NVIDIA Base Command Manager 10

Developer Manual

Revision: 27e23e47f

Date: Fri Apr 26 2024

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Preface

Welcome to the *Developer Manual* for NVIDIA Base Command Manager 10.

0.1 About This Manual

This manual is aimed at helping developers who would like to program the NVIDIA Base Command 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 `cmgui` 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

Name Changes From Version 9.2 To 10

The cluster manager software was originally developed by Bright Computing and the name "Bright" featured previously in the product, repositories, websites, and manuals.

Bright Computing was acquired by NVIDIA in 2022. The corresponding name changes, to be consistent with NVIDIA branding and products, are a work in progress. There is some catching up to do in places. For now, some parts of the manual still refer to Bright Computing and Bright Cluster Manager. These remnants will eventually disappear during updates.

BCM in particular is a convenient abbreviation that happens to have the same letters as the former Bright Cluster Manager. With the branding change in version 10, Base Command Manager is the official full name for the product formerly known as Bright Cluster Manager, and BCM is the official abbreviation for Base Command Manager.

Regularly updated versions of the NVIDIA Base Command Manager 10 manuals are available on updated clusters by default at `/cm/shared/docs/cm`. The latest updates are always online at `https://docs.nvidia.com/base-command-manager`.

- 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 BCM.
- The *Edge Manual* describes how to deploy BCM Edge with BCM.
- The *Machine Learning Manual* describes how to install and configure machine learning capabilities with BCM.
- The *Containerization Manual* describes how to manage containers with BCM.

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 BCM environment and the addition of new hardware and/or applications. The manuals also regularly incorporate feedback from administrators and users, and any comments, suggestions or corrections will be very gratefully accepted at `manuals@brightcomputing.com`.

There is also a feedback form available via Base View, via the Account icon, ☰, following the click-path:

☰→`Help`→`Feedback`

0.3 Getting Administrator-Level Support

Support for BCM subscriptions from version 10 onwards is available via the NVIDIA Enterprise Support page at:

`https://www.nvidia.com/en-us/support/enterprise/`

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, the BCM support team can be contacted in order to arrange a support contract.

0.5 Getting Professional Services

The BCM support team normally differentiates between

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

Professional services can be provided via the NVIDIA Enterprise Services page at:
`https://www.nvidia.com/en-us/support/enterprise/services/`

1

NVIDIA Base Command Manager Python API

This chapter introduces the Python API of NVIDIA Base Command Manager.

The Python API package was completely overhauled in NVIDIA Base Command 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 BCM 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@basecm10 ~]# 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@basecm10 ~]# 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@basecm10 ~]# 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 many 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 BCM 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)
```

1.5 Inspecting The Entire Cluster

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

Example

```
[root@basecm10 ~]# cd /cm/local/examples/cmd/pythoncm/
[root@basecm10 pythoncm]# module load python3
[root@basecm10 pythoncm]# ./print-all.py
```

The example directory also contains a script that prints all metadata for all available entities in BCM:

Example

```
[root@basecm10 pythoncm]# ./entity_info.py
```

1.6 Performing Operations On Entities

All Python API functionality is contained in `/cm/local/apps/cmd/pythoncm/lib/python3.9/site-packages/pythoncm`.

Methods are documented inside the python code itself.

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

When operating on multiple entities, it is possible to iterate over them and do each operation individually.

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

However the same can also be done with a parallel version of the operation. When possible the parallel version should be used, because it is faster and requires less network traffic.

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

1.7 Monitoring

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:

```
data = cluster.monitoring.get_latest_monitoring_data([node001,
                                                      node002,
                                                      node003])
```

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@basecm10 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@basecm10 ~]# cd /cm/local/examples/cmd/pythoncm/
[root@basecm10 pythoncm]# module load python3
[root@basecm10 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@basecm10 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 BCM `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 Base 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. Base 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@basecm10 ~]# cat /path/to/my/metric
#!/bin/bash
echo $((RANDOM))
# Optionally provide extra information
echo "Extra information" >&3
```

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

Example

```
[basecm10]% monitoring setup
[basecm10->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@basecm10 ~]# cat /path/to/my/health-check
#!/bin/bash
if [ $((RANDOM)) -gt 8000 ]; then
  echo "PASS"
else
  echo "FAIL"
  # Optionally provide extra information
  echo "Extra information" >&3
fi
```

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

Example

```
[basecm10]% monitoring setup
[basecm10->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@basecm10 ~]# 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

```
[basecm10]% monitoring setup
[basecm10->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@basecm10 ~]# 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@basecm10 ~]# 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

```
[basecm10]% monitoring setup
[basecm10->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

```
[basecm10]% monitoring setup
[basecm10->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

```
[basecm10]% 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

```
[basecm10]% 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

```
[basecm10]% 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

```
[basecm10]% 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 BCM 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

```
[basecm10]% device use node001
[basecm10]% monitoringresources
CentOS7u5
Ethernet
category:default
```

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

Example

```
[basecm10]% device use node001
[basecm10]% add userdefinedresources MyResource
[basecm10]% append userdefinedresources MyOtherResource
[basecm10]% # wait ~10 seconds for the settings to propagate
[basecm10]% 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@basecm10~]# 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

```
[basecm10]% monitoring setup
[basecm10->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 BCM entity.

