: only execute it for the node itself.

Parameter: `consolidator`

Type: reference to `MonitoringConsolidator` or `None`

Description: Consolidator configuration

Parameter: `suppressedByGoingDown`

Type: boolean

Description: Suppress running action if device is going down

Parameter: `associatedUser`

Type: string

Description: User associated with this measurable

5.2.314 `MonitoringDataProducerTrustedTool: MonitoringDataProducer`

parent: `MonitoringDataProducer`

Parameter: `port`

Type: unsigned integer

Description: Port

Parameter: `localhost`

Type: boolean

Description: Only listen on localhost

Parameter: `secret`

Type: string

Description: Secret

5.2.315 `MonitoringDataProducerUserCount: MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

Parameter: `customScript`

Type: string

Description: Custom script

Parameter: `customScriptTimeout`

Type: unsigned integer

Description: Custom script timeout

Parameter: `minimalUserId`

Type: unsigned integer

Description: Minumal user ID

Parameter: namesInInfoMessage

Type: boolean

Description: Names in info message, could lead to lots of data

5.2.316 MonitoringDataProducerWlmSlot: MonitoringDataProducer

parent: MonitoringDataProducer

5.2.317 MonitoringDeviceStateSubSystemInfo: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: up

Type: unsigned integer

Description: Number of up devices

Parameter: down

Type: unsigned integer

Description: Number of down devices

Parameter: closed

Type: unsigned integer

Description: Number of closed devices

Parameter: muted

Type: unsigned integer

Description: Number of muted devices

5.2.318 MonitoringDrainAction: MonitoringAction

parent: MonitoringAction

5.2.319 MonitoringDynamicExecutionMultiplexer: MonitoringExecutionMultiplexer

parent: MonitoringExecutionMultiplexer

Parameter: local

Type: boolean

Description: Run on the local node

Parameter: offload

Type: boolean

Description: Run on the nodes offloaded onto this node

5.2.320 MonitoringEmailAction: MonitoringAction

parent: MonitoringAction

Parameter: recipients

Type: list of strings

Description: Recipients

Parameter: allAdministrators

Type: boolean

Description: Also send e-mail to all administrator

Parameter: server

Type: string

Description: The SNMP server

Parameter: sender

Type: string

Description: The sender of the e-mail

Parameter: info

Type: string

Description: Extra information passed in the e-mail

Parameter: timeout

Type: unsigned integer

Description: Timeout

Parameter: mergeDelay

Type: float

Description: Maximal action delay in order to merge with others

Parameter: mergeTrigger

Type: boolean

Description: Merge action from multiple triggers into one

Parameter: mergeMeasurable

Type: boolean

Description: Merge action from multiple measurables into one

5.2.321 MonitoringEventAction: MonitoringAction

parent: MonitoringAction

Parameter: profiles

Type: list of strings

Description: Inform all sessions with the specified profile, none is all

Parameter: userNames

Type: list of strings

Description: Inform all sessions with the specified user names, none is all

Parameter: mergeDelay

Type: float

Description: Maximal action delay in order to merge with others

5.2.322 MonitoringExecutionFilter: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: filterOperation

Type: enum

Description: The filter operation to be performed

5.2.323 MonitoringExecutionMultiplexer: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: filterOperation

Type: enum

Description: The filter operation to be performed

5.2.324 MonitoringExpression: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

5.2.325 MonitoringGroupedExpression: MonitoringExpression

parent: MonitoringExpression

Parameter: op

Type: enum

Description: Operator

Parameter: allowMissing

Type: boolean

Description: Allow missing sub expressions

Parameter: expressions

Type: list of MonitoringCompareExpression

Description: Expressions

5.2.326 MonitoringHealthOverview: Entity

parent: Entity

Parameter: refEntityUniqueKey

Type: unsigned integer

Description: Entity

Parameter: alertLevelMaximum

Type: unsigned integer

Description: Maximal severity of all failed triggers

Parameter: alertLevelSum

Type: unsigned integer

Description: Total severity of all failed triggers

Parameter: alertLevelCount

Type: unsigned integer

Description: Total count of all failed triggers

Parameter: timestamp

Type: unsigned integer

Description: Timestamp of data

Parameter: info

Type: string

Description: Info

5.2.327 MonitoringImageUpdateAction: MonitoringAction

parent: MonitoringAction

5.2.328 MonitoringJobMetricSettings: Entity

parent: Entity

Parameter: excludeDevices

Type: list of strings

Description: Exclude block devices from metric collection (by default all the devices are sampled)

Parameter: includeDevices

Type: list of strings

Description: Only these devices will be sampled if the set is not empty

Parameter: enableAdvancedMetrics

Type: boolean

Description: Sample advanced metrics as well as basic metrics

Parameter: mapJobsToGpus

Type: boolean

Description: Associate job with GPUs where the job processes run when possible

Parameter: excludeMetrics

Type: list of strings

Description: Exclude metrics by name from collection

Parameter: `includeMetrics`

Type: list of strings

Description: Only these metrics will be samples if the set is not empty

Parameter: `cgroupBaseDirectory`

Type: string

Description: CGroup base directory

Parameter: `cgroupSearch`

Type: string

Description: Search field for finding the WLM CGroup

Parameter: `keepAliveSleep`

Type: float

Description: Time the cgroup keepalive process sleeps

Parameter: `samplingType`

Type: enum

Description: Type of metrics sampling

Parameter: `pickupInterval`

Type: float

Description: High initial pickup interval

Parameter: `pickupTimes`

Type: unsigned integer

Description: Number of times to apply the high initial pickup interval

Parameter: `pickupPriority`

Type: unsigned integer

Description: Priority of the pickup interval change

5.2.329 `MonitoringLuaExecutionFilter: MonitoringExecutionFilter`

parent: `MonitoringExecutionFilter`

Parameter: `code`

Type: string

Description: Lua code

Parameter: `notes`

Type: string

Description: Notes

5.2.330 MonitoringLuaExecutionMultiplexer: MonitoringExecutionMultiplexer**parent:** MonitoringExecutionMultiplexer**Parameter:** code**Type:** string**Description:** Lua code**Parameter:** notes**Type:** string**Description:** Notes**5.2.331 MonitoringMeasurableEnum: MonitoringMeasurable****parent:** MonitoringMeasurable**5.2.332 MonitoringMeasurableHealthCheck: MonitoringMeasurable****parent:** MonitoringMeasurable**5.2.333 MonitoringMeasurableMetric: MonitoringMeasurable****parent:** MonitoringMeasurable**Parameter:** minimum**Type:** float**Description:** Minimum**Parameter:** maximum**Type:** float**Description:** Maximum**Parameter:** cumulative**Type:** boolean**Description:** Cumulative**Parameter:** unit**Type:** string**Description:** Unit**5.2.334 MonitoringMeasurable: Entity****parent:** Entity**Parameter:** producer**Type:** reference to MonitoringDataProducer**Description:** Monitoring data producer**Parameter:** name**Type:** string**Description:** Name**Parameter:** parameter**Type:** string

Description: Parameter

Parameter: `maxAge`

Type: `float`

Description: Maximal age of historic data, 0 for infinite

Parameter: `maxSamples`

Type: `unsigned integer`

Description: Maximal samples of historic data, 0 for infinite

Parameter: `disabled`

Type: `boolean`

Description: Disable: do not process or save to disk

Parameter: `disableTriggers`

Type: `boolean`

Description: Disable triggers from being evaluated

Parameter: `gap`

Type: `unsigned integer`

Description: Number of missed samples before we add a NaN

Parameter: `introduceNaN`

Type: `boolean`

Description: Introduce NaN if device goes up/down/up

Parameter: `description`

Type: `string`

Description: Description

Parameter: `typeClass`

Type: `string`

Description: Type class, slash(/) separated for levels

Parameter: `sourceType`

Type: `enum`

Description: Source of the measurable

Parameter: `consolidator`

Type: reference to `MonitoringConsolidator` or `None`

Description: Consolidator configuration

Parameter: `suppressedByGoingDown`

Type: `boolean`

Description: Suppress running action if device is going down

Parameter: `access`

Type: enum

Description: User access control

Parameter: associatedUser

Type: string

Description: User associated with this measurable

5.2.335 MonitoringNodeListExecutionFilter: MonitoringExecutionFilter

parent: MonitoringExecutionFilter

Parameter: nodes

Type: list of references to Node

Description: List of nodes belonging to this group

5.2.336 MonitoringNodeListExecutionMultiplexer: MonitoringExecutionMultiplexer

parent: MonitoringExecutionMultiplexer

Parameter: nodes

Type: list of references to Node

Description: List of nodes belonging to this group

5.2.337 MonitoringOffloadBackupInformation: Entity

parent: Entity

Parameter: refMonitoringNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: refBackupNodeUniqueKeys

Type: list of unsigned numbers

Description: Node

5.2.338 MonitoringOffloadInformation: Entity

parent: Entity

Parameter: refMonitoringNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: refBestMonitoringNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: refViableMonitoringNodeUniqueKeys

Type: list of unsigned numbers

Description: Node

5.2.339 MonitoringOverlayListExecutionFilter: MonitoringExecutionFilter

parent: MonitoringExecutionFilter

Parameter: overlays

Type: list of references to ConfigurationOverlay

Description: List of overlays belonging to this group

5.2.340 MonitoringOverlayListExecutionMultiplexer: MonitoringExecutionMultiplexer

parent: MonitoringExecutionMultiplexer

Parameter: overlays

Type: list of references to ConfigurationOverlay

Description: List of overlays belonging to this group

5.2.341 MonitoringPickupInterval: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: interval

Type: float

Description: Interval on which the RPC will be done

Parameter: times

Type: unsigned integer

Description: Number of times the RPC will be done with the interval

Parameter: priority

Type: unsigned integer

Description: Priority of the current pickup interval

5.2.342 MonitoringPlotterSubSystemInfo: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: first

Type: unsigned integer

Description: First plot request

Parameter: last

Type: unsigned integer

Description: Last plot request

Parameter: count

Type: unsigned integer

Description: Number of plot requests

Parameter: samples

Type: unsigned integer

Description: Number of data samples

Parameter: sources

Type: unsigned integer

Description: Number of sources

5.2.343 MonitoringPowerAction: MonitoringAction

parent: MonitoringAction

5.2.344 MonitoringPowerOffAction: MonitoringPowerAction

parent: MonitoringPowerAction

5.2.345 MonitoringPowerOnAction: MonitoringPowerAction

parent: MonitoringPowerAction

5.2.346 MonitoringPowerResetAction: MonitoringPowerAction

parent: MonitoringPowerAction

5.2.347 MonitoringRebootAction: MonitoringAction

parent: MonitoringAction

Parameter: runPreHaltOperations

Type: boolean

Description: Run pre-halt operations

Parameter: preHaltOperationTimeout

Type: unsigned integer

Description: Run pre-halt operation timeout

5.2.348 MonitoringResourceExecutionFilter: MonitoringExecutionFilter

parent: MonitoringExecutionFilter

Parameter: resources

Type: list of strings

Description: Resources

Parameter: op

Type: enum

Description: Operator

5.2.349 MonitoringResourceExecutionMultiplexer: MonitoringExecutionMultiplexer**parent:** MonitoringExecutionMultiplexer**Parameter:** resources**Type:** list of strings**Description:** Resources**Parameter:** op**Type:** enum**Description:** Operator**5.2.350 MonitoringRole: Role****parent:** Role**Parameter:** numberOfBackups**Type:** unsigned integer**Description:** Minimum number of backups of the monitoring data**Parameter:** backupRing**Type:** unsigned integer**Description:** Only backup to nodes within the same ring**Parameter:** maximumNumberOfNodes**Type:** unsigned integer**Description:** Maximum number of nodes the monitoring can handle, set to 0 for no limit**Parameter:** delayAfterUp**Type:** unsigned integer**Description:** Delay after node becomes up before it can take over from other nodes**Parameter:** delayAfterDown**Type:** unsigned integer**Description:** Delay after node goes down before the workload will be offloaded to other nodes**Parameter:** backupOnShutdown**Type:** boolean**Description:** Take a backup when the node is shutdown via RPC**Parameter:** backupOnReboot**Type:** boolean**Description:** Take a backup when the node is reboot via RPC**Parameter:** backupOnPowerOff**Type:** boolean**Description:** Take a backup when the node is power reset via RPC**Parameter:** backupOnPowerReset**Type:** boolean

Description: Take a backup when the node is powered off via RPC

Parameter: backupOnTerminate

Type: boolean

Description: Take a backup when the node is terminated via RPC

Parameter: nodeFilters

Type: list of MonitoringExecutionFilter

Description: Filter nodes that can be monitored by this node, clear this list for automatic

5.2.351 MonitoringScriptAction: MonitoringAction

parent: MonitoringAction

Parameter: script

Type: string

Description: Script

Parameter: arguments

Type: list of strings

Description: Arguments

Parameter: timeout

Type: unsigned integer

Description: Timeout

Parameter: nodeEnvironment

Type: boolean

Description: Pass the node environment to the script

Parameter: runInShell

Type: boolean

Description: Run in shell

Parameter: mergeDelay

Type: float

Description: Maximal action delay in order to merge with others

Parameter: mergeTrigger

Type: boolean

Description: Merge action from multiple triggers into one

Parameter: mergeMeasurable

Type: boolean

Description: Merge action from multiple measurables into one

5.2.352 MonitoringServiceAction: MonitoringAction**parent:** MonitoringAction**Parameter:** service**Type:** string**Description:** Service**Parameter:** arguments**Type:** list of strings**Description:** Arguments**5.2.353 MonitoringServiceRestartAction: MonitoringServiceAction****parent:** MonitoringServiceAction**5.2.354 MonitoringServiceStartAction: MonitoringServiceAction****parent:** MonitoringServiceAction**5.2.355 MonitoringServiceStopAction: MonitoringServiceAction****parent:** MonitoringServiceAction**5.2.356 MonitoringServiceSubSystemInfo: Entity****parent:** Entity**Parameter:** name**Type:** string**Description:** Name**Parameter:** stopped**Type:** boolean**Description:** Stopped**Parameter:** suspended**Type:** boolean**Description:** Suspended**Parameter:** last**Type:** unsigned integer**Description:** Last sample time**Parameter:** queued**Type:** unsigned integer**Description:** Queued items**Parameter:** handled**Type:** unsigned integer**Description:** Handled items**Parameter:** cacheMiss**Type:** unsigned integer

Description: Miss cached count

5.2.357 MonitoringShutdownAction: MonitoringAction

parent: MonitoringAction

Parameter: runPreHaltOperations

Type: boolean

Description: Run pre-halt operations

Parameter: preHaltOperationTimeout

Type: unsigned integer

Description: Run pre-halt operation timeout

5.2.358 MonitoringStorageSubSystemInfo: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: name

Type: string

Description: Name

Parameter: elements

Type: unsigned integer

Description: Elements

Parameter: disksize

Type: unsigned integer

Description: Disk size

Parameter: freespace

Type: unsigned integer

Description: Free disk space

Parameter: usage

Type: float

Description: Usage

5.2.359 MonitoringSubSystemInfo: SubSystemInfo

parent: SubSystemInfo

Parameter: storage

Type: list of MonitoringStorageSubSystemInfo

Description: Storage

Parameter: service

Type: list of MonitoringServiceSubSystemInfo

Description: Service

Parameter: `plotter`

Type: list of `MonitoringPlotterSubSystemInfo`

Description: Plotter

Parameter: `dataCache`

Type: list of `MonitoringDataCacheSubSystemInfo`

Description: DataCache

Parameter: `cache`

Type: list of `MonitoringCacheSubSystemInfo`

Description: Cache

Parameter: `deviceState`

Type: list of `MonitoringDeviceStateSubSystemInfo`

Description: DeviceState

5.2.360 `MonitoringTrigger: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Name

Parameter: `disabled`

Type: `boolean`

Description: Disable

Parameter: `severity`

Type: `unsigned integer`

Description: Severity

Parameter: `markEntityAsFailed`

Type: `boolean`

Description: Mark entity as failed

Parameter: `markEntityAsUnknown`

Type: `boolean`

Description: Mark entity as unknown

Parameter: `stateFlappingPeriod`

Type: `float`

Description: Time period to check for state flapping

Parameter: `stateFlappingCount`

Type: `unsigned integer`

Description: Number of times states need to change in the specified period before it is considered stateflapping

Parameter: expression

Type: MonitoringExpression

Description: Expression

Parameter: enterActions

Type: list of references to MonitoringAction

Description: Actions to execute when the expression enters 'true' state

Parameter: duringActions

Type: list of references to MonitoringAction

Description: Actions to execute when the expression is and has been 'true'

Parameter: leaveActions

Type: list of references to MonitoringAction

Description: Actions to execute when the expression is was 'true' and no longer is

Parameter: stateFlappingActions

Type: list of references to MonitoringAction

Description: Actions to execute when the expression is state flapping

5.2.361 MonitoringTypeExecutionFilter: MonitoringExecutionFilter

parent: MonitoringExecutionFilter

Parameter: headNode

Type: boolean

Description: Head node

Parameter: physicalNode

Type: boolean

Description: Physical node

Parameter: cloudNode

Type: boolean

Description: Cloud node

Parameter: liteNode

Type: boolean

Description: Lite node

5.2.362 MonitoringTypeExecutionMultiplexer: MonitoringExecutionMultiplexer

parent: MonitoringExecutionMultiplexer

Parameter: types

Type: list of strings

Description: Types

5.2.363 `MonitoringUndrainAction: MonitoringAction`

parent: `MonitoringAction`

5.2.364 `MsgQueue: Entity`

parent: `Entity`

Parameter: `refNodeUniqueKey`

Type: unsigned integer

Description: Node

Parameter: `msqid`

Type: integer

Description: Message queue ID

Parameter: `ipcperm`

Type: `IPCPerm`

Description: IPC permissions

Parameter: `size`

Type: unsigned integer

Description: Size in bytes

Parameter: `qnum`

Type: unsigned integer

Description: Number of messages in the queue

5.2.365 `MyrinetSwitch: Switch`

parent: `Switch`

5.2.366 `NetworkAliasInterface: NetworkInterface`

parent: `NetworkInterface`

5.2.367 `NetworkBmcInterface: NetworkInterface`

parent: `NetworkInterface`

Parameter: `gateway`

Type: IP

Description: Gateway IP address, usually the head node's IP on the BMC network.

Parameter: `vlanid`

Type: unsigned integer

Description: VLAN ID setting for the BMC card. When set to 0, VLAN capabilities are disabled.

Parameter: `lanchannel`

Type: unsigned integer

Description: LAN channel for BMC interface

5.2.368 NetworkBondInterface: NetworkInterface**parent:** NetworkInterface**Parameter:** mode**Type:** integer**Description:** Bonding mode, see bonding.txt in the kernel documentation.**Parameter:** options**Type:** string**Description:** Options to pass to the bonding driver, see kernel documentation.**Parameter:** interfaces**Type:** list of strings**Description:** List of interfaces which should be channel-bonded.**5.2.369 NetworkBridgeInterface: NetworkInterface****parent:** NetworkInterface**Parameter:** stp**Type:** boolean**Description:** Spanning Tree Protocol enabled.**Parameter:** forward_delay**Type:** unsigned integer**Description:** Frame forward delay (in seconds)**Parameter:** interfaces**Type:** list of strings**Description:** List of interfaces which should be bridged.**5.2.370 NetworkConnection: Entity****parent:** Entity**Parameter:** refNodeUniqueKey**Type:** unsigned integer**Description:** Node**Parameter:** source**Type:** IP**Description:** The source IP address**Parameter:** sourcePort**Type:** unsigned integer**Description:** The source port**Parameter:** destination**Type:** IP

Description: The destination IP address

Parameter: destinationPort

Type: unsigned integer

Description: The destination port

Parameter: type

Type: enum

Description: The connection type

Parameter: state

Type: enum

Description: The connection state

5.2.371 NetworkInterface: Entity

parent: Entity

Parameter: name

Type: string

Description: The network interface device name

Parameter: ip

Type: IP

Description: The interfaces IP address

Parameter: ipv6Ip

Type: IP

Description: The interfaces IPv6 IP address

Parameter: dhcp

Type: boolean

Description: Get the ip via DHCP, leave ip blank

Parameter: ipv6Dhcp

Type: boolean

Description: Get the IPv6IP via DHCP, leave IPv6IP blank

Parameter: bringupduringinstall

Type: enum

Description: Brings up interface during install if on

Parameter: network

Type: reference to Network or None

Description: Network the interface is connected to

Parameter: alternativeHostname

Type: string

Description: An alternative hostname to use if this is second (startif != always) IP address on the same network

Parameter: additionalHostnames

Type: list of strings

Description: List of additional hostnames that should resolve to the interfaces IP address

Parameter: startIf

Type: enum

Description: Only run this service in the specified state

Parameter: onNetworkPriority

Type: unsigned integer

Description: Priority of DNS resolution queries for the interface on its network

Parameter: connectedMode

Type: boolean

Description: IB connected mode

5.2.372 NetworkNetMapInterface: NetworkInterface

parent: NetworkInterface

5.2.373 NetworkPhysicalInterface: NetworkInterface

parent: NetworkInterface

Parameter: mac

Type: MAC

Description: The interfaces MAC address

Parameter: speed

Type: string

Description: The interfaces network speed.

Parameter: cardtype

Type: string

Description: The type of network interface.

5.2.374 Network: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: IPv6

Type: boolean

Description: IPv6 enabled

Parameter: ipv6NetmaskBits

Type: unsigned integer

Description: Netmask or Classless Inter-Domain Routing for IPv6

Parameter: netmaskBits

Type: unsigned integer

Description: Netmask or Classless Inter-Domain Routing

Parameter: ipv6BaseAddress

Type: IP

Description: Base IP address for Ipv6

Parameter: baseAddress

Type: IP

Description: Base IP address

Parameter: broadcastAddress

Type: IP

Description: Broadcast IP address

Parameter: domainName

Type: string

Description: Domain name

Parameter: type

Type: enum

Description: Type of network, internal: local cluster network, external: connection to outside world, global: unique network accross the cloud, tunnel: cloud network, netmap: virtual network user by cloud nodes to connect to nodes inside the cluster

Parameter: mtu

Type: unsigned integer

Description: The maximum transmission unit.

Parameter: bootable

Type: boolean

Description: If set compute nodes can boot using this network

Parameter: dynamicRangeStart

Type: IP

Description: First IP address in the networks dynamic range

Parameter: dynamicRangeEnd

Type: IP

Description: Last IP address in the networks dynamic range

Parameter: lockDownDhcpd

Type: boolean

Description: Don't respond to dhcp request of new nodes via this network

Parameter: `management`

Type: `boolean`

Description: If set, the network can be used as a management network

Parameter: `gateway`

Type: `IP`

Description: Gateway

Parameter: `ipv6Gateway`

Type: `IP`

Description: IPv6 Gateway

Parameter: `notes`

Type: `string`

Description: Administrator notes

Parameter: `cloudSubnetID`

Type: `string`

Description: The Cloud ID of the subnet

Parameter: `EC2AvailabilityZone`

Type: `string`

Description: The AWS availability zone inside which the subnet exists

Parameter: `EC2String`

Type: `string`

Description: *none*

Parameter: `allowAutosign`

Type: `enum`

Description: Specify if certificate request from node installers can be signed automatically

Parameter: `generatedDNSZone`

Type: `enum`

Description: Specify which DNS zones should be written

Parameter: `excludeFromSearchDomain`

Type: `boolean`

Description: Exclude from search domain in `/etc/resolv.conf` file

Parameter: `searchDomainIndex`

Type: `unsigned integer`

Description: Search domain index in `/etc/resolv.conf` file, set to 0 for automatic

Parameter: `disableAutomaticExports`

Type: boolean

Description: Disable creation of automatic filesystem exports

5.2.375 NetworkTunnelInterface: NetworkInterface

parent: NetworkInterface

5.2.376 NetworkVLANInterface: NetworkInterface

parent: NetworkInterface

Parameter: reorder_hdr

Type: boolean

Description: When set to true the VLAN device will move the ethernet header around to make it look exactly like a real ethernet device.

5.2.377 NewNode: Entity

parent: Entity

Parameter: switchPort

Type: SwitchPort or None

Description: Switch port the new node is connected to.

Parameter: mac

Type: MAC

Description: MAC address of the new node.

Parameter: firstSeen

Type: integer

Description: Uptime when the new node was first seen.

Parameter: lastSeen

Type: integer

Description: Uptime when the new node was last seen.

Parameter: appeared

Type: string

Description: Timestamp when the new node first appeared.

5.2.378 NginxReverseProxy: Entity

parent: Entity

Parameter: port

Type: unsigned integer

Description: Port

Parameter: address

Type: IP

Description: Destination Network Address

Parameter: node

Type: reference to Node

Description: Destination hostname(only for nodes)

Parameter: destport

Type: unsigned integer

Description: Port

Parameter: description

Type: string

Description: Description

5.2.379 NginxRole: BaseNginxRole

parent: BaseNginxRole

Parameter: nginxReverseProxy

Type: list of NginxReverseProxy

Description: Nginx Reverse Proxy Configuration

5.2.380 NodeGroup: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: nodes

Type: list of references to Node

Description: List of nodes belonging to this group

5.2.381 NodeHierarchyResult: Entity

parent: Entity

Parameter: responsibility

Type: enum

Description: Responsibility

Parameter: nodes

Type: list of unsigned numbers

Description: Node

Parameter: rules

Type: list of unsigned numbers

Description: Rules from which nodes were derived

Parameter: responsible

Type: list of unsigned numbers

Description: List of nodes that are responsible for the node

5.2.382 NodeHierarchyRuleCategorySelection: NodeHierarchyRuleSelection**parent:** NodeHierarchyRuleSelection**Parameter:** categories**Type:** list of references to Category**Description:** List of categories**5.2.383 NodeHierarchyRuleCloudRegionSelection: NodeHierarchyRuleSelection****parent:** NodeHierarchyRuleSelection**Parameter:** regions**Type:** list of references to CloudRegion**Description:** List of regions**5.2.384 NodeHierarchyRuleDeviceSelection: NodeHierarchyRuleSelection****parent:** NodeHierarchyRuleSelection**Parameter:** devices**Type:** list of references to Device**Description:** List of devices**5.2.385 NodeHierarchyRuleEdgeSiteSelection: NodeHierarchyRuleSelection****parent:** NodeHierarchyRuleSelection**Parameter:** edgesites**Type:** list of references to EdgeSite**Description:** List of edgesites**5.2.386 NodeHierarchyRuleNodeGroupSelection: NodeHierarchyRuleSelection****parent:** NodeHierarchyRuleSelection**Parameter:** nodegroups**Type:** list of references to NodeGroup**Description:** List of nodegroups**5.2.387 NodeHierarchyRuleNodeSelection: NodeHierarchyRuleSelection****parent:** NodeHierarchyRuleSelection**Parameter:** nodes**Type:** list of references to Node**Description:** List of nodes**5.2.388 NodeHierarchyRuleRackSelection: NodeHierarchyRuleSelection****parent:** NodeHierarchyRuleSelection**Parameter:** racks**Type:** list of references to Rack**Description:** List of racks

5.2.389 NodeHierarchyRuleRoleSelection: NodeHierarchyRuleSelection**parent:** NodeHierarchyRuleSelection**Parameter:** director**Type:** boolean**Description:** Director**Parameter:** boot**Type:** boolean**Description:** Boot**Parameter:** provisioning**Type:** boolean**Description:** Provisioning**Parameter:** dns**Type:** boolean**Description:** DNS**Parameter:** ldap**Type:** boolean**Description:** LDAP**Parameter:** monitoring**Type:** boolean**Description:** Monitoring**5.2.390** NodeHierarchyRuleSelection: Entity**parent:** Entity**Parameter:** name**Type:** string**Description:** Name**Parameter:** operation**Type:** enum**Description:** Operation**5.2.391** NodeHierarchyRule: Entity**parent:** Entity**Parameter:** name**Type:** string**Description:** Name**Parameter:** description**Type:** string

Description: description

Parameter: disabled

Type: boolean

Description: Disabled

Parameter: priority

Type: unsigned integer

Description: Priority

Parameter: allowSelf

Type: boolean

Description: Allow node to serve itself

Parameter: locationMatch

Type: boolean

Description: Source and target node locations need to match

Parameter: sources

Type: list of NodeHierarchyRuleSelection

Description: Source selection

Parameter: targets

Type: list of NodeHierarchyRuleSelection

Description: Target selection

Parameter: director

Type: boolean

Description: Director

Parameter: dhcp

Type: boolean

Description: DHCP

Parameter: dns

Type: boolean

Description: DNS

Parameter: ntp

Type: boolean

Description: NTP

Parameter: vpn

Type: boolean

Description: VPN

Parameter: rsyslog

Type: boolean

Description: rsyslog

Parameter: ldap

Type: boolean

Description: LDAP

Parameter: bios

Type: boolean

Description: BIOS

Parameter: provisioning

Type: boolean

Description: Provisioning

Parameter: mount

Type: boolean

Description: Mount

Parameter: sshProxy

Type: boolean

Description: SSH proxy

Parameter: cmdaemonConfiguration

Type: boolean

Description: Configuration

Parameter: cmdaemonRpcForward

Type: boolean

Description: RPC forward

Parameter: cmdaemonEvents

Type: boolean

Description: Events

Parameter: cmdaemonStatus

Type: boolean

Description: Status

Parameter: cmdaemonWebSocket

Type: boolean

Description: Web socket for lite nodes

Parameter: monitoringOffload

Type: boolean

Description: Monitoring offload

Parameter: distribution

Type: enum

Description: Distribution

5.2.392 NodeHierarchyRuleTypeSelection: NodeHierarchyRuleSelection

parent: NodeHierarchyRuleSelection

Parameter: headNode

Type: boolean

Description: Head node

Parameter: physicalNode

Type: boolean

Description: Physical node

Parameter: cloudNode

Type: boolean

Description: Cloud node

Parameter: liteNode

Type: boolean

Description: Lite node

Parameter: ethernetSwitch

Type: boolean

Description: Ethernet switch

Parameter: ibSwitch

Type: boolean

Description: IB switch

Parameter: myrinetSwitch

Type: boolean

Description: IB switch

Parameter: fabricSwitch

Type: boolean

Description: Fabric switch

Parameter: fabricResourceBox

Type: boolean

Description: Fabric switch

Parameter: rackSensor

Type: boolean

Description: Rack sensor

Parameter: powerDistributionUnit

Type: boolean

Description: Power distribution unit

Parameter: genericDevice

Type: boolean

Description: Generic device

Parameter: unmanagedNode

Type: boolean

Description: Unmanaged node

Parameter: chassis

Type: boolean

Description: Chassis

5.2.393 Node: Device

parent: Device

Parameter: cmdaemonUrl

Type: string

Description: *none*

Parameter: interfaces

Type: list of NetworkInterface

Description: Ip on the management network

Parameter: provisioningInterface

Type: element of interfaces

Description: Network interface on which the node will receive software image updates

Parameter: fsmounts

Type: list of FSMount

Description: Configure the entries placed in /etc/fstab

Parameter: fsexports

Type: list of FSExport

Description: Configure the entries placed in /etc/exports

Parameter: staticRoutes

Type: list of StaticRoute

Description: Configure static routes for the interfaces

Parameter: roles

Type: list of Role

Description: Assign the roles the node should play

Parameter: services

Type: list of OSServiceConfig

Description: Manage operating system services

Parameter: `pxelabel`

Type: `string`

Description: PXE Label to be displayed when this node boots

Parameter: `customRemoteConsoleScript`

Type: `string`

Description: Script that will be used to remote console a device

Parameter: `customRemoteConsoleScriptArgument`

Type: `string`

Description: Argument for the custom remote console script

Parameter: `provisioningTransport`

Type: `enum`

Description: Defines what transport protocol should be used for provisioning. Options are RSYNC-SSH or RSYNCDAEMON. The latter is the default, is a bit less secure but faster.

Parameter: `gpuSettings`

Type: list of `GPUSettings`

Description: Configure the GPUs

Parameter: `excludeListManipulateScript`

Type: `string`

Description: A user defined script that can be used to do custom last minute changes to the exclude lists used by `cmdaemon` to `rsync`

Parameter: `ioScheduler`

Type: `string`

Description: The I/O scheduler for the disks

Parameter: `useExclusivelyFor`

Type: `string`

Description: Use node exclusively for desired function: stop all other services

Parameter: `disableFabricNVME`

Type: `boolean`

Description: Disable fabric NVME

Parameter: `bmcSettings`

Type: `BMCSettings` or `None`

Description: Configure the baseboard management controller settings

Parameter: `seLinuxSettings`

Type: `SELinuxSettings` or `None`

Description: Configure the SELinux settings

Parameter: proxySettings

Type: ProxySettings or None

Description: Configure the proxy server settings

Parameter: versionConfigFiles

Type: boolean

Description: Keep old versions of all config files for this node

Parameter: forceFullEnvironment

Type: boolean

Description: Force this node to create the environment for all nodes

Parameter: biosSetup

Type: string

Description: BIOS setup

Parameter: timeZoneSettings

Type: TimeZoneSettings or None

Description: Time zone

5.2.394 NvidiaGPUSettings: GPUSettings

parent: GPUSettings

Parameter: powerLimit

Type: unsigned integer

Description: An upper limit on how much power a GPU can use

Parameter: eccMode

Type: enum

Description: Set the ECC mode in which the GPU runs

Parameter: computeMode

Type: enum

Description: Set the compute mode in which the GPU runs

Parameter: clockSyncBoostMode

Type: enum

Description: Set the clock sync boost among the GPUs in group

Parameter: multiProcessorClockSpeed

Type: unsigned integer

Description: Set the streaming multiprocessor clock speed of the GPU

Parameter: memoryClockSpeed

Type: unsigned integer

Description: Set the streaming memory clock speed of the GPU

Parameter: migProfiles

Type: list of strings

Description: MIG profiles that will be applied to the GPU

5.2.395 OpenShiftClientRole: OpenShiftRole

parent: OpenShiftRole

5.2.396 OpenShiftProxyRole: BaseNginxRole

parent: BaseNginxRole

Parameter: unmanagedNodeConfiguration

Type: reference to UnmanagedNodeConfiguration

Description: The unmanaged nodeconfiguration this role is linked with

Parameter: httpPort

Type: unsigned integer

Description: HTTP port to forward as nginx stream

Parameter: httpsPort

Type: unsigned integer

Description: HTTPs port to forward as nginx stream

5.2.397 OpenShiftRole: Role

parent: Role

Parameter: unmanagedNodeConfiguration

Type: reference to UnmanagedNodeConfiguration

Description: The unmanaged nodeconfiguration this role is linked with

5.2.398 OpenShiftWorkerRole: OpenShiftRole

parent: OpenShiftRole

Parameter: containerStoragePath

Type: string

Description: Container storage path

5.2.399 OpenStackIntermediateStorage: CMJobIntermediateStorage

parent: CMJobIntermediateStorage

Parameter: container

Type: string

Description: Container name to place data into

5.2.400 OSCloudDisk: Entity

parent: Entity

Parameter: name

Type: string

Description: Name of the disk

Parameter: `bootIndex`

Type: integer

Description: Defines the order in which a hypervisor will try devices when attempting to boot the guest from storage. Setting a negative value indicates that the device should not be used for booting

Parameter: `size`

Type: unsigned integer

Description: Size of the disk

Parameter: `diskBus`

Type: string

Description: Hypervisor-specific details about disk bus type

Parameter: `deviceType`

Type: string

Description: Hypervisor-specific details about disk device type

Parameter: `removeOnTermination`

Type: boolean

Description: If true, the drive will be removed when the instance it is attached to gets terminated

5.2.401 `OSCloudEphemeralDisk`: `OSCloudDisk`

parent: `OSCloudDisk`

Parameter: `format`

Type: string

Description: Filesystem to format the disk

5.2.402 `OSCloudExtension`: `Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: User-defined name of the private cloud

Parameter: `region`

Type: reference to `OSCloudRegion`

Description: Region of the cluster extension

Parameter: `network`

Type: reference to `Network`

Description: Network associated with the extension

Parameter: `floatingIpNetworkId`

Type: string

Description: Floating IP Network UUID or name

Parameter: `stackId`

Type: string

Description: Heat stack ID

Parameter: `defaultDirectorSecGroupId`

Type: string

Description: Default security group ID/name for the cloud director

Parameter: `defaultCnodeSecGroupId`

Type: string

Description: Default security group ID/name for the cloud nodes

Parameter: `extraField`

Type: list of strings

Description: A list of various advanced options

5.2.403 `OSCloudFlavor: CloudType`

parent: CloudType

Parameter: `id`

Type: string

Description: The ID of the flavor

5.2.404 `OSCloudProvider: CloudProvider`

parent: CloudProvider

Parameter: `cloudApiType`

Type: string

Description: Cloud provider type

Parameter: `authUrl`

Type: string

Description: Keystone URL

Parameter: `username`

Type: string

Description: Username

Parameter: `password`

Type: string

Description: Password

Parameter: `projectId`

Type: string

Description: Project ID

Parameter: projectName

Type: string

Description: Project Name

Parameter: projectDomainId

Type: string

Description: Project Domain Id

Parameter: userDomainId

Type: string

Description: User Domain Id

Parameter: keyPairName

Type: string

Description: SSH Key Pair Name

Parameter: openStackVersion

Type: string

Description: OpenStack release version (e.g. 2015.1.3)

Parameter: openStackVersionName

Type: string

Description: OpenStack release codename (e.g. Kilo)

Parameter: extensions

Type: list of OSCloudExtension

Description: List of extensions

Parameter: defaultRegion

Type: reference to OSCloudRegion or None

Description: Default region to start instances

Parameter: defaultFlavor

Type: reference to OSCloudFlavor or None

Description: Default cloud node flavor

Parameter: defaultDirectorFlavor

Type: reference to OSCloudFlavor or None

Description: Default cloud director Flavor

Parameter: defaultImage

Type: string

Description: Default node-installer image, can be overridden in the OS disk

5.2.405 OSCloudRegion: CloudRegion

parent: CloudRegion

Parameter: id

Type: string

Description: The ID of the region

5.2.406 OSCloudSettings: CloudSettings

parent: CloudSettings

Parameter: instanceId

Type: string

Description: Unique ID of the instance in OpenStack (the UUID).