For this reason the standalone monitored entity was added in NVIDIA Base Command Manager 8.0.

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

BCM 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

```
[basecm10]% monitoring standalone
[basecm10->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@basecm10 ~]# 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

```
[basecm10]% monitoring setup
[basecm10->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 BCM nodes.

Example

```
[basecm10]% monitoring standalone
[basecm10->monitoring->standalone]% use MSD.0
[...standalone*[MSD.0*]]% latestmetricdata
...
lustre.free.space        12345         3m 47s
```

2.13 Debugging Standalone Scripts

Page 601 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

```
debug = os.environ.get('CMD_DEBUG', '0') == '1'
if debug:
   # print stuff to fd 3
```

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

```
[basecm10]% monitoring action
[basecm10->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

```
[basecm10]% monitoring action
[basecm10->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-friday9:00-17:00
monday-friday00:00-09:00;17:00-00:00;saturday-sunday
november-marchmonday-saturday13:00-17:00
may-septembermonday-friday09:00-18:00;saturday-sunday13:00-17:00
```

Further examples can be seen in section 12.4.4 of the *Administrator Manual*, page 574.

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	doQNeV1qksXr59O
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	BCM 10.0 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:	
<*name*>	**example value**
_SLASH_cm_SLASH_shared	rsize=32768,wsize=32768,hard,intr,async
_SLASH_dev_SLASH_pts	gid=5,mode-620
_SLASH_dev_SLASH_shm	defaults
_SLASH_home	rsize=32768,wsize=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_<*interface*>_BOND	
CMD_INTERFACE_<*interface*>_BRIDGE	
CMD_INTERFACE_<*interface*>_DHCP	
CMD_INTERFACE_<*interface*>_GATEWAY	
CMD_INTERFACE_<*interface*>_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 only allows data to be retrieved at the time of writing of this section (October 2018). Data cannot currently be updated or removed.

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 three commands give identical results:

```
[alice@basecm10 ~]$ curl -k --basic --user "alice:password" "https://master:8081/rest"
[alice@basecm10 ~]$ curl -k --basic --user "alice:$(path to password file)" "https://master:8081/rest"
[alice@basecm10 ~]$ 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 three commands—that is the string in the line that includes the text from `curl` to `8081` in the three `curl` commands—is designated by <*curlauth*> in this chapter. Thus, each of the commands can be represented by:

Example

```
[alice@basecm10 ~]$ <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:

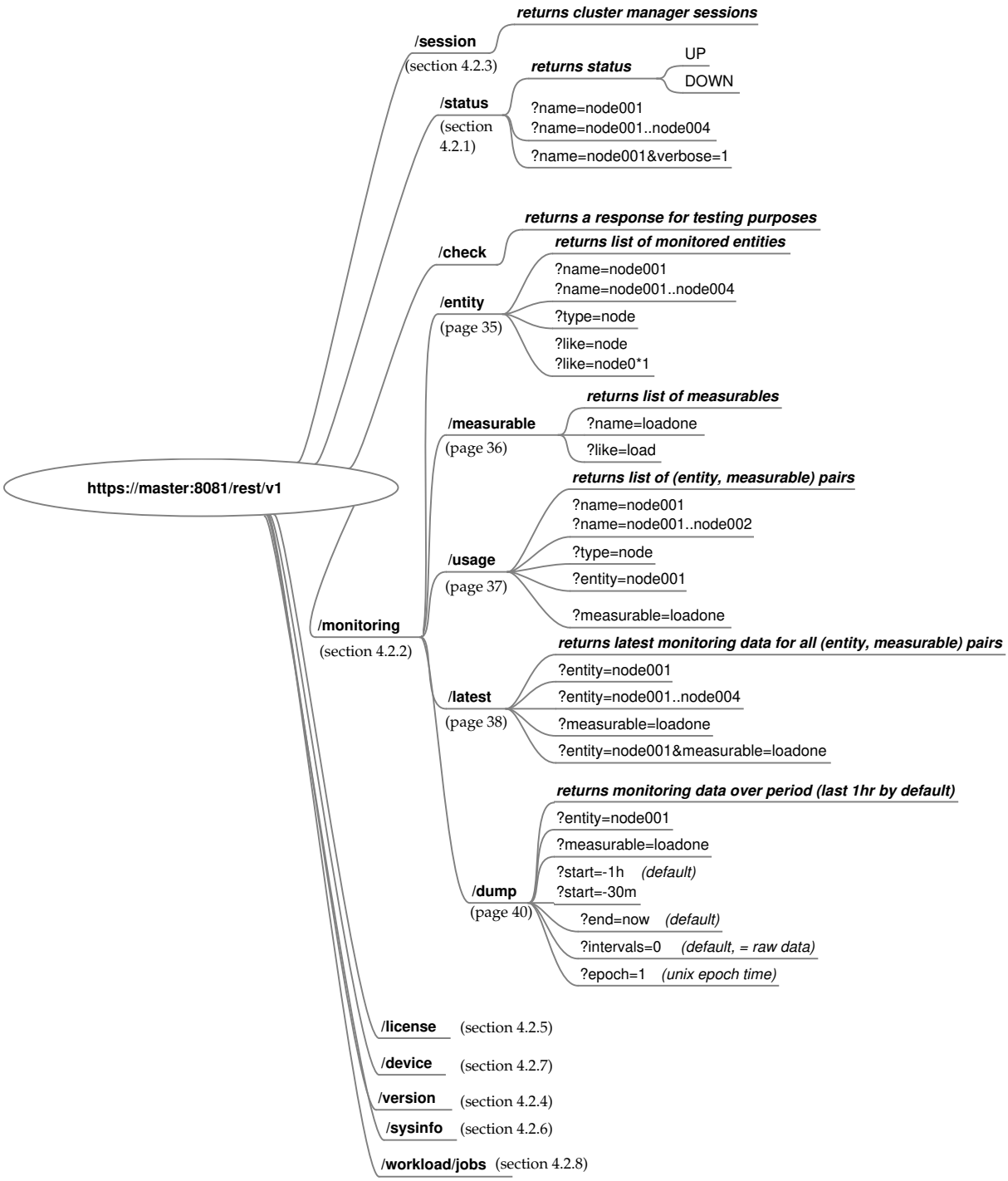

Figure 4.1: REST API Summary Tree

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@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest?indent=1"
[
 "v1"
]
```

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

Example

```
[alice@basecm10 ~]$ <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@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/status?indent=2"
[
  {
    "hostname": "basecm10",
    "status": "UP"
  },
  {
    "hostname": "node001",
    "status": "UP"
  },
```

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

The status can also be requested for a single device:

Example

```
[alice@basecm10 ~]$ <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 Base View and `cmsh` can also be used in the API:

Example

```
[alice@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/status?verbose=1&indent=2"
[
  {
    "health_check_failed": true,
    "health_check_unknown": false,
    "hostname": "basecm10",
    "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@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/monitoring/entity?name=node001&indent=1"
{
 "entities": [
  {
   "key": 38654705666,
   "name": "node001",
   "type": "PhysicalNode"
  }
 ]
}
[alice@basecm10 ~]$ <curlauth>/rest/v1/monitoring/entity?type=node&indent=1"
{
 "entities": [
  {
   "key": 38654705665,
   "name": "basecm10",
   "type": "HeadNode"
  },
  {
   "key": 38654705666,
   "name": "node001",
   "type": "PhysicalNode"
  },
  {
   "key": 38654705667,
   "name": "node002",
   "type": "PhysicalNode"
  }
 ]
}
```

```
[alice@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/monitoring/entity?like=lobal&indent=1"
{
 "entities": [
  {
   "key": 17179869185,
   "name": "globalnet",
   "type": "Network"
  }
 ]
}
[alice@basecm10 ~]$ <curlauth>/rest/v1/monitoring/entity?like=nod.0*1&indent=1"
{
 "entities": [
  {
   "key": 38654705666,
   "name": "node001",
   "type": "PhysicalNode"
  }
 ]
}
```

Measurables Via `/v1/monitoring/measurable`
This entry returns information about the defined measurables.

Example

```
[alice@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/monitoring/measurable?name=loadone&indent=1"
{
 "measurables": [
  {
    "key": 261993005138,
    "name": "LoadOne",
    "type": "metric"
  }
 ]
}
[alice@basecm10 ~]$ <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@basecm10 ~]$ <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@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/monitoring/usage?measurable=loadone&indent=1"
{
 "data": [
  {
   "entity": "basecm10",
   "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@basecm10 ~]$ <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@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/monitoring/latest?entity=node001..node004&indent=1"
```

...*as for previous output but for the range of* `nodes001..node004`...

```
[alice@basecm10 ~]$ <curlauth>/rest/v1/monitoring/latest?measurable=LoadOne&indent=1"
{
 "data": [
  {
   "age": 114.099,
   "entity": "basecm10",
   "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@basecm10 ~]$ <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@basecm10 ~]$ <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@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/session?indent=1"
[
```

```
 {
  "address": "127.0.0.1",
  "group": "admin",
  "node": "basecm10",
  "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@basecm10 ~]$ <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@basecm10 ~]$ <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=basecm10",
  "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@basecm10 ~]$ <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@basecm10 ~]$ <curlauth>/rest/v1/device?indent=1"
[
  {
    "cluster": "basecm10",
    "hostname": "basecm10",
    "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": "basecm10",
    "hostname": "node001",
    "ip": "10.141.0.1",
    "mac": "FA:16:3E:2B:A4:31",
    "network": "internalnet",
    "type": "PhysicalNode"
  },
  {
    "category": "default",
    "cluster": "basecm10",
    "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@basecm10 ~]$ <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",
  "sumbit_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",
  "sumbit_time": "2023/06/08 14:25:57",
  "user": "charlie"
 },
 {
  "account": "projecty",
  "group": "alice",
  "job_id": "2307",
  "job_name": "iozone",
...
```

5

NVIDIA Base Command Manager JSON API

This chapter gives an alphabetical list of the JSON API services and entities available for NVIDIA Base Command 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 AccessSettings: Entity

parent: Entity

Parameter: username
Type: string
Description: Username for ssh and/or REST API

Parameter: password
Type: string
Description: Password for ssh and/or REST API

Parameter: rest_port
Type: unsigned integer
Description: Rest port, set to 0 to disable all REST calls

5.2.2 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

5.2.3 `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: Volume size. Should be at least 4 TiB.

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.

5.2.4 `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 `ArchOSInfo: Entity`

parent: `Entity`

Parameter: `arch`
Type: enum
Description: Architecture

Parameter: `os`
Type: enum

Description: Operating system

5.2.6 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 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

5.2.7 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 atteched to gets terminated

5.2.8 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

5.2.9 `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

5.2.10 `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 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.

5.2.11 AzureLocation: CloudRegion

parent: CloudRegion

5.2.12 AzureManagedDiskParameters: Entity

parent: Entity

Parameter: id
Type: string
Description: Managed disks resource ID

Parameter: storageAccountType
Type: string
Description: Storage account type for managed disks

5.2.13 AzureOSDisk: AzureDisk

parent: AzureDisk

Parameter: cachingType
Type: enum
Description: Disk caching type

5.2.14 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

5.2.15 `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` or None
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` or None
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

5.2.16 `AzureVMSize: CloudType`

parent: `CloudType`

Parameter: `hyperVGenerations`
Type: list of strings
Description: Supported Hyper-V generations.

5.2.17 `BackupInfo: Entity`

parent: `Entity`

Parameter: `ref_source_node_uuid`
Type: UUID
Description: Node

Parameter: `ref_backup_node_uuid`
Type: UUID
Description: Node

Parameter: `ref_fspart_uuid`
Type: UUID
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

5.2.18 `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

5.2.19 `BadEntityManagers: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `added`
Type: list of strings
Description: Added

Parameter: `removed`
Type: list of strings
Description: Removed

Parameter: `changed`
Type: list of strings
Description: Changed

Parameter: `error`
Type: string
Description: Error

5.2.20 `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

5.2.21 `BasicResource: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name

Parameter: `dependency`
Type: UUID
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

5.2.22 `BeeGFSClientConfig: Entity`

parent: `Entity`

Parameter: `ref_beegfs_cluster_uuid`
Type: UUID
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 offlinewhen 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 preffered metadata servers

Parameter: `preferredStorageFile`
Type: string
Description: Path to a file with preffered 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

5.2.23 `BeeGFSClientConnectionSettings: 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.

5.2.24 `BeeGFSClientRole: Role`

parent: `Role`

Parameter: `configurations`
Type: list of `BeeGFSClientConfig`

Description: List of BeeGFS client configurations

5.2.25 `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

5.2.26 `BeeGFSHelperConfig: Entity`

parent: `Entity`

Parameter: `ref_beegfs_cluster_uuid`
Type: UUID
Description: BeeGFS cluster

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

5.2.27 `BeeGFSHelperConnectionSettings: Entity`

parent: `Entity`

Parameter: `portTCP`
Type: unsigned integer

Description: TCP port for the service

5.2.28 BeeGFSHelperRole: Role

parent: Role

Parameter: configurations
Type: list of BeeGFSHelperConfig
Description: List of BeeGFS helper configurations

5.2.29 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

5.2.30 BeeGFSManagementConfig: Entity

parent: Entity

Parameter: ref_beegfs_cluster_uuid