Parameter: secGroupId

Type: string

Description: Security group name/ID

Parameter: region

Type: reference to OSCloudRegion

Description: The region of the cloud the VM is located in.

Parameter: flavor

Type: reference to OSCloudFlavor

Description: Instance Flavor (the type of the VM).

Parameter: image

Type: string

Description: The name of the cloud image used for creating the VM.

Parameter: disks

Type: list of OSCloudDisk

Description: Definitions of storage devices of the VM.

Parameter: availabilityZone

Type: string

Description: Availability zone the VM is supposed to be created in. If left empty, the availability zone will be automatically assigned by the cloud.

Parameter: externalIP

Type: IP

Description: The external IP address as set by the cloudprovider

Parameter: useKernelAndInitrdFromTheSoftwareImage

Type: boolean

Description: Make the cloud node's node-installer download the kernel and the initrd from the software image configured for this cloud node and then reboot the cloud node to use those, instead of using the kernel and initrd already present on the node-installer's cloud image.

5.2.407 `OSCloudSwapDisk: OSCloudDisk`**parent:** OSCloudDisk**5.2.408** `OSCloudVolumeDisk: OSCloudDisk`**parent:** OSCloudDisk**Parameter:** `imageId`**Type:** string**Description:** Image ID to use as source for this disk**Parameter:** `snapshotId`**Type:** string**Description:** Snapshot ID to use as source for this disk**Parameter:** `volumeId`**Type:** string**Description:** Volume ID to use as source for this disk**5.2.409** `OSServiceConfig: Entity`**parent:** Entity**Parameter:** `name`**Type:** string**Description:** Name**Parameter:** `monitored`**Type:** boolean**Description:** CMDaemon will periodically check if the service is running**Parameter:** `autostart`**Type:** boolean**Description:** CMDaemon will restart a failed service**Parameter:** `runIf`**Type:** enum**Description:** Only run this service in the specified state**Parameter:** `belongsToRole`**Type:** boolean**Description:** Service is initialized as part of an assigned role**Parameter:** `addFromRole`**Type:** boolean**Description:** *none***Parameter:** `fromGenericRole`**Type:** boolean

Description: *none*

Parameter: `roleKey`

Type: unsigned integer

Description: *none*

Parameter: `extraKey`

Type: unsigned integer

Description: *none*

Parameter: `internal`

Type: boolean

Description: *none*

Parameter: `serviceType`

Type: unsigned integer

Description: *none*

Parameter: `sicknessCheckScript`

Type: string

Description: Script for sickness checking (no script means no sickness checks)

Parameter: `sicknessCheckScriptTimeout`

Type: unsigned integer

Description: Timeout after which the script is killed

Parameter: `sicknessCheckInterval`

Type: unsigned integer

Description: Sickness checks interval (rounded up to 30s monitoring interval)

Parameter: `scriptTimeout`

Type: integer

Description: Service operation timeout

5.2.410 `OSService:Entity`

parent: Entity

Parameter: `refOSServiceConfigUniqueKey`

Type: unsigned integer

Description: OSServiceConfig

Parameter: `name`

Type: string

Description: *none*

Parameter: `status`

Type: enum

Description: *none*

Parameter: `refNodeUniqueKey`

Type: unsigned integer

Description: Node

Parameter: `isRealService`

Type: boolean

Description: *none*

Parameter: `sicknessMessage`

Type: string

Description: *none*

5.2.411 Package: Entity

parent: Entity

Parameter: `refNodeUniqueKey`

Type: unsigned integer

Description: Node

Parameter: `type`

Type: enum

Description: Type of package manager

Parameter: `name`

Type: string

Description: Name

Parameter: `version`

Type: string

Description: Version

Parameter: `release`

Type: string

Description: Release

Parameter: `arch`

Type: string

Description: Version

Parameter: `buildDate`

Type: timestamp

Description: Build date

Parameter: `installDate`

Type: timestamp

Description: Install date

Parameter: size

Type: unsigned integer

Description: Size

Parameter: installed

Type: boolean

Description: Installed

5.2.412 Partition: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: clusterName

Type: string

Description: Cluster name

Parameter: primaryHeadNode

Type: reference to HeadNode

Description: Primary head node

Parameter: failover

Type: CMDaemonFailover

Description: Manage failover setup for this cluster

Parameter: timeZoneSettings

Type: TimeZoneSettings or None

Description: Time zone

Parameter: adminEmail

Type: list of strings

Description: Administrator's email

Parameter: slaveName

Type: string

Description: Default prefix to identify nodes. eg node003 (basename = node)

Parameter: slaveDigits

Type: unsigned integer

Description: Number of digits used to identify nodes. eg node003 (digits = 3)

Parameter: nameServers

Type: list of strings

Description: Name servers

Parameter: `nameServersFromDhcp`

Type: list of strings

Description: Name servers provided by DHCP, edit the name servers property instead

Parameter: `timeServers`

Type: list of strings

Description: NTP time servers

Parameter: `searchDomains`

Type: list of strings

Description: DNS search domains

Parameter: `externallyVisibleIp`

Type: IP

Description: IP that external sites see when headnode connects

Parameter: `externalNetwork`

Type: reference to Network

Description: External network

Parameter: `defaultCategory`

Type: reference to Category

Description: Default category for new nodes

Parameter: `archOS`

Type: list of ArchOS

Description: Architecture operating system

Parameter: `burnConfigs`

Type: list of BurnConfig

Description: Burn configurations

Parameter: `failoverGroups`

Type: list of CMDaemonFailoverGroup

Description: Failover group configurations

Parameter: `resourcePools`

Type: list of ResourcePool

Description: Resource pools

Parameter: `defaultBurnConfig`

Type: element of burnConfigs

Description: Default burn configuration

Parameter: `bmcSettings`

Type: BMCSettings or None

Description: Configure the baseboard management controller settings

Parameter: snmpSettings

Type: SNMPSettings or None

Description: Configure the cluster wide SNMP settings

Parameter: selinuxSettings

Type: SELinuxSettings or None

Description: Configure the SELinux settings

Parameter: managementNetwork

Type: reference to Network

Description: Determines what network should be used for management traffic.

Parameter: notes

Type: string

Description: Administrator notes

Parameter: provisioningSettings

Type: ProvisioningSettings

Description: Configure the provisioning settings

Parameter: relayHost

Type: string

Description: SMTP mail relay host

Parameter: noZeroConf

Type: boolean

Description: Add nozeroconf to network configuration

Parameter: proxySettings

Type: ProxySettings or None

Description: Configure the proxy server settings

Parameter: fabricConfigurations

Type: list of FabricConfiguration

Description: Cluster wide fabric configuration

Parameter: autosign

Type: enum

Description: Sign certificates for node installer request according to network settings.

5.2.413 PBSJobQueueStat: JobQueueStat

parent: JobQueueStat

Parameter: held

Type: unsigned integer

Description: Held jobs

Parameter: `waiting`

Type: unsigned integer

Description: Waiting jobs

5.2.414 `PBSJobQueue: JobQueue`

parent: `JobQueue`

Parameter: `queueType`

Type: enum

Description: Pbs Pro queue type

Parameter: `fromRouteOnly`

Type: boolean

Description: Receive jobs from route queues only

Parameter: `routeHeldJobs`

Type: boolean

Description: Specifies whether jobs in the held state can be routed from this queue

Parameter: `routeWaitingJobs`

Type: boolean

Description: Specifies whether jobs whose `execution_time` attribute value is in the future can be routed from this queue

Parameter: `routeLifetime`

Type: unsigned integer

Description: The maximum time a job is allowed to reside in a routing queue

Parameter: `routeRetryTime`

Type: unsigned integer

Description: Route retry time in routing queue

Parameter: `routes`

Type: list of strings

Description: Route of queue path (`route_destination` parameter in `qmgr`)

Parameter: `defaultQueue`

Type: boolean

Description: Specifies the queue which is to accept jobs when no queue is requested

Parameter: `minWalltime`

Type: string

Description: Minimum runtime of jobs running in a queue

Parameter: `maxWalltime`

Type: string

Description: Maximum runtime of jobs running in a queue

Parameter: `defaultWalltime`

Type: `string`

Description: Maximum runtime of jobs running in a queue

Parameter: `maxQueued`

Type: `unsigned integer`

Description: Maximum number allowed to reside in a queue at any given time (0 is the same as infinite)

Parameter: `maxRunning`

Type: `unsigned integer`

Description: Maximum number of jobs allowed to run at any given time (0 is the same as infinite)

Parameter: `priority`

Type: `integer`

Description: Priority of a queue against other queues of the same type [-1024; 1024]

Parameter: `enabled`

Type: `boolean`

Description: When true, a queue will accept new jobs; when false, a queue is disabled and will not accept jobs

Parameter: `started`

Type: `boolean`

Description: Jobs may be scheduled for execution from this queue; when false, a queue is considered stopped

Parameter: `aclHostEnable`

Type: `boolean`

Description: When true directs the server to use the `acl_hosts` access list for the named queue

5.2.415 `PBSJob: Job`

parent: `Job`

5.2.416 `PbsPelog: Entity`

parent: `Entity`

Parameter: `enabled`

Type: `boolean`

Description: Enable hook

Parameter: `name`

Type: `string`

Description: Hook name in PBS

Parameter: `events`

Type: list of strings

Description: List of hook events

Parameter: path

Type: string

Description: Fully qualified pathname of a hook script

Parameter: defaultAction

Type: enum

Description: PBS prolog/epilog default action

Parameter: enableParallel

Type: boolean

Description: Enable parallel prologues/epilogues that run on sister nodes

Parameter: verboseUserOutput

Type: boolean

Description: Provide verbose hook output to the user's .o/.e file

Parameter: torqueCompatible

Type: boolean

Description: Make torque compatible

Parameter: order

Type: unsigned integer

Description: Hook order

Parameter: alarm

Type: unsigned integer

Description: Hook alarm time (timeout)

Parameter: debug

Type: boolean

Description: Enable hook debug (in PBS)

5.2.417 PbsProcGroupsSettings:WlmCgroupsSettings

parent: WlmCgroupsSettings

Parameter: jobCgroupTemplate

Type: string

Description: Template for job cgroup path (\$ESCAPE_JOBID will be replaced by systemd-escape of job id)

Parameter: cgroupPrefix

Type: string

Description: Cgroup prefix that used by PBS when the cgroup is created

Parameter: enabled

Type: boolean

Description: When set the cgroups hook is enabled (in the hook config: enabled)

Parameter: nvidiaSmi

Type: string

Description: The location of the nvidia-smi command (in the hook config: nvidia-smi)

Parameter: killTimeout

Type: unsigned integer

Description: Maximum number of seconds the hook spends attempting to kill job processes before destroying cgroups (in the hook config: kill_timeout)

Parameter: serverTimeout

Type: unsigned integer

Description: Maximum number of seconds the hook spends attempting to fetch node info from the server (in the hook config: server_timeout)

Parameter: useHyperthreads

Type: boolean

Description: All CPU threads are made available to jobs (in the hook config: use_hyperthreads)

Parameter: ncpusAreCores

Type: boolean

Description: ncpus of a vnode is the number of cores, and the hook assigns all threads of each core to a job (in the hook config: ncpus_are_cores)

Parameter: cpuacctEnabled

Type: boolean

Description: Enable cpuacct cgroup controller for jobs

Parameter: cpusetEnabled

Type: boolean

Description: Enable cpuset cgroup controller for jobs

Parameter: devicesEnabled

Type: boolean

Description: Enable devices cgroup controller for jobs

Parameter: devicesAllow

Type: list of strings

Description: Parameter specifies how access to devices will be controlled

Parameter: hugetlbEnabled

Type: boolean

Description: Enable hugetlb cgroup controller for jobs

Parameter: hugetlbDefault

Type: unsigned integer

Description: The amount of huge page memory assigned to the cgroup when the job does not request hpmem

Parameter: `hugetlbReservePercent`

Type: unsigned integer

Description: The percentage of available huge page memory (hpmem) that is not to be assigned to jobs

Parameter: `hugetlbReserveAmount`

Type: unsigned integer

Description: An amount of available huge page memory (hpmem) that is not to be assigned to jobs

Parameter: `memoryEnabled`

Type: boolean

Description: Enable memory cgroup controller for jobs

Parameter: `memorySoftLimit`

Type: boolean

Description: If false PBS uses hard memory limits which prevent the processes from ever exceeding their requested memory usage

Parameter: `memoryDefault`

Type: unsigned integer

Description: Amount of memory assigned to the job if it doesn't request any memory

Parameter: `memoryReservePercent`

Type: unsigned integer

Description: The percentage of available physical memory that is not to be assigned to jobs

Parameter: `memoryReserveAmount`

Type: unsigned integer

Description: A specific amount of available physical memory that is not to be assigned to jobs

Parameter: `memswEnabled`

Type: boolean

Description: Enable memsw cgroup controller for jobs

Parameter: `memswDefault`

Type: unsigned integer

Description: Specifies the amount of memory + swap assigned to the job if it doesn't request any memory

Parameter: `memswReservePercent`

Type: unsigned integer

Description: Percentage of available swap that is not to be assigned to jobs

Parameter: `memswReserveAmount`

Type: unsigned integer

Description: An amount of available swap that is not to be assigned to jobs

5.2.418 PbsProClientRole: PbsProRole

parent: PbsProRole

Parameter: slots

Type: string

Description: Number of slots available on this node/category

Parameter: queues

Type: list of references to PbsProJobQueue

Description: Queues this node/nodes in this category belongs to

Parameter: allQueues

Type: boolean

Description: When set, the role will provide all available queues. (The queues property will then be ignored.)

Parameter: gpus

Type: unsigned integer

Description: Number of gpus

Parameter: gpuDevices

Type: list of strings

Description: /dev/* available to workload management

Parameter: properties

Type: list of strings

Description: Node properties (a 'pnames' node attribute)

Parameter: momSettings

Type: PbsProMomSettings

Description: Submode containing pbs_mom daemon settings

Parameter: commSettings

Type: PbsProCommSettings

Description: Submode containing pbs_comm settings

Parameter: nodeCustomizations

Type: list of WlmNodeCustomizationEntry

Description: PBS Pro node custom properties

5.2.419 PbsProCommSettings: Entity

parent: Entity

Parameter: commRouters

Type: list of strings

Description: Tells a pbs_comm where to find its fellow communication daemons (PBS_COMM_ROUTERS parameter in pbs.conf)

Parameter: commThreads

Type: unsigned integer

Description: Tells pbs_comm how many threads to start (PBS_COMM_THREADS parameter in pbs.conf)

Parameter: startComm

Type: boolean

Description: Configure pbs_com daemon start (PBS_START_COMM parameter in pbs.conf)

5.2.420 PbsProJobQueueStat: PBSJobQueueStat

parent: PBSJobQueueStat

5.2.421 PbsProJobQueue: PBSJobQueue

parent: PBSJobQueue

5.2.422 PbsProJob: PBSJob

parent: PBSJob

5.2.423 PbsProMomSettings: Entity

parent: Entity

Parameter: outputHostname

Type: string

Description: Host to which all job standard output and standard error are delivered (PBS_OUTPUT_HOST_NAME parameter in pbs.conf)

Parameter: leafRouters

Type: list of strings

Description: Location of endpoint's pbs_comm daemon (PBS_LEAF_ROUTERS parameter in pbs.conf)

Parameter: leafName

Type: string

Description: Leaf name (PBS_LEAF_NAME parameter in pbs.conf)

Parameter: leafManagementFqdn

Type: boolean

Description: Leaf name in pbs.conf is appended with FQDN from management network

Parameter: startMom

Type: boolean

Description: Configure pbs_mom daemon start (PBS_START_MOM parameter in pbs.conf)

Parameter: spool

Type: string

Description: PBS Pro mom spool directory

5.2.424 PbsProRole: Role

parent: Role

Parameter: wlmCluster

Type: reference to PbsProWlmCluster

Description: WLM cluster link to this WLM role

5.2.425 PbsProServerRole: PbsProRole

parent: PbsProRole

Parameter: externalServer

Type: boolean

Description: PBS Pro server daemons are running on some external machine

Parameter: commSettings

Type: PbsProCommSettings

Description: Submode containing pbs_comm settings

5.2.426 PbsProSubmitRole: WlmSubmitRole

parent: WlmSubmitRole

Parameter: pbsProWlmClusters

Type: list of references to PbsProWlmCluster

Description: List of PbsPro clusters which the role belongs to

5.2.427 PbsProWlmCluster: WlmCluster

parent: WlmCluster

Parameter: version

Type: string

Description: Major PBS Pro version

Parameter: placeholders

Type: list of JobQueuePlaceholder

Description: Job queue node placeholders mode

Parameter: cgroups

Type: PbsProCgroupsSettings

Description: Submode containing PBS Pro related cgroups settings

Parameter: pelogs

Type: list of PbsPelog

Description: Submode containing a list of PBS Pro related prolog and epilog (pelog) hook settings

Parameter: enableJobHistory

Type: boolean

Description: Keep all job attribute information in PBS Pro

Parameter: jobHistoryDuration

Type: string

Description: Specifies the length of time that PBS will keep each job's history

Parameter: prefix

Type: string

Description: PBS Pro installation directory

Parameter: spool

Type: string

Description: PBS Pro server spool directory

Parameter: subType

Type: enum

Description: PBS Pro subtype

Parameter: flatUid

Type: boolean

Description: Specifies whether a username at the submission host must be the same as the one at the server host

Parameter: maxRunning

Type: unsigned integer

Description: Maximum number of jobs allowed to run at any given time (0 is the same as infinite)

5.2.428 PDUPort: Entity

parent: Entity

Parameter: pdu

Type: reference to PowerDistributionUnit

Description: Pointer to a power distribution unit

Parameter: prt

Type: unsigned integer

Description: Port number on the power distribution unit

5.2.429 PhysicalNode: ComputeNode

parent: ComputeNode

5.2.430 PingResult: Entity

parent: Entity

Parameter: source

Type: unsigned integer

Description: Source

Parameter: destination

Type: unsigned integer

Description: Destination

Parameter: result

Type: enum

Description: Result of the ping operation

Parameter: latency

Type: float

Description: Round trip latency

Parameter: sequenceId

Type: unsigned integer

Description: Sequence ID

5.2.431 PingStatisticsGlobalInformation: Entity

parent: Entity

Parameter: count

Type: unsigned integer

Description: none

Parameter: average

Type: float

Description: none

Parameter: minimum

Type: float

Description: none

Parameter: maximum

Type: float

Description: none

Parameter: uniformity

Type: float

Description: none

5.2.432 PingStatisticsPairInformation: Entity

parent: Entity

Parameter: source

Type: unsigned integer

Description: none

Parameter: destination

Type: unsigned integer

Description: none

Parameter: count

Type: unsigned integer

Description: *none*

Parameter: `average`

Type: `float`

Description: *none*

Parameter: `minimum`

Type: `float`

Description: *none*

Parameter: `maximum`

Type: `float`

Description: *none*

Parameter: `uniformity`

Type: `float`

Description: *none*

5.2.433 PingStatisticsSourceInformation: Entity

parent: `Entity`

Parameter: `source`

Type: `unsigned integer`

Description: *none*

Parameter: `count`

Type: `unsigned integer`

Description: *none*

Parameter: `average`

Type: `float`

Description: *none*

Parameter: `minimum`

Type: `float`

Description: *none*

Parameter: `maximum`

Type: `float`

Description: *none*

Parameter: `uniformity`

Type: `float`

Description: *none*

5.2.434 PingStatistics:Entity**parent:** Entity**Parameter:** totalOk**Type:** unsigned integer**Description:** Total number of pings that returned OK**Parameter:** totalError**Type:** unsigned integer**Description:** Total number of pings that returned error**Parameter:** totalFailed**Type:** unsigned integer**Description:** Total number of pings that returned failed**Parameter:** totalTimeout**Type:** unsigned integer**Description:** Total number of pings that returned timeout**Parameter:** totalNoAddress**Type:** unsigned integer**Description:** Total number of pings had no address**Parameter:** totalUnreachable**Type:** unsigned integer**Description:** Total number of pings that returned unreachable**Parameter:** total**Type:** unsigned integer**Description:** Total number of pings done**Parameter:** pairInformation**Type:** list of PingStatisticsPairInformation**Description:** Ping pair information statistics**Parameter:** sourceInformation**Type:** list of PingStatisticsSourceInformation**Description:** Ping source information statistics**Parameter:** globalInformation**Type:** PingStatisticsGlobalInformation**Description:** Ping global information statistics**Parameter:** results**Type:** list of PingResult**Description:** Raw ping results

5.2.435 PowerDistributionUnit: Device**parent:** Device**Parameter:** ip**Type:** IP**Description:** IP address**Parameter:** network**Type:** reference to Network or None**Description:** Network to which this unit is connected**Parameter:** model**Type:** string**Description:** PowerDistributionUnit model name**Parameter:** ports**Type:** integer**Description:** Number of outlets**Parameter:** banks**Type:** integer**Description:** Number of banks**Parameter:** phases**Type:** integer**Description:** Number of phases**Parameter:** snmpSettings**Type:** SNMPSettings or None**Description:** Configure the cluster wide SNMP settings**Parameter:** firmware**Type:** string**Description:** Firmware revision**Parameter:** controlScript**Type:** string**Description:** *none***Parameter:** controlScriptTimeout**Type:** unsigned integer**Description:** *none***5.2.436 PowerOperationHistory: Entity****parent:** Entity**Parameter:** refDeviceUniqueKey**Type:** unsigned integer

Description: Device

Parameter: `executionTime`

Type: unsigned integer

Description: Execution time in milliseconds after epoch

Parameter: `operation`

Type: enum

Description: Operation

Parameter: `success`

Type: boolean

Description: Success

5.2.437 `PowerOperationStatus: Entity`

parent: Entity

Parameter: `state`

Type: enum

Description: State of the operation

Parameter: `operation`

Type: enum

Description: Operation to be performed

Parameter: `executionTime`

Type: timestamp

Description: Execution time

Parameter: `info`

Type: string

Description: Extra information about the power operation

Parameter: `retries`

Type: unsigned integer

Description: Number of retries

Parameter: `devices`

Type: list of unsigned numbers

Description: Devices

Parameter: `index`

Type: list of unsigned numbers

Description: Indexes of power operation

Parameter: `gpus`

Type: list of unsigned numbers

Description: GPUs

5.2.438 PowerOperation: Entity

parent: Entity

Parameter: devices

Type: list of unsigned numbers

Description: Devices

Parameter: pduPorts

Type: list of unsigned numbers

Description: A list of (PDU, port) pairs

Parameter: sessionId

Type: unsigned integer

Description: Session id

Parameter: force

Type: boolean

Description: Set to true to also do power operation on closed devices

Parameter: delay

Type: unsigned integer

Description: Delay between sequential operations in milliseconds

Parameter: deviceDelay

Type: list of unsigned numbers

Description: Individual device delay in milliseconds

Parameter: headIndex

Type: unsigned integer

Description: Should be 0

Parameter: operation

Type: enum

Description: Operation to be performed

Parameter: gpus

Type: list of unsigned numbers

Description: GPUs

Parameter: retryCount

Type: unsigned integer

Description: Number of times to retry on failure

Parameter: retryDelay

Type: unsigned integer

Description: Delay between consecutive tries in milliseconds

5.2.439 PowerStatus: Entity

parent: Entity

Parameter: device

Type: unsigned integer

Description: Device

Parameter: host

Type: unsigned integer

Description: none

Parameter: powerDistributionUnit

Type: unsigned integer

Description: none

Parameter: gpu

Type: integer

Description: none

Parameter: prt

Type: unsigned integer

Description: none

Parameter: name

Type: string

Description: none

Parameter: state

Type: enum

Description: none

Parameter: msg

Type: string

Description: none

Parameter: extendedMsg

Type: string

Description: none

Parameter: indexes

Type: list of unsigned numbers

Description: none

Parameter: tracker

Type: unsigned integer

Description: *none*

Parameter: `retries`

Type: unsigned integer

Description: *none*

5.2.440 `PreJobOutput: Entity`

parent: Entity

Parameter: `measurable`

Type: unsigned integer

Description: *none*

Parameter: `value`

Type: float

Description: *none*

Parameter: `output`

Type: string

Description: *none*

Parameter: `failed`

Type: boolean

Description: *none*

Parameter: `reschedule`

Type: boolean

Description: *none*

5.2.441 `PreJobResult: Entity`

parent: Entity

Parameter: `hostname`

Type: string

Description: *none*

Parameter: `nodeKey`

Type: unsigned integer

Description: *none*

Parameter: `output`

Type: list of PreJobOutput

Description: *none*

5.2.442 `Processor: Entity`

parent: Entity

Parameter: `IDs`

Type: list of unsigned numbers

Description: ID

Parameter: physicalIDs

Type: list of unsigned numbers

Description: Physical ID

Parameter: coreIDs

Type: list of unsigned numbers

Description: Core ID

Parameter: vendor

Type: string

Description: Vendor

Parameter: model

Type: string

Description: Model

Parameter: cores

Type: unsigned integer

Description: Cores

Parameter: speed

Type: float

Description: Speed

Parameter: cacheSize

Type: unsigned integer

Description: Cache size

Parameter: bogomips

Type: float

Description: Bogomips

5.2.443 Process:Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: pid

Type: integer

Description: Process ID

Parameter: ppid

Type: integer

Description: Parent PID

Parameter: uid

Type: integer

Description: Owner UID

Parameter: gid

Type: integer

Description: Process' group ID

Parameter: state

Type: string

Description: Process' state

Parameter: cmd

Type: string

Description: The command name

Parameter: size

Type: unsigned integer

Description: Virtual memory size

Parameter: rss

Type: unsigned integer

Description: Resident memory size

Parameter: nbthreads

Type: unsigned integer

Description: Number of threads spawned

Parameter: nbfiledescriptors

Type: unsigned integer

Description: Number of held file descriptors

Parameter: cputime

Type: unsigned integer

Description: CPU time

Parameter: cpuuse

Type: float

Description: CPU usage

Parameter: username

Type: string

Description: Owner name

Parameter: groupname

Type: string

Description: Group name

5.2.444 Profile: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: tokens

Type: list of strings

Description: Tokens

Parameter: accessServices

Type: list of strings

Description: Services

Parameter: nonuser

Type: boolean

Description: True if profile not assignable to users.

5.2.445 ProgramRunnerInput: Entity

parent: Entity

Parameter: user

Type: string

Description: none

Parameter: startInShell

Type: boolean

Description: none

Parameter: cmd

Type: string

Description: none

Parameter: info

Type: string

Description: none

Parameter: args

Type: list of strings

Description: none

Parameter: env

Type: list of strings

Description: *none*

Parameter: datacin

Type: string

Description: *none*

Parameter: mergeCoutCerr

Type: boolean

Description: *none*

Parameter: maxruntime

Type: unsigned integer

Description: *none*

Parameter: updateinterval

Type: unsigned integer

Description: *none*

Parameter: priority

Type: integer

Description: *none*

Parameter: tracker

Type: unsigned integer

Description: *none*

Parameter: logger

Type: enum

Description: *none*

5.2.446 ProgramRunnerKill: Entity

parent: Entity

Parameter: node

Type: unsigned integer

Description: Node key

Parameter: running

Type: integer

Description: Running

Parameter: trackers

Type: list of unsigned numbers

Description: Tackers

Parameter: results

Type: list of signed numbers

Description: results

5.2.447 ProgramRunnerOutput: Entity

parent: Entity

Parameter: node

Type: unsigned integer

Description: none

Parameter: datacout

Type: string

Description: none

Parameter: datacerr

Type: string

Description: none

Parameter: exitcode

Type: integer

Description: none

Parameter: signal

Type: integer

Description: none

Parameter: pid

Type: integer

Description: none

Parameter: runtime

Type: unsigned integer

Description: none

Parameter: state

Type: unsigned integer

Description: none

5.2.448 ProgramRunnerStatus: Entity

parent: Entity

Parameter: startTime

Type: timestamp

Description: none

Parameter: runtime

Type: unsigned integer

Description: none

Parameter: sid

Type: unsigned integer

Description: none

Parameter: running

Type: integer

Description: none

Parameter: unknown

Type: integer

Description: none

Parameter: internal

Type: boolean

Description: none

Parameter: nodes

Type: list of unsigned numbers

Description: none

Parameter: state

Type: list of unsigned numbers

Description: none

Parameter: input

Type: ProgramRunnerInput

Description: none

5.2.449 ProjectManager: Entity

parent: Entity

Parameter: users

Type: list of strings

Description: List of users managed

Parameter: accounts

Type: list of strings

Description: List of accounts managed

Parameter: op

Type: enum

Description: Job needs to belong to one of the users and/or accounts

5.2.450 PrometheusQueryDrilldown: Entity

parent: Entity

Parameter: name

Type: string

Description: The name of the drill down

Parameter: `parameters`

Type: list of strings

Description: Parameters to be passed to the drill down query

Parameter: `query`

Type: reference to `PrometheusQuery` or `None`

Description: Query to execute

5.2.451 `PrometheusQuery:Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: Name

Parameter: `alias`

Type: string

Description: Alternative name

Parameter: `query`

Type: string

Description: PromQL Query

Parameter: `typeClass`

Type: string

Description: Type class, slash(/) separated for levels

Parameter: `description`

Type: string

Description: Description

Parameter: `notes`

Type: string

Description: Notes

Parameter: `startTime`

Type: string

Description: Default query start time

Parameter: `endTime`

Type: string

Description: Default end start time

Parameter: `interval`

Type: float

Description: Interval

Parameter: stalenessDelay

Type: float

Description: Staleness delay

Parameter: access

Type: enum

Description: User access control

Parameter: unit

Type: string

Description: Unit of measure for the query results

Parameter: price

Type: float

Description: Optional price associated with the query results per unit

Parameter: currency

Type: string

Description: Currency

Parameter: preference

Type: unsigned integer

Description: The query with the highest preference be shown by default

Parameter: drilldown

Type: list of PrometheusQueryDrilldown

Description: Manage the drilldown queries

5.2.452 PrometheusRecordingRule: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: sourceLabels

Type: list of strings

Description: Source labels to be translated into target

Parameter: targetLabel

Type: string

Description: Target label

Parameter: valueRegex

Type: string

Description: Regex the value must match for this rule to be applied

Parameter: `valueReplace`

Type: `string`

Description: Replace value with regex replace (use \$1 for matchers)

Parameter: `disabled`

Type: `boolean`

Description: Disable this rule

Parameter: `keepOriginalLabels`

Type: `boolean`

Description: Keep original labels

5.2.453 `ProvisioningNodeStatus: Entity`

parent: `Entity`

Parameter: `slotsCapacity`

Type: `unsigned integer`

Description: Number of provisioning requests this node can handle in parallel.

Parameter: `slotsUsed`

Type: `unsigned integer`

Description: Number of provisioning requests currently being handled by this node.

Parameter: `nodeKey`

Type: `unsigned integer`

Description: The provisioning node.

Parameter: `drained`

Type: `boolean`

Description: Drained and not available for future request

Parameter: `imageKeys`

Type: `list of unsigned numbers`

Description: *none*

Parameter: `upToDate`

Type: `list of booleans`

Description: *none*

Parameter: `nodeGroupKeys`

Type: `list of unsigned numbers`

Description: Node groups this provisioning node will provide images for.

Parameter: `categoryKeys`

Type: `list of unsigned numbers`

Description: Categories this provisioning node will provide images for.

Parameter: rackKeys

Type: list of unsigned numbers

Description: Racks this provisioning node will provide images for.

5.2.454 ProvisioningProcessorJob: Entity

parent: Entity

Parameter: jobID

Type: unsigned integer

Description: Internal provisioning system job ID.

Parameter: requestID

Type: unsigned integer

Description: Provisioning request ID.

Parameter: source

Type: reference to Node

Description: Source node.

Parameter: sourcePath

Type: string

Description: Path on the source node.

Parameter: destination

Type: reference to Node

Description: Destination node.

Parameter: destinationPath

Type: string

Description: Path on the destination node.

Parameter: isFromNodeInstaller

Type: boolean

Description: Set if the request came from the node-installer.

Parameter: isBackupFromBackup

Type: boolean

Description: Set if the request came a backup of a backup.

Parameter: userName

Type: string

Description: Rsync username.

Parameter: password

Type: string

Description: Rsync password.

Parameter: rsyncdPort

Type: unsigned integer

Description: Rsync port.

Parameter: includelist

Type: string

Description: Rsync include list.

Parameter: excludelist

Type: string

Description: Rsync exclude list.

Parameter: dryrun

Type: boolean

Description: If set, a dry run will be performed, no data is written.

Parameter: syncMode

Type: unsigned integer

Description: Sync mode.

Parameter: state

Type: unsigned integer

Description: Job state.

Parameter: errorMessage

Type: string

Description: Error message.

Parameter: errorDetails

Type: string

Description: Error details.

Parameter: fspart

Type: reference to FSPart

Description: FSPart

Parameter: index

Type: unsigned integer

Description: Index

5.2.455 ProvisioningRequestStatus: Entity

parent: Entity

Parameter: requestIDs

Type: list of unsigned numbers

Description: Provisioning request IDs.

Parameter: `sourceNodeKey`

Type: unsigned integer

Description: Source node handling the provisioning request.

Parameter: `sourcePath`

Type: string

Description: Path on the source node.

Parameter: `destinationNodeKey`

Type: unsigned integer

Description: Destination node for the provisioning request.

Parameter: `destinationPath`

Type: string

Description: Path on the destination node.

Parameter: `dryRun`

Type: boolean

Description: In dry-run mode no data is actually written. See provisioning log for results.

Parameter: `syncMode`

Type: unsigned integer

Description: Sync mode used for the provisioning request.

Parameter: `state`

Type: unsigned integer

Description: State of the provisioning request.

Parameter: `errorMessage`

Type: string

Description: Error message.

Parameter: `errorDetails`

Type: string

Description: Detailed error message.

Parameter: `jobFailureCounter`

Type: unsigned integer

Description: Number of times the provisioning job has failed.

Parameter: `isFromNodeInstaller`

Type: boolean

Description: Set if the request came from the node-installer.

Parameter: `requesterSessions`

Type: list of unsigned numbers

Description: *none*

Parameter: schedulerInfo

Type: list of strings

Description: Details on how the provisioning request was scheduled.

5.2.456 ProvisioningRole: Role

parent: Role

Parameter: maxProvisioningNodes

Type: unsigned integer

Description: Maximum number of nodes that can be provisioned in parallel

Parameter: loadWeight

Type: float

Description: Load weight factor, higher factor will reduce the virtual load on the node and make it be used less. Value will be set to 1 if defined lower as lower than 1.

Parameter: localImages

Type: list of references to SoftwareImage

Description: List of software images provided from local disk

Parameter: includeRevisionsOfLocalImages

Type: boolean

Description: Include revisions of local images

Parameter: sharedImages

Type: list of references to SoftwareImage

Description: List of software images provided from shared storage

Parameter: allImages

Type: enum

Description: When set, the role will provide all available images. (The images property will then be ignored.)

Parameter: nodegroups

Type: list of references to NodeGroup

Description: List of node groups for which to provide images

Parameter: categories

Type: list of references to Category

Description: List of categories for which to provide images

Parameter: racks

Type: list of references to Rack

Description: List of racks for which to provide images

Parameter: localProvisioning

Type: boolean

Description: Speeds up initial provisioning of cloud directors and cloud provisioning nodes. When enabled, if a software image is used as the rootfs of the provisioning node and is also to be used by that node to provision other cloud nodes, during the initial FULL install that image will be transferred only once to the provisioning node, instead of twice.