Type: UUID
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

5.2.31 `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

5.2.32 BeeGFSManagementRole: Role

parent: Role

Parameter: configurations
Type: list of BeeGFSManagementConfig
Description: List of BeeGFS management configurations

5.2.33 BeeGFSMetadataConfig: Entity

parent: Entity

Parameter: ref_beegfs_cluster_uuid
Type: UUID
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

5.2.34 `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

5.2.35 `BeeGFSMetadataRole: Role`

parent: `Role`

Parameter: `configurations`
Type: list of `BeeGFSMetadataConfig`
Description: List of BeeGFS metadata configurations

5.2.36 `BeeGFSStorageConfig: Entity`

parent: `Entity`

Parameter: `ref_beegfs_cluster_uuid`
Type: UUID

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

5.2.37 `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

5.2.38 `BeeGFSStorageRole: Role`

parent: `Role`

Parameter: `configurations`
Type: list of `BeeGFSStorageConfig`
Description: List of BeeGFS storage configurations

5.2.39 `BlockingOperation: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `message`
Type: string
Description: Message

5.2.40 `BlockingProvisioningOperation: BlockingOperation`

parent: `BlockingOperation`

Parameter: `request_uuids`
Type: list of unsigned numbers
Description: Request UUIDs

5.2.41 `BlockingWarningOperation: BlockingOperation`

parent: `BlockingOperation`

5.2.42 `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: Privilege given to the user

Parameter: `firmwareManageMode`

Type: enum
Description: Firmware manage mode

5.2.43 `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: `imagesFromProvisioningRole`
Type: boolean
Description: Only allow nodes to boot from images defined in the provisioning role

Parameter: `syncFSParts`
Type: enum
Description: Sync FSParts mode

Parameter: `fsparts`
Type: list of references to `FSPart`
Description: FSParts

5.2.44 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.

5.2.45 BurnStatus: Entity

parent: Entity

Parameter: ref_node_uuid
Type: UUID
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.

5.2.46 `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

5.2.47 CapiRole: Role

parent: Role

Parameter: labels

Type: list of strings

Description: labels to attach to the ByoHost CR in the form labelname=labelVal for e.g. '–label site=apac –label cores=2'

Parameter: metricsBindAddress

Type: string

Description: metricsbindaddress is the TCP address that the controller should bind to for serving prometheus metrics. It can be set to '0' to disable the metrics serving (default ':8888')

Parameter: level

Type: unsigned integer

Description: Number for the log level verbosity

Parameter: options

Type: list of strings

Description: Additional parameters for byoh host agent

Parameter: kubeCluster

Type: reference to KubeCluster

Description: The Kubernetes cluster instance (pointer)

5.2.48 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 signed numbers
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: free JSON object
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 `FSExport`
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: `dpuSettings`
Type: `DPUSettings` or None
Description: Configure the DPU settings

Parameter: `proxySettings`
Type: `ProxySettings` or None
Description: Configure the proxy server settings

Parameter: `nodeInstallerDisk`
Type: boolean
Description: The node has its 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: `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

5.2.49 `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: `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: `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.

5.2.50 `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.

5.2.51 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

5.2.52 CephMonitorRole: Role

parent: Role

Parameter: dataPath
Type: string
Description: Path to the Monitor data

5.2.53 CephOSDBlueStoreConfig: 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

5.2.54 CephOSDConfig: Entity

parent: Entity

Parameter: name
Type: string
Description: Name

5.2.55 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: The effective number of placement groups for placement to use when calculating data placement

Parameter: `pg_num`
Type: unsigned integer
Description: The effective number of placement groups to use when calculating data placement

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: `min_size`
Type: unsigned integer
Description: *none*

5.2.56 `CephOSDRole: Role`

parent: `Role`

Parameter: `osdconfigs`
Type: list of `CephOSDConfig`
Description: OSD configurations

5.2.57 `CephState: Entity`

parent: `Entity`

Parameter: `ref_ceph_uuid`
Type: UUID

Description: Ceph

Parameter: `version`
Type: unsigned integer
Description: *none*

Parameter: `ref_ceph_node_uuids`
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

5.2.58 `Certificate: Entity`

parent: `Entity`

Parameter: `PEM`
Type: string
Description: *none*

Parameter: `revoked`
Type: boolean

Description: Certifcate has been revoked and can not be used

Parameter: `serialNumber`
Type: integer
Description: Serial number

Parameter: `remaining`
Type: integer
Description: Remaining time until certifcate 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 certifcate can be used sign other certifcates

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

5.2.59 `CertificateInfo: Entity`

parent: `Entity`

Parameter: `certificate`
Type: `Certificate`
Description: Certificate

Parameter: `private_key`
Type: string
Description: Optional private key field.

5.2.60 `CertificateRequest: Entity`

parent: `Entity`

Parameter: `CSR`
Type: string
Description: *none*

Parameter: `session_uuid`
Type: UUID

Description: Session

Parameter: `clientType`
Type: unsigned integer
Description: Client type

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