5.2.457 ProvisioningSettings: Entity

parent: Entity

Parameter: dirtyAutoUpdateTimeout

Type: unsigned integer

Description: Delay after which a provisioning node is considered out of date and automatically updated when needed (0 to disable automatic updates)

Parameter: autoUpdatePeriod

Type: unsigned integer

Description: Period after which all provisioning nodes are automatically updated (0 to disable automatic updates)

Parameter: noRestartRequiredPeriod

Type: unsigned integer

Description: Period in which a second request doesn't require a restart of a recently started rsync

Parameter: minimalLoadForOffload

Type: float

Description: Minimal provisioning load on the active head node before which dirty provisioning nodes are updated

Parameter: headNodeLoadMultiplier

Type: float

Description: Load multiplier to reduce the work for the head node and offload more to the provisioning nodes

Parameter: useGNSSLocationData

Type: boolean

Description: Use GNSS location data where available to find and prefer the closest provisioning node

5.2.458 ProvisioningStatus: Entity

parent: Entity

Parameter: provisioningRequestStatusList

Type: list of ProvisioningRequestStatus

Description: none

Parameter: provisioningNodeStatusList

Type: list of ProvisioningNodeStatus

Description: none

5.2.459 ProxySettings: Entity**parent:** Entity**Parameter:** proxyHttp**Type:** string**Description:** HTTP proxy address which will be used for the node connections to HTTP resources**Parameter:** proxyHttpUser**Type:** string**Description:** HTTP proxy username for authentication**Parameter:** proxyHttpPass**Type:** string**Description:** HTTP proxy password for authentication**Parameter:** proxyHttps**Type:** string**Description:** HTTPS proxy address which will be used for the node connections to HTTPS resources**Parameter:** proxyHttpsUser**Type:** string**Description:** HTTPS proxy username for authentication**Parameter:** proxyHttpsPass**Type:** string**Description:** HTTPS proxy password for authentication**Parameter:** proxyFtp**Type:** string**Description:** FTP proxy address which will be used for the node connections to FTP resources**Parameter:** proxyFtpUser**Type:** string**Description:** FTP proxy username for authentication**Parameter:** proxyFtpPass**Type:** string**Description:** FTP proxy password for authentication**Parameter:** noProxy**Type:** list of strings**Description:** Hosts to be accessed without proxy**5.2.460 RackPosition: Entity****parent:** Entity**Parameter:** rack**Type:** reference to Rack

Description: Name of the rack in which the device resides

Parameter: `position`

Type: unsigned integer

Description: Position of the node in the rack, top is 1

Parameter: `height`

Type: unsigned integer

Description: Height of the node

5.2.461 `RackSensor: Device`

parent: Device

Parameter: `ip`

Type: IP

Description: Ip address

Parameter: `network`

Type: reference to Network or None

Description: Network to which this switch is connected

Parameter: `model`

Type: string

Description: RackSensor model name

Parameter: `sensors`

Type: list of Sensor

Description: Sensors in the rackmon kit

Parameter: `snmpSettings`

Type: SNMPSettings or None

Description: Configure the cluster wide SNMP settings

5.2.462 `Rack: Entity`

parent: Entity

Parameter: `name`

Type: string

Description: Name

Parameter: `room`

Type: string

Description: Name of the room

Parameter: `xCoordinate`

Type: unsigned integer

Description: Position in the room

Parameter: `yCoordinate`

Type: unsigned integer

Description: Position in the room

Parameter: `height`

Type: unsigned integer

Description: Height

Parameter: `width`

Type: unsigned integer

Description: Width

Parameter: `depth`

Type: unsigned integer

Description: Depth

Parameter: `angle`

Type: unsigned integer

Description: Angle of the rack, 90 face right, 180 face backwards, 270 face left

Parameter: `inverted`

Type: boolean

Description: Inverted racks have position 1 at the bottom

Parameter: `notes`

Type: string

Description: Administrator notes

5.2.463 `RadosGatewayRole: Role`

parent: `Role`

Parameter: `serverRoot`

Type: string

Description: Fast CGI server root path

Parameter: `serverSocket`

Type: string

Description: Fast CGI server socket

Parameter: `serverPort`

Type: unsigned integer

Description: Gateway port

Parameter: `serverScript`

Type: string

Description: Fast CGI server script content

Parameter: `module`

Type: string

Description: Apache fastcgi module file name

Parameter: nssDbPath

Type: string

Description: Path to NSS database directory

5.2.464 RemoteNodeInstallerInteraction: Entity

parent: Entity

Parameter: type

Type: enum

Description: Type

Parameter: node

Type: reference to ComputeNode

Description: The node requesting interaction

Parameter: description

Type: string

Description: The description of the interaction

Parameter: message

Type: string

Description: The message send back via the manager

Parameter: payload

Type: string

Description: The resulting payload for the interaction

Parameter: firstSeen

Type: unsigned integer

Description: The first time this interaction was requested

Parameter: lastSeen

Type: unsigned integer

Description: The last time this interaction was requested

Parameter: wasConfirmed

Type: boolean

Description: Whether the interaction has been confirmed

Parameter: wasDenied

Type: boolean

Description: Whether the interaction has been denied (rejected)

Parameter: invalid

Type: boolean

Description: Whether the interaction was found to be invalid

Parameter: force

Type: boolean

Description: Flag to indicate a forced passphrase change

Parameter: reset

Type: boolean

Description: Flag to indicate a custom passphrase should be reset to blank

5.2.465 RemoteSetupExecution: Entity

parent: Entity

Parameter: id

Type: integer

Description: A unique identified of the remote cm-*-setup execution.

Parameter: inputConfig

Type: string

Description: cm-*-setup yaml input configuration file (used with '-c' flag).

Parameter: exitCode

Type: integer

Description: The return exit code from cm-setup (once the execution has been completed).

Parameter: signal

Type: integer

Description: Number identifying the signal which interrupted the execution.

Parameter: datacout

Type: list of strings

Description: Data which was emitted on stdout from cm-*-setup.

5.2.466 ReportQuery: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: query

Type: string

Description: Report query

Parameter: description

Type: string

Description: Description

Parameter: notes

Type: string

Description: Notes

Parameter: interval

Type: float

Description: Interval

5.2.467 ResourcePoolStatus: Entity

parent: Entity

Parameter: nodes

Type: list of unsigned numbers

Description: Nodes

Parameter: nodeStatus

Type: list of unsigned numbers

Description: Node status

Parameter: resourceKeys

Type: list of unsigned numbers

Description: Resource key

Parameter: resourceStatus

Type: list of unsigned numbers

Description: Resource status

Parameter: resourceMessages

Type: list of strings

Description: Resource message

5.2.468 ResourcePool: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: nodes

Type: list of references to Node

Description: List of nodes who share the resources

Parameter: configurationOverlay

Type: reference to ConfigurationOverlay

Description: Configuration overlay which defines the nodes that share the resources

Parameter: priority

Type: list of floating point numbers

Description: Distribution priorities for the nodes

Parameter: `hostname`

Type: `string`

Description: Hostname all IP resources will point to

Parameter: `resources`

Type: `list of BasicResource`

Description: Resources to be divided among the given nodes

Parameter: `waitTime`

Type: `unsigned integer`

Description: How long to wait after a node goes down before migrating it's resources

Parameter: `disabled`

Type: `boolean`

Description: Disabled the entire resource pool

Parameter: `generateDNSZone`

Type: `enum`

Description: Specify which DNS zones should be written

5.2.469 `Role: Entity`

parent: `Entity`

Parameter: `name`

Type: `string`

Description: Name

Parameter: `addServices`

Type: `boolean`

Description: Add services to nodes which belong to this node. Be careful setting this to false.

Parameter: `fspartAssociations`

Type: `list of FSPartAssociation`

Description: Provisioning associations linked to this role

5.2.470 `Route: Entity`

parent: `Entity`

Parameter: `refNodeUniqueKey`

Type: `unsigned integer`

Description: Node

Parameter: `destination`

Type: `IP`

Description: The destination network or destination host.

Parameter: gateway

Type: IP

Description: Gateway

Parameter: netmask

Type: IP

Description: The netmask for the destination

Parameter: flags

Type: string

Description: Flags

Parameter: metric

Type: unsigned integer

Description: The 'distance' to the target (usually counted in hops)

Parameter: ref

Type: unsigned integer

Description: Number of references to this route

Parameter: use

Type: unsigned integer

Description: Number of lookups for the route

Parameter: interface

Type: string

Description: *none*

5.2.471 ScaleAdvancedSettings: Entity

parent: Entity

Parameter: debug2

Type: boolean

Description: Print very low level debug messages to the log

Parameter: maxThreads

Type: unsigned integer

Description: Maximum number of threads for sequential operations

Parameter: powerOperationTimeout

Type: unsigned integer

Description: Power Operation Timeout (in seconds)

Parameter: connectionRetryInterval

Type: unsigned integer

Description: Connection to CMDaemon retry interval (in seconds)

Parameter: logFile

Type: string

Description: Path to cm-scale logs file

Parameter: pinQueues

Type: boolean

Description: Pin workload to its queue nodes

Parameter: mixLocations

Type: boolean

Description: Allow to map workload to different locations (for example, cloud and local)

Parameter: failedNodeIsHealthy

Type: boolean

Description: Do not start a new node instead of a failed one

Parameter: azureDiskAccountNodes

Type: unsigned integer

Description: Number of nodes that can share the same Azure disk account

Parameter: azureDiskImageName

Type: string

Description: Image name for Azure disks

Parameter: azureDiskContainerName

Type: string

Description: Container name for Azure disks

Parameter: azureDiskAccountPrefix

Type: string

Description: Prefix for randomly generated Azure disk account names

Parameter: nodeSelection

Type: enum

Description: Type of node selection used by Auto Scaler

Parameter: nodeSelectionUptimePeriod

Type: unsigned integer

Description: Period of time in which Auto Scaler calculates total uptime for the nodes during selection

Parameter: options

Type: list of strings

Description: Additional parameters that will be passed to cm-scale daemon

5.2.472 ScaleDynamicNodesProvider: ScaleResourceProvider

parent: ScaleResourceProvider

Parameter: templateNode

Type: reference to Node

Description: Template node

Parameter: `nodeRange`

Type: string

Description: Node range

Parameter: `networkInterface`

Type: string

Description: Which node network interface will be changed on cloning (incremented)

Parameter: `startTemplateNode`

Type: boolean

Description: Should template node be started automatically

Parameter: `stopTemplateNode`

Type: boolean

Description: Should template node be stopped automatically

Parameter: `removeNodes`

Type: boolean

Description: Should nodes be removed from Bright Cluster Manager configuration upon the node termination

Parameter: `leaveFailedNodes`

Type: boolean

Description: Failed nodes will not be touched in order to allow administrator to investigate why they were failed

Parameter: `neverTerminate`

Type: unsigned integer

Description: Number of nodes that cm-scale powers off and allows to remain, instead of terminating

Parameter: `neverTerminateNodes`

Type: list of references to Node

Description: List of particular nodes that cm-scale powers off and allows to remain, instead of terminating

5.2.473 `ScaleEngine: Entity`

parent: Entity

Parameter: `name`

Type: string

Description: HPC workload engine name

Parameter: `trackers`

Type: list of ScaleTracker

Description: Workload trackers

Parameter: `workloadsPerNode`

Type: unsigned integer

Description: Number of workloads that can be scheduled to the same node at the same time

Parameter: `priority`

Type: unsigned integer

Description: Workload engine priority

Parameter: `ageFactor`

Type: float

Description: Fairsharing coefficient for workload age significance

Parameter: `engineFactor`

Type: float

Description: Fairsharing coefficient for engine priority significance

Parameter: `externalPriorityFactor`

Type: float

Description: Fairsharing coefficient for external priority significance

Parameter: `maxNodes`

Type: unsigned integer

Description: Allowed running nodes limit

Parameter: `notes`

Type: string

Description: Engine related notes

Parameter: `options`

Type: list of strings

Description: Additional engine related parameters that will be passed to cm-scale daemon

5.2.474 `ScaleGenericEngine: ScaleEngine`

parent: `ScaleEngine`

5.2.475 `ScaleGenericTracker: ScaleTracker`

parent: `ScaleTracker`

Parameter: `handler`

Type: string

Description: Full path to python module that produces workload entities for cm-scale

5.2.476 `ScaleHpcEngine: ScaleEngine`

parent: `ScaleEngine`

Parameter: `wlmCluster`

Type: reference to `WlmCluster`

Description: WLM cluster that will be used by cm-scale

5.2.477 ScaleHpcQueueTracker: ScaleTracker

parent: ScaleTracker

Parameter: queue

Type: string

Description: Tracking job queue

5.2.478 ScaleKubeEngine: ScaleEngine

parent: ScaleEngine

Parameter: cluster

Type: reference to KubeCluster

Description: Kubernetes cluster which pods will be tracked

Parameter: cpuBusyThreshold

Type: float

Description: CPU load % that defines if node is too busy for new pods

Parameter: memoryBusyThreshold

Type: float

Description: Memory load % that defines if node is too busy for new pods

5.2.479 ScaleKubeNamespaceTracker: ScaleTracker

parent: ScaleTracker

Parameter: controllerNamespace

Type: string

Description: Tracking Kubernetes namespace name

Parameter: object

Type: enum

Description: Type of Kubernetes objects to track

5.2.480 ScalePendingWorkload: Entity

parent: Entity

Parameter: workloadId

Type: string

Description: Workload that waits for nodes

Parameter: nodes

Type: list of references to Node

Description: List of managed nodes

5.2.481 ScaleResourceProvider: Entity

parent: Entity

Parameter: name

Type: string

Description: Resource provider name

Parameter: enabled

Type: boolean

Description: Resource provider is currently enabled

Parameter: priority

Type: unsigned integer

Description: Node provider priority

Parameter: wholeTime

Type: unsigned integer

Description: A compute node running time (in minutes) before it is stopped if no workload requires it

Parameter: stoppingAllowancePeriod

Type: unsigned integer

Description: A time (in minutes) just before the end of the wholeTime period prior to which all power off (or terminate) operations must be started

Parameter: keepRunning

Type: string

Description: Nodes that should not be stopped or terminated even if they are unused (range format)

Parameter: extraNodes

Type: list of strings

Description: Nodes that should be started before regular nodes

Parameter: extraNodeIdleTime

Type: unsigned integer

Description: Time, in seconds, that extra nodes can remain unused (after this time they are stopped)

Parameter: extraNodeStart

Type: boolean

Description: Automatically start extra node before the first compute node is started

Parameter: extraNodeStop

Type: boolean

Description: Automatically stop extra node after the last compute node stops

Parameter: allocationProlog

Type: string

Description: Script that is executed when a node is allocated to a workload

Parameter: allocationEpilog

Type: string

Description: Script that is executed when a node is deallocated

Parameter: `allocationScriptsTimeout`

Type: unsigned integer

Description: Allocation scripts timeout in seconds

Parameter: `defaultResources`

Type: list of strings

Description: List of default resources in format [name=value]

Parameter: `shutdownEnabled`

Type: boolean

Description: Shutdown nodes instead of just power off, and wait until a set timeout before doing a hard power off

Parameter: `shutdownTimeout`

Type: unsigned integer

Description: Shutdown timeout before powering off

Parameter: `longStartingNodeAction`

Type: enum

Description: Action applied to nodes that start for too long

Parameter: `longStartingNodeTimeout`

Type: unsigned integer

Description: How long Auto Scaler should wait before the action is applied for long starting nodes

Parameter: `options`

Type: list of strings

Description: Additional resource provider related parameters that will be passed to cm-scale daemon

5.2.482 `ScaleServerRole: Role`

parent: `Role`

Parameter: `engines`

Type: list of `ScaleEngine`

Description: Submode containing workload engines settings

Parameter: `resourceProviders`

Type: list of `ScaleResourceProvider`

Description: List of resource providers

Parameter: `dryRun`

Type: boolean

Description: Run in dry run mode

Parameter: `debug`

Type: boolean

Description: Print debug messages to the log

Parameter: `runInterval`

Type: unsigned integer

Description: Frequency of cm-scale decision making (in seconds)

Parameter: `advancedSettings`

Type: `ScaleAdvancedSettings`

Description: Submode containing advanced settings

5.2.483 `ScaleStaticNodesProvider: ScaleResourceProvider`

parent: `ScaleResourceProvider`

Parameter: `nodes`

Type: list of references to `Node`

Description: List of managed nodes

Parameter: `nodegroups`

Type: list of references to `NodeGroup`

Description: List of managed nodegroups

5.2.484 `ScaleTracker: Entity`

parent: `Entity`

Parameter: `name`

Type: string

Description: Tracker name

Parameter: `enabled`

Type: boolean

Description: Tracker is currently enabled or disabled

Parameter: `assignCategory`

Type: reference to `Category`

Description: Category that should be assigned to managed nodes

Parameter: `primaryOverlays`

Type: list of references to `ConfigurationOverlay`

Description: Configuration overlays that managed nodes are added to when they are required by workload

Parameter: `allowedResourceProviders`

Type: list of strings

Description: Only the specified resource providers will be used for a workload of this tracker (if empty than all allowed)

Parameter: `queueLengthThreshold`

Type: unsigned integer

Description: Number of pending workloads/jobs that triggers the nodes bursting

Parameter: `ageThreshold`

Type: unsigned integer

Description: Workload/job pending time threshold that triggers the nodes bursting for this workload (in seconds)

Parameter: `workloadsPerNode`

Type: unsigned integer

Description: Number of workloads that can be scheduled to the same node at the same time (0 means no limit)

Parameter: `options`

Type: list of strings

Description: Additional tracker related parameters

5.2.485 SELinuxSettings: Entity

parent: Entity

Parameter: `initialize`

Type: boolean

Description: Determines whether SELinux is to be initialized by the node installer

Parameter: `rebootAfterContextRestore`

Type: boolean

Description: This directive determines whether the compute node is to reboot after performing a full filesystem security context restore

Parameter: `allowNFSHomeDirectories`

Type: boolean

Description: This directive determines whether to allow using a remote NFS server for the home directories on the node

Parameter: `contextActionAutoInstall`

Type: enum

Description: This directive specifies the action which is to be performed by the Node Installer when the node is being installed in the AUTO mode

Parameter: `contextActionFullInstall`

Type: enum

Description: This directive specifies the action which is to be performed by the Node Installer when the node is being installed in the FULL mode

Parameter: `contextActionNoSyncInstall`

Type: enum

Description: This directive specifies the action which is to be performed by the Node Installer when the node is being installed in the NOSYNC mode

Parameter: mode

Type: enum

Description: Process policy mode

Parameter: policy

Type: enum

Description: Process protection policy

Parameter: keyValueSettings

Type: KeyValueSettings or None

Description: Key value settings which can be used to override SELinux options

5.2.486 Semaphore: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: semid

Type: integer

Description: Semaphore Set ID

Parameter: ipcperm

Type: IPCPerm

Description: IPC permissions

Parameter: nsems

Type: unsigned integer

Description: Number of semaphores in the set

5.2.487 Sensor: Entity

parent: Entity

Parameter: type

Type: enum

Description: Sensor type

Parameter: name

Type: string

Description: Sensor name

Parameter: prt

Type: unsigned integer

Description: Sensor port

5.2.488 Session: Entity**parent:** Entity**Parameter:** eventCounter**Type:** unsigned integer**Description:** none**Parameter:** queuedEventSize**Type:** unsigned integer**Description:** none**Parameter:** clientType**Type:** unsigned integer**Description:** none**Parameter:** acknowledgedKeepAlive**Type:** integer**Description:** none**Parameter:** nodeKey**Type:** unsigned integer**Description:** none**Parameter:** remoteAddress**Type:** IP**Description:** none**Parameter:** username**Type:** string**Description:** none**Parameter:** group**Type:** string**Description:** none**5.2.489 SharedMemory: Entity****parent:** Entity**Parameter:** refNodeUniqueKey**Type:** unsigned integer**Description:** Node**Parameter:** shmid**Type:** integer**Description:** Shared memory ID**Parameter:** ipcperm**Type:** IPCPerm

Description: IPC permissions

Parameter: size

Type: unsigned integer

Description: Size in bytes

Parameter: cpid

Type: integer

Description: Creator PID

Parameter: natch

Type: integer

Description: Number of attaches

5.2.490 SlurmAccountingRole: Role

parent: Role

Parameter: dbdPort

Type: unsigned integer

Description: The port number that the Slurm Database Daemon (slurmdbd) listens to for work

Parameter: storageHost

Type: string

Description: Defines the name of the host the MySQL database is running where slurmdbd is going to store the data

Parameter: storagePort

Type: unsigned integer

Description: The port number that the Slurm Database Daemon (slurmdbd) communicates with the database

Parameter: storageLoc

Type: string

Description: The name of the database as the location where slurmdbd accounting records are written

Parameter: storageUser

Type: string

Description: Defines the name of the user to connect to the MySQL database with to store the job accounting data

Parameter: slurmWlmClusters

Type: list of references to SlurmWlmCluster

Description: List of Slurm clusters which can make use of this SlurmAccountingRole (slurmdbd)

5.2.491 SlurmCgroupsSettings: WlmCgroupsSettings

parent: WlmCgroupsSettings

Parameter: allowedDevicesFile

Type: string

Description: If ConstrainDevices is true then this file has to be used to declare the devices that need to be allowed by default for all the jobs

Parameter: taskAffinity

Type: boolean

Description: If true then set a default task affinity to bind each step task to a subset of the allocated cores using sched_setaffinity

Parameter: constrainCores

Type: boolean

Description: If true then constrain allowed cores to the subset of allocated resources

Parameter: constrainRAMSpace

Type: boolean

Description: If true then constrain the job's RAM usage

Parameter: constrainSwapSpace

Type: boolean

Description: If true then constrain the job's swap space usage

Parameter: constrainDevices

Type: boolean

Description: If true constrain the job's allowed devices based on GRES allocated resources

Parameter: allowedRamSpace

Type: float

Description: Constrain the job cgroup RAM to this percentage of the allocated memory. The percentage supplied may be expressed as floating point number, e.g. 98.5. If the AllowedRAMSpace limit is exceeded, the job steps will be killed and a warning message will be written to standard error. Also see ConstrainRAMSpace. The default value is 100.

Parameter: allowedSwapSpace

Type: float

Description: Constrain the job cgroup swap space to this percentage of the allocated memory

Parameter: maxRAMPercent

Type: float

Description: Set an upper bound in percent of total RAM on the RAM constraint for a job

Parameter: maxSwapPercent

Type: float

Description: Set an upper bound (in percent of total RAM) on the amount of RAM+Swap that may be used for a job

Parameter: minRAMSpace

Type: unsigned integer

Description: Set a lower bound (in MB) on the memory limits defined by AllowedRAMSpace and AllowedSwapSpace

Parameter: jobCgroupTemplate

Type: string

Description: Template for job cgroup path (\$UID will be replaced to user ID, \$JOBID will be replaced to job id)

Parameter: allowedKmemSpace

Type: unsigned integer

Description: Constrain the job cgroup kernel memory to this amount of the allocated memory (in bytes)

Parameter: constrainKmemSpace

Type: boolean

Description: Specifies if Slurm will constrain the job's Kmem RAM usage

Parameter: minKmemSpace

Type: unsigned integer

Description: Set a lower bound (in MB) on the memory limits defined by AllowedKmemSpace

Parameter: maxKmemPercent

Type: float

Description: Set an upper bound in percent of total Kmem for a job

Parameter: memorySwappiness

Type: float

Description: Configure the kernel's priority for swapping out anonymous pages (such as program data) verses file cache pages for the job cgroup (either ConstrainRAMSpace or ConstrainSwapSpace must be enabled in order for this parameter to be applied)

5.2.492 SlurmClientRole: SlurmRole

parent: SlurmRole

Parameter: slots

Type: string

Description: Number of slots available on this node/category (set 0 for default)

Parameter: queues

Type: list of references to SlurmJobQueue

Description: Queues this node/nodes in this category belongs to

Parameter: allQueues

Type: boolean

Description: When set, the role will provide all available queues (the queues property will then be ignored)

Parameter: nodeAddr

Type: string

Description: Name that a node should be referred to in establishing a communications path

Parameter: `coresPerSocket`

Type: unsigned integer

Description: Number of cores in a single physical processor socket

Parameter: `features`

Type: list of strings

Description: A list of arbitrary strings indicative of some characteristic associated with the node

Parameter: `tcpPort`

Type: unsigned integer

Description: The port number that the Slurm compute node daemon, slurmd, listens to for work on this particular node

Parameter: `realMemory`

Type: unsigned integer

Description: Size of real memory on the node

Parameter: `sockets`

Type: unsigned integer

Description: Number of physical processor sockets/chips on the node

Parameter: `threadsPerCore`

Type: unsigned integer

Description: Number of logical threads in a single physical core

Parameter: `tmpDisk`

Type: unsigned integer

Description: Total size of temporary disk storage in TmpFS in MegaBytes

Parameter: `weight`

Type: integer

Description: The priority of the node for scheduling purposes

Parameter: `boards`

Type: unsigned integer

Description: Number of baseboards in nodes with a baseboard controller

Parameter: `socketsPerBoard`

Type: unsigned integer

Description: Number of physical processor sockets/chips on a baseboard

Parameter: `reason`

Type: string

Description: Identifies the reason for a node being in a particular state

Parameter: `cpuSpecList`

Type: list of strings

Description: A comma delimited list of Slurm abstract CPU IDs on which Slurm compute node daemons (slurmd, slurmstepd) will be confined

Parameter: `coreSpecCount`

Type: unsigned integer

Description: Number of cores in a single physical processor socket

Parameter: `memSpecLimit`

Type: unsigned integer

Description: Limit on combined real memory allocation for compute node daemons (slurmd, slurmstepd)

Parameter: `autoDetect`

Type: enum

Description: Detect NVIDIA (nvmi) or AMD (rsmi) GPUs automatically (per node)

Parameter: `nodeCustomizations`

Type: list of `WlmNodeCustomizationEntry`

Description: Slurm node custom properties

Parameter: `genericResources`

Type: list of `SlurmGenericResource`

Description: Slurm generic resources settings

Parameter: `cpuBind`

Type: enum

Description: Bindings from task to resources

5.2.493 `SlurmGenericResource: Entity`

parent: `Entity`

Parameter: `alias`

Type: string

Description: Unique alias name of the generic resource

Parameter: `name`

Type: string

Description: Name of the generic resource in Slurm

Parameter: `count`

Type: string

Description: Number of resources of this type available on this node (a suffix K, M, G, T or P may be used to multiply the number by 1024, 1048576, etc. respectively)

Parameter: `cores`

Type: `string`

Description: Specify the first thread CPU index numbers for the specific cores which can use this resource (e.g. '0,1,2,3' or '0-3')

Parameter: `type`

Type: `string`

Description: An arbitrary string identifying the type of device

Parameter: `file`

Type: `string`

Description: Fully qualified pathname of the device files associated with a resource (simple regular expressions are supported)

Parameter: `consumable`

Type: `boolean`

Description: Multiple jobs can use the same generic resource

Parameter: `addToGresConfig`

Type: `boolean`

Description: Add the generic resource entity to gres.conf

5.2.494 `SlurmJobQueueAccessList: Entity`

parent: `Entity`

Parameter: `wlmCluster`

Type: `reference to WlmCluster`

Description: WLM cluster link to this job queue access list

Parameter: `slurmJobQueue`

Type: `list of references to SlurmJobQueue`

Description: List of queues that can be submitted to. If none is specified, this access list will submit to all job queues in the specified WlmCluster.

5.2.495 `SlurmJobQueueStat: JobQueueStat`

parent: `JobQueueStat`

Parameter: `memory`

Type: `string`

Description: Memory

Parameter: `cpus`

Type: `unsigned integer`

Description: CPUs

Parameter: `total`

Type: `unsigned integer`

Description: Total nodes

Parameter: usable

Type: unsigned integer

Description: Usable nodes

Parameter: free

Type: unsigned integer

Description: Free nodes

Parameter: nodeLimit

Type: unsigned integer

Description: Node limit

Parameter: timeLimit

Type: string

Description: Time limit

Parameter: other

Type: string

Description: Other traits

5.2.496 *SlurmJobQueue: JobQueue*

parent: JobQueue

Parameter: allocNodes

Type: string

Description: Comma separated list of nodes from which users can submit jobs in the partition

Parameter: defaultQueue

Type: boolean

Description: Set this as the default queue

Parameter: minNodes

Type: string

Description: Minimal nodes one job has to use

Parameter: maxNodes

Type: string

Description: Maximal nodes one job can use

Parameter: defaultTime

Type: string

Description: Default job runtime

Parameter: maxTime

Type: string

Description: Maximal job runtime

Parameter: `priorityJobFactor`

Type: integer

Description: Partition factor used by priority/multifactor plugin in calculating job priority

Parameter: `priorityTier`

Type: integer

Description: Jobs submitted to a partition with a higher priority tier value will be dispatched before pending jobs in partition with lower priority tier value

Parameter: `hidden`

Type: boolean

Description: Hide from all

Parameter: `disableRoot`

Type: boolean

Description: Do not allow root to run jobs

Parameter: `rootOnly`

Type: boolean

Description: Only allow root to run jobs

Parameter: `allowGroups`

Type: string

Description: Specify user groups which are allowed to run jobs

Parameter: `overSubscribe`

Type: string

Description: Controls the ability of the partition to execute more than one job at a time on each resource

Parameter: `alternate`

Type: string

Description: Partition name of alternate partition to be used if the state of this partition is DRAIN or INACTIVE

Parameter: `graceTime`

Type: unsigned integer

Description: Specifies, in units of seconds, the preemption grace time to be extended to a job which has been selected for preemption

Parameter: `defMemPerCPU`

Type: string

Description: Default real memory size available per allocated CPU in MegaBytes

Parameter: `maxMemPerCPU`

Type: string

Description: Maximum real memory size available per allocated CPU in MegaBytes

Parameter: defMemPerNode

Type: string

Description: Default real memory size available per allocated node in MegaBytes

Parameter: maxMemPerNode

Type: string

Description: Maximum real memory size available per allocated node in MegaBytes

Parameter: preemptMode

Type: string

Description: Mechanism used to preempt jobs from this partition

Parameter: reqResv

Type: string

Description: Specifies users of this partition are required to designate a reservation when submitting a job

Parameter: SelectTypeParameters

Type: string

Description: Partition-specific resource allocation type

Parameter: allowAccounts

Type: string

Description: Specify accounts which are allowed to run jobs

Parameter: allowQos

Type: string

Description: Specify qos which are allowed to run jobs

Parameter: denyGroups

Type: string

Description: Specify groups which are denied to run jobs

Parameter: denyAccounts

Type: string

Description: Specify accounts which are denied to run jobs

Parameter: denyQos

Type: string

Description: Specify qos which are denied to run jobs

Parameter: lln

Type: boolean

Description: Schedule resources to jobs on the least loaded nodes

Parameter: `maxCPUsPerNode`

Type: string

Description: Maximum number of CPUs on any node available to all jobs from this partition

Parameter: `tresBillingWeights`

Type: list of strings

Description: Billing weights of each TRES type that will be used in calculating the usage of a job

Parameter: `defMemPerGPU`

Type: string

Description: Default real memory size available per allocated GPU in megabytes

Parameter: `defCpuPerGPU`

Type: string

Description: Default count of CPUs allocated per allocated GPU

Parameter: `cpuBind`

Type: enum

Description: How tasks are bound to allocated CPUs

Parameter: `qos`

Type: string

Description: Used to extend the limits available to a QOS on a partition

Parameter: `exclusiveUser`

Type: boolean

Description: If set to YES then nodes will be exclusively allocated to users

Parameter: `ordering`

Type: integer

Description: Positioning of the jobqueue. Smaller values go first in the configuration file.

5.2.497 `SlurmJob: Job`

parent: Job

5.2.498 `SlurmOCISettings: Entity`

parent: Entity

Parameter: `containerPath`

Type: string

Description: Override path pattern for placement of the generated OCI Container bundle directory.

Parameter: `createEnvFile`

Type: boolean

Description: Create environment file for container.

Parameter: `runTimeCreate`

Type: `string`

Description: Pattern for OCI runtime create operation.

Parameter: `runTimeDelete`

Type: `string`

Description: Pattern for OCI runtime delete operation.

Parameter: `runTimeKill`

Type: `string`

Description: Pattern for OCI runtime kill operation.

Parameter: `runTimeQuery`

Type: `string`

Description: Pattern for OCI runtime query operation.

Parameter: `runTimeRun`

Type: `string`

Description: Pattern for OCI runtime run operation.

Parameter: `runTimeStart`

Type: `string`

Description: Pattern for OCI runtime start operation.

5.2.499 `SlurmRole: Role`

parent: `Role`

Parameter: `wlmCluster`

Type: reference to `SlurmWlmCluster`

Description: WLM cluster link to this WLM role

5.2.500 `SlurmServerRole: SlurmRole`

parent: `SlurmRole`

Parameter: `scheduler`

Type: `string`

Description: Scheduler to use in combination with slurm

Parameter: `externalServer`

Type: `boolean`

Description: Slurm server daemons are running on some external machine

5.2.501 `SlurmSubmitRole: WlmSubmitRole`

parent: `WlmSubmitRole`

Parameter: `slurmJobQueueAccessList`

Type: list of `SlurmJobQueueAccessList`

Description: List of slurm clusters and their associated queues that can be submitted to

5.2.502 SlurmWlmCluster: WlmCluster**parent:** WlmCluster**Parameter:** placeholders**Type:** list of JobQueuePlaceholder**Description:** Job queue node placeholders mode**Parameter:** cgroups**Type:** SlurmCgroupsSettings**Description:** Submode containing Slurm related cgroups settings**Parameter:** powerSavingEnabled**Type:** boolean**Description:** Enable power saving options into slurm.conf**Parameter:** suspendTime**Type:** integer**Description:** Nodes which remain idle for this number of seconds will be placed into power save mode by SuspendProgram**Parameter:** suspendTimeout**Type:** unsigned integer**Description:** Maximum time permitted (in second) between when a node suspend request is issued and when the node shutdown**Parameter:** resumeTimeout**Type:** unsigned integer**Description:** Maximum time permitted (in second) between when a node is resume request is issued and when the node is actually available for use**Parameter:** suspendProgram**Type:** string**Description:** Program that will be executed when a node remains idle for an extended period of time**Parameter:** resumeProgram**Type:** string**Description:** Program that will be executed when a suspended node is needed by a submitted jobs**Parameter:** prologSlurmctld**Type:** string**Description:** Fully qualified pathname of a program for the slurmctld daemon to execute before granting a new job allocation**Parameter:** epilogSlurmctld**Type:** string**Description:** Fully qualified pathname of a program for the slurmctld to execute upon termination of a job allocation

Parameter: `prolog`

Type: `string`

Description: Fully qualified pathname of a program for the slurmd to execute whenever it is asked to run a job step from a new job allocation

Parameter: `epilog`

Type: `string`

Description: Fully qualified pathname of a script to execute as user root on every node when a user's job completes

Parameter: `fastSchedule`

Type: `unsigned integer`

Description: Controls how a node's configuration specifications in `slurm.conf` are used

Parameter: `gresTypes`

Type: `list of strings`

Description: A list of generic resources to be managed

Parameter: `prefix`

Type: `string`

Description: Slurm root installation directory

Parameter: `etc`

Type: `string`

Description: Slurm configuration files directory

Parameter: `stateSave`

Type: `string`

Description: Directory into which the Slurm controller saves its state

Parameter: `version`

Type: `string`

Description: Major Slurm version

Parameter: `slurmConfFileTemplate`

Type: `string`

Description: Template for `slurm.conf` file

Parameter: `gresConfFileTemplate`

Type: `string`

Description: Template for `gres.conf` file

Parameter: `autoDetect`

Type: `enum`

Description: Detect NVIDIA (nvml) or AMD (rsmi) GPUs automatically (global option)

Parameter: `slurmdParameters`

Type: list of strings

Description: Parameters specific to the Slurmd

Parameter: schedulerParameters

Type: list of strings

Description: Parameters specific to the scheduler. The interpretation of them varies by SchedulerType

Parameter: slurmdParameters

Type: list of strings

Description: Parameters specific to the Slurmd

Parameter: prologFlags

Type: list of strings

Description: Flags to control the prolog behavior

Parameter: selectType

Type: string

Description: The type of resource selection algorithm to be used (slurm: SelectType)

Parameter: selectTypeParameters

Type: list of strings

Description: Parameters specific to Select Type (slurm: SelectTypeParameters)

Parameter: accountingStorageTRES

Type: list of strings

Description: List of resources you wish to track on the cluster (slurm: AccountingStorageTRES)

Parameter: ociSettings

Type: SlurmOCISettings or None

Description: OCI container settings for Slurm

5.2.503 SNMPSettings: Entity

parent: Entity

Parameter: version

Type: enum

Description: Version of SNMP that should be use to read information from the device

Parameter: timeout

Type: float

Description: SNMP timeout, set to 0 for default

Parameter: vlanTimeout

Type: float

Description: SNMP timeout for VLAN calls, set to 0 for default

Parameter: retries

Type: integer

Description: SNMP retries, set to -1 for default

Parameter: readString

Type: string

Description: SNMP read-only community string

Parameter: writeString

Type: string

Description: SNMP read-write community string

Parameter: securityName

Type: string

Description: Security name

Parameter: context

Type: string

Description: *none*

Parameter: authProtocol

Type: enum

Description: Authentication protocol

Parameter: privProtocol

Type: enum

Description: Privacy protocol

Parameter: authKey

Type: string

Description: Authentication key

Parameter: privKey

Type: string

Description: Privacy key

Parameter: securityLevel

Type: enum

Description: Security level

Parameter: filename

Type: string

Description: Filename for SNMP testing

5.2.504 SnmpTrapRole: Role

parent: Role

Parameter: event

Type: boolean

Description: Enable events

Parameter: mail

Type: boolean

Description: Enable mail

Parameter: recipients

Type: list of strings

Description: Recipients

Parameter: allAdministrators

Type: boolean

Description: Also send e-mail to all administrators as defined in partition

Parameter: access

Type: string

Description: Access string

Parameter: server

Type: string

Description: The SNMP server

Parameter: sender

Type: string

Description: The sender of the e-mail

Parameter: arguments

Type: list of strings

Description: Additional script arguments

Parameter: alternativeScript

Type: string

Description: Alternative script

5.2.505 SoftwareImageFileSelection: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: patterns

Type: list of strings

Description: Patterns to be included

Parameter: watch

Type: boolean

Description: Watch files with inotify

5.2.506 SoftwareImageProxy: Entity

parent: Entity

Parameter: parentSoftwareImage

Type: reference to SoftwareImage

Description: Parent software image

Parameter: revisionID

Type: integer

Description: Revision ID

5.2.507 SoftwareImageRevisionInfo: Entity

parent: Entity

Parameter: image

Type: reference to SoftwareImage or None

Description: *none*

Parameter: revisionID

Type: integer

Description: Revision ID

Parameter: creationTime

Type: timestamp

Description: Revision creation time

Parameter: removalTime

Type: timestamp

Description: Revision removal time

Parameter: description

Type: string

Description: Revision Description

5.2.508 SoftwareImage: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: path

Type: string

Description: Base directory of the image

Parameter: originalImage

Type: unsigned integer

Description: Image from which this one will be cloned

Parameter: fileOperationInProgress

Type: boolean

Description: *none*

Parameter: kernelVersion

Type: string

Description: Kernel version used

Parameter: kernelParameters

Type: string

Description: Kernel parameters passed to the kernel at boot time

Parameter: kernelOutputConsole

Type: string

Description: Kernel output console used at boot time

Parameter: creationTime

Type: timestamp

Description: Creation time

Parameter: modules

Type: list of KernelModule

Description: Manage kernel modules loaded in this image

Parameter: enableSOL

Type: boolean

Description: Enable Serial console Over LAN

Parameter: SOLPort

Type: string

Description: Serial port to use for SOL, usually ttyS0 or ttyS1

Parameter: SOLSpeed

Type: string

Description: Baud rate to use for SOL

Parameter: SOLFlowControl

Type: boolean

Description: Enable to use hardware flow control for SOL

Parameter: notes

Type: string

Description: Administrator notes

Parameter: fspart

Type: reference to FSPart or None

Description: Internal pointer to the FSPart associated with this image

Parameter: bootfspart

Type: reference to FSPart or None

Description: Internal pointer to the FSPart associated with the boot directory of this image