5.2.61 `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

5.2.62 `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: `groupByAccountingInfo`
Type: list of strings
Description: Group by accounting info

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: `accountingInfo`
Type: free JSON object
Description: Accounting info

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

5.2.63 `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)

5.2.64 `CloudDirectorRole: DirectorRole`
parent: `DirectorRole`

Parameter: `bootImageFromProvisioningRole`
Type: boolean
Description: Only allow nodes to boot from images defined in the provisioning role

5.2.65 `CloudGatewayRole: Role`
parent: `Role`

5.2.66 `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` or None
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*

5.2.67 `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*

5.2.68 `CloudNode: ComputeNode`

parent: `ComputeNode`

Parameter: `cloudSettings`
Type: `CloudSettings`
Description: Submode containing all cloud node settings

5.2.69 `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

5.2.70 `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

5.2.71 `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)

5.2.72 `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*

5.2.73 `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 comming with the type. Azure: the maximum amount of data disk which can be attached to the VMs of this type. OCI: The number of local disks available for this shape.

Parameter: `description`
Type: string
Description: The description.

5.2.74 `ClusterSetup: Entity`

parent: `Entity`

Parameter: `ref_partition_uuid`
Type: UUID
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

5.2.75 `CMDaemonBackgroundTask: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `ref_entity_uuid`
Type: UUID
Description: Entity

Parameter: `name`
Type: string
Description: Name

Parameter: `updates`
Type: list of strings
Description: Updates

Parameter: `exitCode`
Type: integer
Description: Exit code

Parameter: `status`
Type: enum
Description: Status

Parameter: `startTime`
Type: unsigned integer
Description: Start time

Parameter: `endTime`
Type: unsigned integer
Description: End time

5.2.76 `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

5.2.77 `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

5.2.78 `CMDaemonFailoverGroupStatus: Entity`

parent: `Entity`

Parameter: `failoverStage`
Type: integer
Description: Failover stage

Parameter: `ref_active_node_uuid`
Type: UUID
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

5.2.79 `CMDaemonFailoverPeer: Entity`

parent: `Entity`

Parameter: `ref_head_node_uuid`
Type: UUID
Description: Head node

Parameter: `status`
Type: list of strings
Description: Status

Parameter: `failCount`
Type: list of unsigned numbers
Description: Number of sequencial times failure was detected

5.2.80 `CMDaemonFailoverStatus: Entity`

parent: `Entity`

Parameter: `ref_head_node_uuid`
Type: UUID
Description: Head node to which handeled request

Parameter: `ref_active_head_node_uuid`
Type: UUID
Description: Active head node

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

5.2.81 `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/cmgui/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

5.2.82 `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: `StorageNodePolicy` or None
Description: This policy will be used to start new storage nodes

Parameter: `extraOptions`
Type: list of strings
Description: Extra options

5.2.83 `CMJobIntermediateStorage: Entity`

parent: `Entity`

5.2.84 `CMService: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name

Parameter: `tokens`
Type: list of strings
Description: Tokens belonging to this service

5.2.85 `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 its 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: `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: UUID
Description: Indicate from which template node this node was copied

5.2.86 `ConfigFileVersion: Entity`

parent: `Entity`

Parameter: `node_uuid`
Type: UUID
Description: Node

Parameter: `filename`
Type: string
Description: File name

Parameter: `content`
Type: string
Description: Content of the file

Parameter: `creationTime`
Type: timestamp

Description: Creation time

5.2.87 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

5.2.88 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

5.2.89 `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

5.2.90 `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

5.2.91 `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: `separator`
Type: string
Description: *none*

5.2.92 `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*

5.2.93 `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: `switchPorts`
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, cimc0 or rshim0)

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 `DeviceStatus: Entity`

parent: `Entity`

Parameter: `ref_device_uuid`
Type: UUID
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*

5.2.95 `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 hostname. 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

5.2.96 `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

5.2.97 `DiskAssertion: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name.

Parameter: `script`
Type: string
Description: Assertion script.

Parameter: `args`
Type: string
Description: Script arguments.

5.2.98 `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

5.2.99 `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*

5.2.100 `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 `DiskPartitionInfo: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.102 `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

5.2.103 `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.

5.2.104 `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 `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