Parameter: revisionDescription

Type: string

Description: *none*

Parameter: revisionID

Type: integer

Description: *none*

Parameter: parentSoftwareImage

Type: reference to SoftwareImage or None

Description: *none*

Parameter: revisionHistory

Type: list of SoftwareImageRevisionInfo

Description: *none*

5.2.509 StandaloneMonitoredEntity: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: type

Type: string

Description: Optional type in case name matches an other entity

Parameter: data

Type: string

Description: Data that will be passed to the script environment

Parameter: notes

Type: string

Description: Notes

5.2.510 StaticRoute: Entity

parent: Entity

Parameter: name

Type: string

Description: Generally a unique combination of gateway ip and netmaskbits

Parameter: ip

Type: IP

Description: Destination IP

Parameter: gateway

Type: IP

Description: Gateway IP address

Parameter: netmaskBits

Type: unsigned integer

Description: Destination netmask bits

Parameter: network

Type: reference to Network

Description: Destination network the interface is connected to

Parameter: networkDeviceName

Type: string

Description: Name of network device

Parameter: notes

Type: string

Description: Administrator notes

5.2.511 StatusCollectorSubSystemInfo: StatusSubSystemInfo

parent: StatusSubSystemInfo

Parameter: nodes

Type: unsigned integer

Description: none

Parameter: updates

Type: unsigned integer

Description: none

Parameter: merges

Type: unsigned integer

Description: none

5.2.512 StatusControllerSubSystemInfo: StatusSubSystemInfo

parent: StatusSubSystemInfo

Parameter: updates

Type: unsigned integer

Description: none

Parameter: reports

Type: unsigned integer

Description: none

Parameter: nodes

Type: unsigned integer

Description: none

Parameter: icmpPingCount

Type: unsigned integer

Description: none

Parameter: checkUrlCount

Type: unsigned integer

Description: none

Parameter: customScriptCount

Type: unsigned integer

Description: none

Parameter: customFunctionCount

Type: unsigned integer

Description: none

5.2.513 StatusManagerSubSystemInfo: StatusSubSystemInfo

parent: StatusSubSystemInfo

Parameter: nodes

Type: unsigned integer

Description: none

Parameter: events

Type: unsigned integer

Description: none

5.2.514 StatusRuleSubSystemInfo: StatusSubSystemInfo

parent: StatusSubSystemInfo

Parameter: rules

Type: unsigned integer

Description: none

Parameter: updates

Type: unsigned integer

Description: none

Parameter: checks

Type: unsigned integer

Description: *none*

5.2.515 StatusSubSystemInfo: SubSystemInfo

parent: SubSystemInfo

Parameter: stopped

Type: boolean

Description: Stopped

Parameter: suspended

Type: boolean

Description: Suspended

5.2.516 StatusTimeoutSubSystemInfo: StatusSubSystemInfo

parent: StatusSubSystemInfo

Parameter: active

Type: unsigned integer

Description: *none*

Parameter: registered

Type: unsigned integer

Description: *none*

Parameter: handled

Type: unsigned integer

Description: *none*

5.2.517 StatusTransitionSubSystemInfo: StatusSubSystemInfo

parent: StatusSubSystemInfo

Parameter: handled

Type: unsigned integer

Description: *none*

Parameter: transitions

Type: list of unsigned numbers

Description: Transition matrices: from -> to

5.2.518 StorageNodePolicy: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: exportedDirectories

Type: list of strings

Description: Exported directories

Parameter: `minStorageVolumeSize`

Type: unsigned integer

Description: Minimal size of storage volume

Parameter: `defaultJobOutputSize`

Type: unsigned integer

Description: Default size of job output data

Parameter: `storageVolumeFilesystem`

Type: string

Description: Filesystem type of storage volume

Parameter: `shareStorageVolumeBetweenJobs`

Type: boolean

Description: Share storage volumes between jobs

Parameter: `scalingUpFactor`

Type: float

Description: Scaling up factor

Parameter: `storageNodeNamePrefix`

Type: string

Description: Storage node name prefix

Parameter: `storagePrototype`

Type: reference to `CloudNode`

Description: Template node used for instantiating cloud storage nodes

Parameter: `maxStorageNodeCount`

Type: unsigned integer

Description: Maximum number of storage nodes

Parameter: `maxJobsPerNode`

Type: unsigned integer

Description: Maximum number of jobs that can be run on a single storage node simultaneously

Parameter: `storageNodeIdleTimeLimit`

Type: unsigned integer

Description: After that timeout storage node will be shut down

Parameter: `terminateStorageNodes`

Type: boolean

Description: Terminate storage nodes instead of powering them off

Parameter: `cloudOperationTimeout`

Type: unsigned integer

Description: Timeout for various cloud job operations

Parameter: maxDownloadTime

Type: unsigned integer

Description: Maximum time job results data transfer can take

Parameter: maxUploadTime

Type: unsigned integer

Description: Maximum time job input data transfer can take

Parameter: intermediateStorage

Type: CMJobIntermediateStorage

Description: Place to store data to be accessible from storage node

Parameter: restartNFSServer

Type: boolean

Description: Restarts the NFS server on the storage node before umounting.

Parameter: extraOptions

Type: list of strings

Description: Extra options for jobs

5.2.519 StorageRole: Role

parent: Role

Parameter: nfsThreads

Type: unsigned integer

Description: Number of nfs threads (0 for don't touch the current config file value)

Parameter: disableNFS1

Type: boolean

Description: Disable NFS1, NFS threads needs to bet set

Parameter: disableNFS2

Type: boolean

Description: Disable NFS2, NFS threads needs to bet set

Parameter: disableNFS3

Type: boolean

Description: Disable NFS3, NFS threads needs to bet set

Parameter: disableNFS4

Type: boolean

Description: Disable NFS4, NFS threads needs to bet set

Parameter: nfs4grace

Type: unsigned integer

Description: NFS4 grace period (0 for don't touch the current config file value)

Parameter: `statdPort`

Type: unsigned integer

Description: Stat daemon port (0 for don't touch the current config file value)

Parameter: `statdOutgoingPort`

Type: unsigned integer

Description: Stat daemon outgoing port (0 for don't touch the current config file value)

Parameter: `mountdPort`

Type: unsigned integer

Description: Mount daemon port (0 for don't touch the current config file value)

Parameter: `rquotadPort`

Type: unsigned integer

Description: Rquota daemon port (0 for don't touch the current config file value)

Parameter: `lockdTcpPort`

Type: unsigned integer

Description: Lock daemon TCP port (0 for don't touch the current config file value)

Parameter: `lockdUdpPort`

Type: unsigned integer

Description: Lock daemon UDP port (0 for don't touch the current config file value)

Parameter: `rdmaPort`

Type: unsigned integer

Description: RDMA port (0 for don't touch the current config file value)

5.2.520 `StringListObject: Entity`

parent: `Entity`

Parameter: `list`

Type: list of strings

Description: List

5.2.521 `SubnetManagerRole: Role`

parent: `Role`

Parameter: `interconnect`

Type: enum

Description: Type of interconnect

Parameter: `ibl2mtu`

Type: enum

Description: IB L2 MTU Value

5.2.522 SubSystemInfo: Entity**parent:** Entity**Parameter:** refNodeUniqueKey**Type:** unsigned integer**Description:** Node**Parameter:** name**Type:** string**Description:** Name**Parameter:** timestamp**Type:** timestamp**Description:** Time**5.2.523** SwitchPort: Entity**parent:** Entity**Parameter:** networkSwitch**Type:** reference to Switch**Description:** Switch**Parameter:** prt**Type:** unsigned integer**Description:** Port number on the switch**5.2.524** Switch: Device**parent:** Device**Parameter:** ip**Type:** IP**Description:** IP address**Parameter:** network**Type:** reference to Network or None**Description:** Network to which this switch is connected**Parameter:** ports**Type:** integer**Description:** Number of ports**Parameter:** model**Type:** string**Description:** The switch model**Parameter:** snmpSettings**Type:** SNMPSettings or None

Description: Configure the cluster wide SNMP settings

Parameter: `members`

Type: list of references to `Switch`

Description: List of switches belonging to this stack

Parameter: `controlScript`

Type: string

Description: Custom control script that provides switch functionality

Parameter: `controlScriptTimeout`

Type: unsigned integer

Description: Control script timeout

Parameter: `priority`

Type: unsigned integer

Description: Devices on multiple switches will be listed under the switch with the largest priority

Parameter: `lowestPort`

Type: integer

Description: Lowest port

Parameter: `uplinks`

Type: list of unsigned numbers

Description: List of ports connected to other switches.

Parameter: `disablePortDetection`

Type: boolean

Description: Disable port detection for this switch

Parameter: `disablePortMapping`

Type: boolean

Description: Disable port index mapping

Parameter: `vlanCacheTime`

Type: unsigned integer

Description: Time to cache VLAN information

5.2.525 `SyncInfo:Entity`

parent: `Entity`

Parameter: `node`

Type: reference to `Node`

Description: *none*

Parameter: `provisioningNode`

Type: reference to `Node`

Description: *none*

Parameter: `fspart`

Type: reference to FSPart

Description: *none*

Parameter: `mode`

Type: enum

Description: *none*

Parameter: `type`

Type: enum

Description: *none*

Parameter: `dryRun`

Type: boolean

Description: *none*

Parameter: `startTime`

Type: timestamp

Description: *none*

Parameter: `endTime`

Type: timestamp

Description: *none*

Parameter: `exitCode`

Type: integer

Description: *none*

Parameter: `signal`

Type: integer

Description: *none*

Parameter: `numberOfFiles`

Type: unsigned integer

Description: The count of all 'files' (in the generic sense), which includes directories, symlinks, etc.

Parameter: `numberOfTransferredFiles`

Type: unsigned integer

Description: The count of normal files that were updated via rsync's delta-transfer algorithm, which does not include created dirs, symlinks, etc.

Parameter: `numberOfCreatedFiles`

Type: unsigned integer

Description: The count of normal files that were created.

Parameter: `numberOfDeletedFiles`

Type: unsigned integer

Description: The count of normal files that were deleted.

Parameter: `totalFileSize`

Type: unsigned integer

Description: The total sum of all file sizes in the transfer. This does not count any size for directories or special files, but does include the size of symlinks.

Parameter: `totalTransferredFileSize`

Type: unsigned integer

Description: The total sum of all files sizes for just the transferred files.

Parameter: `literalData`

Type: unsigned integer

Description: How much unmatched file-update data we had to send to the receiver for it to recreate the updated files.

Parameter: `matchedData`

Type: unsigned integer

Description: How much data the receiver got locally when recreating the updated files.

Parameter: `fileListSize`

Type: unsigned integer

Description: How big the file-list data was when the sender sent it to the receiver. This is smaller than the in-memory size for the file list due to some compressing of duplicated data when rsync sends the list.

Parameter: `fileListGenerationTime`

Type: float

Description: The number of seconds that the sender spent creating the file list. This requires a modern rsync on the sending side for this to be present.

Parameter: `fileListTransferTime`

Type: float

Description: The number of seconds that the sender spent sending the file list to the receiver.

Parameter: `totalSent`

Type: unsigned integer

Description: The count of all the bytes that rsync sent from the client side to the server side.

Parameter: `totalReceived`

Type: unsigned integer

Description: The count of all non-message bytes that rsync received by the client side from the server side. 'Non-message' bytes means that we don't count the bytes for a verbose message that the server sent to us, which makes the stats more consistent.

Parameter: `transferSpeed`

Type: float

Description: Transfer speed

Parameter: speedup

Type: float

Description: Speedup

5.2.526 SyncSource: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: fspart

Type: reference to FSPart

Description: *none*

Parameter: priority

Type: unsigned integer

Description: *none*

5.2.527 SyncTarget: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: fspart

Type: reference to FSPart

Description: *none*

Parameter: target

Type: string

Description: *none*

Parameter: prefix

Type: string

Description: *none*

Parameter: excludeList

Type: string

Description: *none*

Parameter: root

Type: boolean

Description: *none*

Parameter: `priority`

Type: unsigned integer

Description: *none*

5.2.528 SysInfoCollector: Entity

parent: Entity

Parameter: `refDeviceUniqueKey`

Type: unsigned integer

Description: Device

Parameter: `processors`

Type: list of Processor

Description: *none*

Parameter: `disks`

Type: list of DiskInfo

Description: *none*

Parameter: `gpus`

Type: list of GPUInfo

Description: *none*

Parameter: `fpgas`

Type: list of FPGAInfo

Description: *none*

Parameter: `memory`

Type: list of MemoryInfo

Description: *none*

Parameter: `biosVersion`

Type: string

Description: *none*

Parameter: `biosVendor`

Type: string

Description: *none*

Parameter: `biosDate`

Type: string

Description: *none*

Parameter: `motherboardManufacturer`

Type: string

Description: *none*

Parameter: motherboardName

Type: string

Description: *none*

Parameter: memoryTotal

Type: unsigned integer

Description: *none*

Parameter: memorySwap

Type: unsigned integer

Description: *none*

Parameter: diskCount

Type: unsigned integer

Description: *none*

Parameter: diskTotalSpace

Type: unsigned integer

Description: *none*

Parameter: osName

Type: string

Description: *none*

Parameter: osVersion

Type: string

Description: *none*

Parameter: osFlavor

Type: string

Description: *none*

Parameter: vendorTag

Type: string

Description: *none*

Parameter: systemName

Type: string

Description: *none*

Parameter: systemManufacturer

Type: string

Description: *none*

Parameter: nics

Type: list of strings

Description: *none*

Parameter: ibGUIDs

Type: list of strings

Description: *none*

Parameter: bootIf

Type: string

Description: *none*

Parameter: interconnects

Type: list of strings

Description: *none*

Parameter: raidControllers

Type: list of strings

Description: *none*

Parameter: extra

Type: free JSON object

Description: *none*

Parameter: virtualCluster

Type: boolean

Description: *none*

Parameter: seLinux

Type: boolean

Description: *none*

Parameter: fips

Type: boolean

Description: *none*

Parameter: fabric

Type: boolean

Description: *none*

Parameter: clusterRandomNumber

Type: unsigned integer

Description: *none*

Parameter: updateCount

Type: unsigned integer

Description: *none*

Parameter: timestamp

Type: timestamp

Description: none

5.2.529 SystemctlUnit: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: unit

Type: string

Description: Unit

Parameter: load

Type: string

Description: Load

Parameter: active

Type: string

Description: Active

Parameter: sub

Type: string

Description: The low-level unit activation state, values depend on unit type

Parameter: description

Type: string

Description: Description

5.2.530 TimeZoneSettings: Entity

parent: Entity

Parameter: timeZone

Type: string

Description: Time zone

Parameter: biosUTC

Type: boolean

Description: Store BIOS time in UTC

5.2.531 UGECgroupsSettings: WlmCgroupsSettings

parent: WlmCgroupsSettings

Parameter: enabled

Type: boolean

Description: If true then settings are configured

Parameter: `cpuset`

Type: `boolean`

Description: If true then UGE puts the job into a cpuset cgroup with the specific CPU ids assigned

Parameter: `freezer`

Type: `boolean`

Description: If true than the whole job is frozen by the kernel

Parameter: `freezePeTasks`

Type: `boolean`

Description: If false then slave tasks are not put in the freezer, otherwise all slave tasks are frozen (also slaves on remote hosts)

Parameter: `killing`

Type: `boolean`

Description: If true then UGE signals all processes forked/started by the job until all of them are killed

Parameter: `forcedNuma`

Type: `boolean`

Description: If true then on NUMA machines only local memory is allowed to be used when the job requested memory allocation with `-mbind cores:strict`

Parameter: `vmemLimit`

Type: `boolean`

Description: Specifies if virtual memory can be limited with cgroups (`h_vmem_limit`)

Parameter: `memFreeHard`

Type: `boolean`

Description: If true then kernel ensures that the job does not use more main memory than required (`m_mem_free_hard`)

Parameter: `memFreeSoft`

Type: `boolean`

Description: If true (and hard memory limit is turned off) then the requested memory with `m_mem_free` is a soft limit (`m_mem_free_soft`)

Parameter: `minMemoryLimit`

Type: `string`

Description: A host based minimum memory limit, in bytes or values like 10M, 1G (`min_memory_limit`)

Parameter: `jobCgroupTemplate`

Type: `string`

Description: Template for job cgroup path (\$JOBID will be replaced to job id, \$TASKID to array task id)

Parameter: `options`

Type: `list of strings`

Description: Additional UGE cgroup options

Parameter: `devices`

Type: list of strings

Description: Configurations for cgroup devices

5.2.532 `UGEClientRole: UGERole`

parent: `UGERole`

Parameter: `execHost`

Type: boolean

Description: Specifies if host is allowed to run Grid Engine jobs

Parameter: `adminHost`

Type: boolean

Description: Specifies if host is administrative one

Parameter: `slots`

Type: string

Description: Number of slots available on this node/category

Parameter: `queues`

Type: list of references to `UGEJobQueue`

Description: Queues this node/nodes in this category belongs to

Parameter: `allQueues`

Type: boolean

Description: When set, the role will provide all available queues. (The queues property will then be ignored.)