5.2.106 `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

5.2.107 `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

5.2.108 `DockerStorageAufsBackend`: `DockerStorageBackend`

parent: `DockerStorageBackend`

Parameter: `options`
Type: list of strings
Description: Extra options used for the AUFS storage backend

5.2.109 DockerStorageBackend: Entity

parent: Entity

Parameter: name

Type: string

Description: Docker storage backend name

5.2.110 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)

5.2.111 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

5.2.112 DPUInfo: Entity

parent: Entity

Parameter: index
Type: list of unsigned numbers
Description: *none*

Parameter: name
Type: list of strings
Description: *none*

Parameter: info
Type: string
Description: *none*

Parameter: opnStr
Type: string
Description: *none*

5.2.113 DPUNode: ComputeNode

parent: ComputeNode

Parameter: dpuSettings
Type: DPUSettings or None
Description: Submode containing all DPU node settings

Parameter: hostNode
Type: reference to Node
Description: Host node

5.2.114 DPUSettings: Entity

parent: Entity

Parameter: operation_mode
Type: enum
Description: Operation mode

Parameter: display_level
Type: enum
Description: Display level

Parameter: boot_mode
Type: enum
Description: Boot mode

Parameter: drop_mode
Type: enum
Description: Drop mode

Parameter: boot_timeout
Type: unsigned integer
Description: Boot timeout

Parameter: boot_order
Type: list of strings
Description: Boot order

Parameter: interface_mode_port1
Type: enum
Description: Interface mode port 1

Parameter: interface_mode_port2
Type: enum
Description: Interface mode port 2

Parameter: hw_offload
Type: boolean
Description: Offload OVS to hardware

Parameter: keyValueSettings
Type: KeyValueSettings or None
Description: Key value settings which can be passed to the DPU manage script

5.2.115 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

5.2.116 `DrainResult: Entity`
parent: `Entity`

Parameter: `ref_entity_uuid`
Type: UUID
Description: Entity

Parameter: `success`
Type: boolean
Description: Success

Parameter: `ref_node_uuids`
Type: list of unsigned numbers
Description: Node

Parameter: `ref_queue_uuids`
Type: list of unsigned numbers
Description: Job queue

Parameter: `reason`
Type: list of strings
Description: Reason

Parameter: `result`
Type: enum
Description: Result

5.2.117 `EC2AvailabilityZone: Entity`
parent: `Entity`

Parameter: `name`
Type: string
Description: Name

5.2.118 `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.

5.2.119 `EC2EphemeralStorage`: `EC2Storage`

parent: `EC2Storage`

Parameter: `volumeId`
Type: string
Description: Ephemral ID

Parameter: `size`
Type: unsigned integer
Description: Size

5.2.120 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.

5.2.121 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.

5.2.122 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

5.2.123 `EC2Region: CloudRegion`

parent: `CloudRegion`

Parameter: `url`
Type: string
Description: url

Parameter: `availabilityZones`
Type: list of `EC2AvailabilityZone`
Description: Availability zones

5.2.124 `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

5.2.125 `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` or None
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

Parameter: `capacityReservationPreference`
Type: string
Description: Capacity reservation preference ('open' or 'none')

Parameter: `capacityReservationId`
Type: string
Description: Capacity reservation ID

Parameter: `capacityReservationResourceGroupARN`
Type: string
Description: Capacity reservation resource group ARN

5.2.126 `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.

5.2.127 `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

5.2.128 `EC2Type: CloudType`

parent: `CloudType`

Parameter: `virtualizationType`
Type: string
Description: Virtualization type.

5.2.129 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.

5.2.130 `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: `externallyVisibleHeadNodeIp`
Type: IP
Description: Head node IP that will be use by this director

Parameter: `syncCmShared`
Type: boolean
Description: Sync /cm/shared if required

5.2.131 `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

5.2.132 `EntityManagersHash: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `name`

Type: list of strings
Description: Name

Parameter: `hashes`
Type: list of strings
Description: Hashes

5.2.133 `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

5.2.134 `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.

5.2.135 `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

5.2.136 `ExternalOperationFirmwareInfoResult: ExternalOperationResult`

parent: `ExternalOperationResult`

Parameter: `firmwareInfo`
Type: list of `FirmwareInfo`
Description: Firmware info

5.2.137 `ExternalOperationJSONResult: ExternalOperationResult`

parent: `ExternalOperationResult`

Parameter: `output`
Type: free JSON object
Description: Output

Parameter: `error`
Type: string
Description: Error

5.2.138 `ExternalOperationRawResult: ExternalOperationResult`

parent: `ExternalOperationResult`

Parameter: `output`
Type: string
Description: Output

Parameter: `error`
Type: string
Description: Error

5.2.139 `ExternalOperationResult: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `result`
Type: enum
Description: Result

5.2.140 `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

5.2.141 FabricConfigurationBinding: Entity

parent: Entity

Parameter: ref_topology_zone_uuid
Type: UUID
Description: Topology zone

Parameter: ref_topology_dsp_uuids
Type: list of unsigned numbers
Description: Topology DSPs bound to this zone, host

Parameter: ref_topology_link_uuids
Type: list of unsigned numbers
Description: Topology links bound to this zone, host

5.2.142 FabricConfigurationBindingStatus: Entity

parent: Entity

Parameter: ref_fabric_switch_uuid
Type: UUID
Description: FabricSwitch

Parameter: bindings
Type: list of FabricConfigurationBinding