Parameter: `gpus`

Type: unsigned integer

Description: Number of gpus

Parameter: `gpuDevices`

Type: list of strings

Description: Custom gpu RSMAP

Parameter: `micDevices`

Type: list of strings

Description: Custom phi RSMAP

Parameter: `cgroups`

Type: `UGECgroupsSettings`

Description: Submode containing UGE related cgroups settings

Parameter: `nodeCustomizations`

Type: list of `WlmNodeCustomizationEntry`

Description: Grid Engine node custom properties

Parameter: `prolog`

Type: `string`

Description: Path to prolog script that is configured at local level (e.g. `root@/cm/local/apps/cmd/scripts/prolog`)

Parameter: `epilog`

Type: `string`

Description: Path to epilog script that is configured at global level

Parameter: `dcgmPort`

Type: `unsigned integer`

Description: NVIDIA's Data Center GPU Manager Port

5.2.533 UGEJobQueueStat: GridEngineJobQueueStat

parent: `GridEngineJobQueueStat`

5.2.534 UGEJobQueue: GridEngineJobQueue

parent: `GridEngineJobQueue`

Parameter: `pelist`

Type: `list of strings`

Description: Parallel environments associated with queue

5.2.535 UGEJob: GridEngineJob

parent: `GridEngineJob`

5.2.536 UGEParallelEnvironment: GridEngineParallelEnvironment

parent: `GridEngineParallelEnvironment`

Parameter: `daemonForksSlaves`

Type: `boolean`

Description: Defines if every task of a tightly integrated parallel job gets started individually

Parameter: `masterForksSlaves`

Type: `boolean`

Description: Indicates if limits set for the master task are multiplied by the number of slots granted on the host

5.2.537 UGERole: Role

parent: `Role`

Parameter: `wlmCluster`

Type: `reference to UGEWlmCluster`

Description: WLM cluster link to this WLM role

5.2.538 UGEServerRole: UGERole

parent: `UGERole`

Parameter: `externalServer`

Type: boolean

Description: Grid Engine server daemon is running on some external machine

Parameter: prolog

Type: string

Description: Path to prolog script that is configured at global level

Parameter: epilog

Type: string

Description: Path to epilog script that is configured at global level

5.2.539 UGESubmitRole: WlmSubmitRole

parent: WlmSubmitRole

Parameter: ugeWlmClusters

Type: list of references to UGEWlmCluster

Description: List of UGE clusters which the role belongs to

5.2.540 UGEWlmCluster: WlmCluster

parent: WlmCluster

Parameter: parallelEnvironments

Type: list of UGEParallelEnvironment

Description: UGE Parallel Environments

Parameter: cgroups

Type: UGECgroupsSettings

Description: Submode containing UGE related cgroups settings

Parameter: placeholders

Type: list of JobQueuePlaceholder

Description: Job queue node placeholders mode

Parameter: prefix

Type: string

Description: UGE installation directory

Parameter: cell

Type: string

Description: UGE cell directory location

Parameter: version

Type: string

Description: Major UGE version

Parameter: accountingSynchronization

Type: boolean

Description: Update UGE job final state in BCM by calling qstat periodically

5.2.541 UnmanagedNodeConfiguration: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: description

Type: string

Description: description

Parameter: pxeConfigurationTemplate

Type: string

Description: PXE configuration template used to write out pxelinux.cfg

Parameter: grubConfigurationTemplate

Type: string

Description: Grub configuration template used to write out grub.cfg

Parameter: image

Type: reference to FSPart or None

Description: Image filesystem part used to boot nodes from

Parameter: pxelabel

Type: string

Description: PXE menu label to be used when this node boots

Parameter: keyValueSettings

Type: KeyValueSettings or None

Description: Key value settings used for all unmanaged nodes in this configuration unless otherwise specified

Parameter: bmcSettings

Type: BMCSettings or None

Description: Configure the baseboard management controller settings

Parameter: bootLoader

Type: enum

Description: Boot loader

Parameter: bootLoaderProtocol

Type: enum

Description: Boot loader protocol for retrieving initrd and vmlinuz

Parameter: bootLoaderFile

Type: string

Description: Alternative boot loader file

5.2.542 UnmanagedNode: Device

parent: Device

Parameter: unmanagedNodeConfiguration

Type: reference to UnmanagedNodeConfiguration

Description: The unmanaged node configuration used for this node

Parameter: ip

Type: IP

Description: Ip address

Parameter: network

Type: reference to Network or None

Description: Network to which this switch is connected

Parameter: additionalHostnames

Type: list of strings

Description: List of additional hostnames that should resolve to the interfaces IP address

Parameter: pxelabel

Type: string

Description: PXE menu label to be used when this node boots

Parameter: bmcIp

Type: IP

Description: BMC ip address

Parameter: bmcType

Type: enum

Description: The type of BMC interface available

Parameter: bmcSettings

Type: BMCSettings or None

Description: Configure the baseboard management controller settings

Parameter: biosSetup

Type: string

Description: BIOS setup

Parameter: bootLoader

Type: enum

Description: Boot loader

Parameter: bootLoaderProtocol

Type: enum

Description: Boot loader protocol for retrieving initrd and vmlinuz

Parameter: bootLoaderFile

Type: string

Description: Alternative boot loader file

Parameter: keyValueSettings

Type: KeyValueSettings or None

Description: Key value settings unique to this node

5.2.543 User: Entity

parent: Entity

Parameter: name

Type: string

Description: User login (e.g. donald)

Parameter: ID

Type: string

Description: User ID number

Parameter: commonName

Type: string

Description: Full name (e.g. Donald Duck)

Parameter: surname

Type: string

Description: Surname (e.g. Duck)

Parameter: groupID

Type: string

Description: Base group of this user

Parameter: loginShell

Type: string

Description: Login shell

Parameter: homeDirectory

Type: string

Description: Home directory

Parameter: password

Type: string

Description: Password

Parameter: homeDirOperation

Type: boolean

Description: Set to false to not create or move home directory

Parameter: shadowMin

Type: unsigned integer

Description: Minimum number of days required between password changes

Parameter: shadowMax

Type: unsigned integer

Description: Maximum number of days for which the user password remains valid.

Parameter: shadowWarning

Type: unsigned integer

Description: Number of days of advance warning given to the user before the user password expires

Parameter: shadowInactive

Type: unsigned integer

Description: Number of days of inactivity allowed for the user

Parameter: shadowLastChange

Type: unsigned integer

Description: Number of days between January 1, 1970 and the day when the user password was last changed

Parameter: shadowExpire

Type: unsigned integer

Description: Date on which the user login will be disabled

Parameter: email

Type: string

Description: email

Parameter: profile

Type: string

Description: Profile for Authorization

Parameter: certSerialNumber

Type: integer

Description: Serial number of the certificate assigned to user

Parameter: certCloudJobSerialNumber

Type: integer

Description: Serial number of the cloudjob certificate assigned to user

Parameter: projectManager

Type: ProjectManager or None

Description: Project manager

Parameter: `notes`

Type: `string`

Description: Administrator notes

Parameter: `homePage`

Type: `string`

Description: Home page

Parameter: `information`

Type: `string`

Description: Information added by CMDaemon

Parameter: `cloudJob`

Type: `boolean`

Description: Create a certificate with the cloudjob profile for cmjob

Parameter: `writeSshProxyConfig`

Type: `boolean`

Description: Write ssh proxy config

Parameter: `extraFields`

Type: `list of strings`

Description: *none*

Parameter: `extraValues`

Type: `list of strings`

Description: *none*

Parameter: `extraReadable`

Type: `list of strings`

Description: *none*

Parameter: `extraDescriptions`

Type: `list of strings`

Description: *none*

Parameter: `extraDefaults`

Type: `list of strings`

Description: *none*

5.2.544 Validation: Entity

parent: `Entity`

Parameter: `code`

Type: `unsigned integer`

Description: Code

Parameter: `field`

Type: string

Description: Field

Parameter: msg

Type: string

Description: Message

Parameter: warning

Type: integer

Description: Warning

5.2.545 VersionInfo:Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: cmVersion

Type: string

Description: none

Parameter: cmdaemonVersion

Type: string

Description: none

Parameter: cmdaemonBuildIndex

Type: unsigned integer

Description: none

Parameter: cmdaemonBuildHash

Type: string

Description: none

Parameter: databaseVersion

Type: unsigned integer

Description: none

5.2.546 WillChange:Entity

parent: Entity

Parameter: changeBaseType

Type: string

Description: Base type

Parameter: key

Type: unsigned integer

Description: Key

Parameter: parameter

Type: string

Description: Parameter

Parameter: autoChange

Type: integer

Description: Auto change

5.2.547 WireguardInfo: Entity

parent: Entity

Parameter: refNodeUniqueKey

Type: unsigned integer

Description: Node

Parameter: interface

Type: string

Description: Interface name

Parameter: publicKey

Type: string

Description: Public key

5.2.548 WlmCgroupsSettings: Entity

parent: Entity

Parameter: mountPoint

Type: string

Description: Where cgroups is mounted

Parameter: autoMount

Type: boolean

Description: If true then workload manager tries to mount a subsystem if it is not mounted yet

5.2.549 WlmCluster: Entity

parent: Entity

Parameter: name

Type: string

Description: Name

Parameter: moduleFileTemplate

Type: string

Description: Template content for system module file

Parameter: primaryServer

Type: reference to Node or None

Description: The WLM primary server (where the active WLM daemon will be running). This parameter has no effect in HA setup controlled by Bright.

Parameter: topologySwitches

Type: list of references to Switch

Description: List of switches that should be used to write the topology file

Parameter: network

Type: reference to Network or None

Description: Network that will be used to form FQDN node names

Parameter: tracingJobs

Type: list of strings

Description: A list of job ids to trace in CMDaemon

Parameter: enablePrejob

Type: boolean

Description: Enable Bright Cluster Manager powered prejob healthchecking in the workload manager

5.2.550 WlmNodeCustomizationEntry: Entity

parent: Entity

Parameter: key

Type: string

Description: Name of the key

Parameter: value

Type: string

Description: Value for the key

Parameter: enabled

Type: boolean

Description: Add the key/value to workload management node configuration or not

Parameter: notes

Type: string

Description: Administrator notes

5.2.551 WlmNodeResource: Entity

parent: Entity

Parameter: name

Type: string

Description: Resource name (Example: gpu)

Parameter: extraName

Type: string

Description: Additional name (example: tesla)

Parameter: amount

Type: unsigned integer

Description: Resource amount

Parameter: unit

Type: boolean

Description: The unit the amount is expressed in

Parameter: nodeKeys

Type: list of unsigned numbers

Description: Node keys

Parameter: refWlmClusterUniqueKey

Type: unsigned integer

Description: WlmCluster

5.2.552 WlmSubmitRole: Role

parent: Role

5.3 JSON Examples

complete.sh

```
#!/bin/bash
```

```
URL=https://localhost:8081/json/
```

```
user=root
```

```
pass=secretrootpassword
```

```
echo "===== login ====="
```

```
curl -c curl.cookieiest.txt -i -k -X POST -d \
```

```
'{"service":"login", "username":"root", "password":"' $pass'"}' $URL; echo
```

```
echo "===== master ====="
```

```
curl --cookie curl.cookieiest.txt -i -k -X POST -d \
```

```
'{"service":"cmdevice","call":"getNode", "arg":"master"}' $URL; echo
```

```
echo "===== logout ====="
```

```
curl --cookie curl.cookieiest.txt -i -k -X POST -d \
```

```
'{"service":"logout"}' $URL; echo
```

```
echo "===== denied ====="
```

```
curl --cookie curl.cookieiest.txt -i -k -X POST -d \
```

```
'{"service":"cmdevice","call":"getNode", "arg":"master"}' $URL; echo
```

```
rm -f curl.cookieiest.txt
```

```
echo "===== cert ====="
```

```
curl --cert $HOME/.cm/admin.pem --key $HOME/.cm/admin.key -i -k -X POST -d \
```

```
'{"service":"cmdevice","call":"getNode", "arg":"master"}' $URL; echo
```

curl.sh

```
#!/bin/bash

URL=https://localhost:8081/json/

if [ -z "$1" ]; then
    read -p "pass: " -s pass
else
    pass=$1
fi

curl -c curl.cookie.txt -i -k -X POST -d \
'{"service":"login", "username":"root", "password":"'${pass}'"}' $URL

# curl --cookie curl.cookie.txt -i -k -X POST -d \
'{"service":"cmsession", "call":"getLastEvents", "args": [0,256]}' $URL

curl --cookie curl.cookie.txt -i -k -X POST -d \
'{"service":"cmmain", "call":"getProfile"}' $URL

curl --cookie curl.cookie.txt -i -k -X POST -d \
'{"service":"cmmain", "call":"getSubjectName"}' $URL
```

devices.sh

```
#!/bin/bash

URL=https://localhost:8081/json/

if [ "$1" == "gzip" ]; then
    wget --certificate=$HOME/.cm/admin.pem --private-key=$HOME/.cm/admin.key \
        --header='Accept-Encoding: gzip' \
        --no-check-certificate --server-response -q0- $URL \
        --post-data='{"service":"cmdevice", "call":"getDevices"}'
else
    wget --certificate=$HOME/.cm/admin.pem --private-key=$HOME/.cm/admin.key --no-check-certificate \
        --server-response -q0- $URL --post-data='{"service":"cmdevice", "call":"getDevices"}'
fi
```

Tip: run as `./devices.sh | python -mjson.tool`.

loadone.sh

```
#!/bin/bash

URL=https://localhost:8081/json/

# not perfect but gets the job done
function jsonval {
    temp=`echo $json | sed 's/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\/g' | sed 's/[{}]/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\/g' | awk -v k="text" '{n=split($0,a,",");
    for (i=1; i<=n; i++) print a[i]}' | sed 's/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\/g' | sed 's/[\\,]/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\/g' | sed 's/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\/g' | grep -w
    $prop`
    r=$(echo ${temp##*}| tr ']' ' ' | tr ' ' '\\n' | cut -d: -f2 | sort -n)
    echo $(echo $r | cut -d' ' -f 1)
}

prop='uniqueKey'
```



```

node=master
json=`wget --certificate=$HOME/.cm/admin.pem --private-key=$HOME/.cm/admin.key --no-check-certificate \
--server-response -q0- $URL --post-data='{ "service": "cmdevice", "call": "getDevice", "arg": "'$node'" }'`
nkey=$(jsonval)
if [ -z $nkey ]; then
    echo $json
    exit 1
fi
echo "$node.uniqueKey = $nkey"

json=`wget --certificate=$HOME/.cm/admin.pem --private-key=$HOME/.cm/admin.key \
--no-check-certificate --server-response -q0- $URL \
--post-data='{ "service": "cmmon", "call": "getMonitoringMeasurable", "name": "LoadOne" }'`
mkey=$(jsonval)
echo "loadone.uniqueKey = $mkey"

now=$(date +%s)
day=$((now-86400))
echo "now is $now"
echo "day is $day"

cat <<EOF > /tmp/plot.json
{ "service" : "cmmon",
  "call" : "plot",
  "request" : { "entities" : [$nkey],
                "measurables" : [$mkey],
                "intervals" : 25,
                "rangeStart" : $((day*1000)),
                "rangeEnd" : $((now*1000))
              }
}
EOF
wget --certificate=$HOME/.cm/admin.pem --private-key=$HOME/.cm/admin.key \
--no-check-certificate -q0- https://master:8081/json --post-file=/tmp/plot.json | \
python -mjson.tool

```

login.sh

```

#!/bin/bash
URL=https://localhost:8081/json/
user=$USER
pass=secretpassword
wget --keep-session-cookies --save-cookies cookie.txt --no-check-certificate \
--server-response -q0- $URL --post-data='{ "service": "login", "username": "'$user'", "password": "'$pass'" }'
echo

```

logout.sh

```

#!/bin/bash
URL=https://localhost:8081/json/
wget --load-cookies cookie.txt --no-check-certificate --server-response -q0- $URL \
--post-data='{ "service": "logout" }'
rm cookie.txt
echo

```

node001.sh

```
#!/bin/bash
URL=https://localhost:8081/json/

if [ -z "$1" ]; then
    node=node001
else
    node=$1
fi

wget --certificate=$HOME/.cm/admin.pem --private-key=$HOME/.cm/admin.key \
--no-check-certificate --server-response -qO- $URL \
--post-data='{ "service": "cmdevice", "call": "getDevice", "arg": "'$node'" }' | python -mjson.tool
```

basic_information.sh

```
#!/bin/bash
URL=https://localhost:8081/json/

wget --certificate=$HOME/.cm/admin.pem --private-key=$HOME/.cm/admin.key \
--no-check-certificate --server-response -qO- $URL \
--post-data='{ "service": "cmupart", "call": "getBasicEntityInformation" }'
```

push_to_CMDaemon.sh

In the following example, the health check ManagedServicesOK, is pushed to CMDaemon with a FAIL value.

Example

```
[root@bright90 ~]# cat push_to_CMDaemon.sh
#!/bin/bash
URL='https://master:8081/monitoring/push/ManagedServicesOk?info=br0l&class=Push/Single&healthcheck=yes'
value='FAIL'
curl --cert $HOME/.cm/admin.pem --key $HOME/.cm/admin.key -i -k -X POST -d "$value" $URL; echo
```

Its behavior can be verified by checking the latest value for ManagedServicesOK before and after the push_to_CMDaemon.sh script is run:

Example

```
[root@bright90 ~]# curl --cert ~/.cm/admin.pem --key ~/.cm/admin.key -k
"https://master:8081/rest/v1/monitoring/latest?measurable=ManagedServicesOK&entity=bright90&indent=1"
{
  "data": [
    {
      "age": 89.735,
      "entity": "bright90",
      "measurable": "ManagedServicesOk",
      "raw": 0.0,
      "time": 1586450030968,
      "value": "PASS"
    }
  ]
}
```

```
[root@bright90 ~]# ./push_to_CMDaemon.sh
HTTP/1.1 200 OK
Content-Length: 55
Content-Type: application/json

{
  "values": {
    "added": 1,
    "provided": 1
  }
}
[root@bright90 ~]# curl --cert ~/.cm/admin.pem --key ~/.cm/admin.key -k
"https://master:8081/rest/v1/monitoring/latest?measurable=ManagedServicesOk&entity=bright90&indent=1"
{
  "data": [
    {
      "age": 3.357,
      "entity": "bright90",
      "info": "brol",
      "measurable": "ManagedServicesOk",
      "raw": 2.0,
      "time": 1586450124437,
      "value": "FAIL"
    }
  ]
}
```

A metric version of the push, using the measurable push-test-02 might look like:

```
#!/bin/bash
URL='https://localhost:8081/monitoring/push/push-test-02?info=brol&class=Push/Single&unit=s'
value=$(date +%s)
curl --cert $HOME/.cm/admin.pem --key $HOME/.cm/admin.key -i -k -X POST -d "$value" $URL; echo
```

A collection can be pushed as follows: To initialize (once):

```
#!/bin/bash
URL='https://localhost:8081/monitoring/initialize'
curl --cert $HOME/.cm/admin.pem --key $HOME/.cm/admin.key -i -k -X POST -d \
'[
  {"metric": "push-collection-01", "class": "Push/Collection"},
  {"metric": "push-collection-02", "class": "Push/Collection"}
]' $URL; echo
```

After initializing, sampling can be done with:

```
#!/bin/bash
URL='https://localhost:8081/monitoring/push'
curl --cert $HOME/.cm/admin.pem --key $HOME/.cm/admin.key -i -k -X POST -d \
'[
  {"metric": "push-collection-01", "value": 31},
  {"metric": "push-collection-02", "value": 32, "info": "Some message"}
]' $URL; echo
```