Description: Bindings

5.2.143 FabricConfigurationFreeBinding: FabricConfigurationBinding

parent: FabricConfigurationBinding

5.2.144 FabricConfigurationHostBinding: FabricConfigurationBinding

parent: FabricConfigurationBinding

Parameter: ref_topology_host_uuid
Type: UUID
Description: Topology host

5.2.145 FabricConfigurationLinkBinding: FabricConfigurationBinding

parent: FabricConfigurationBinding

Parameter: ref_topology_link_uuid
Type: UUID
Description: Topology link

5.2.146 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: `ref_fabric_switch_uuids`
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: `FabricConfigurationTopologySwitch`
Description: The switch in the topology that will be used for all management operations

Parameter: `topologyBindings`
Type: list of `FabricConfigurationBinding`
Description: Fixed topology bindings

5.2.147 `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

5.2.148 `FabricConfigurationTopologyDSP`: `FabricConfigurationTopologyDevice`

parent: `FabricConfigurationTopologyDevice`

Parameter: `fabricResourceBox`
Type: reference to `FabricResourceBox` or None

Description: Host

Parameter: `side`
Type: enum
Description: Side of the fabricResourceBox

5.2.149 `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

5.2.150 `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

5.2.151 `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

5.2.152 `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

5.2.153 `FabricConfigurationTopologyZone: Entity`

parent: `Entity`

Parameter: `index`
Type: unsigned integer
Description: The index of the zone

Parameter: `name`
Type: string
Description: Name of the zone

5.2.154 `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

5.2.155 FabricNodeStatus: Entity

parent: Entity

Parameter: ref_node_uuid
Type: UUID
Description: Node

Parameter: good
Type: boolean
Description: Good

Parameter: info
Type: string
Description: Information

5.2.156 FabricResourceBox: FabricDevice

parent: FabricDevice

5.2.157 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

5.2.158 `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

5.2.159 FabricResourceBoxInformation: Entity

parent: Entity

Parameter: ref_topology_dsp_uuid
Type: UUID
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

5.2.160 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

5.2.161 FailoverRole: Role

parent: Role

Parameter: syncCmShared
Type: boolean

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

5.2.162 `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

5.2.163 `FileWriteInfo: Entity`

parent: `Entity`

Parameter: `ref_device_uuid`
Type: UUID
Description: Device

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

5.2.164 `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

5.2.165 `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

5.2.166 `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

5.2.167 `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

5.2.168 FirewallZone: Entity

parent: Entity

Parameter: zone
Type: string
Description: Zone

Parameter: zone_type
Type: enum
Description: Type

Parameter: options
Type: string
Description: Options

5.2.169 FirmwareInfo: Entity

parent: Entity

Parameter: ref_node_uuid
Type: UUID
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

5.2.170 `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*

5.2.171 `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

5.2.172 `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.

5.2.173 `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*

5.2.174 `FSPartAssociation: Entity`

parent: `Entity`

Parameter: `node`
Type: reference to `Node`

Description: Node this association is associated with.

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: `disabled`
Type: boolean
Description: Disabled

Parameter: `enableInHA`
Type: boolean
Description: Enable in HA

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: `backupDirectory`
Type: string
Description: Backup directory

5.2.175 `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.

5.2.176 `FSPartInfo`: `Entity`

parent: `Entity`

Parameter: `ref_fspart_uuid`
Type: UUID
Description: FSPart

Parameter: `ref_node_uuid`
Type: UUID

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

5.2.177 `FSPartProviderAssociation: FSPartAssociation`

parent: `FSPartAssociation`

Parameter: `onlyWhenActive`
Type: boolean
Description: Only use provider association if the node is the active head node

5.2.178 `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

5.2.179 `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: Instance capacity. Should be at least 3600 GiB.

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

5.2.180 `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

5.2.181 `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

5.2.182 `GenericRole: Role`

parent: `Role`

Parameter: `services`
Type: list of strings
Description: Services managed by this role

Parameter: `configuration`
Type: list of `GenericRoleConfiguration`
Description: Configurations

Parameter: `extraEnvironment`
Type: list of `GenericRoleEnvironment`
Description: Additional environment to be passed to scripts

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

5.2.183 `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

5.2.184 `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

5.2.185 `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

5.2.186 `GenericRoleStaticConfiguration`: `GenericRoleConfiguration`
parent: `GenericRoleConfiguration`

Parameter: `content`
Type: string
Description: Content to write into file

Parameter: `filemask`
Type: unsigned integer
Description: Filemask

5.2.187 `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

5.2.188 GenericRoleTemplatedConfiguration: GenericRoleConfiguration

parent: GenericRoleConfiguration

Parameter: templateContent
Type: string
Description: Template to use for writing file

5.2.189 GNSSLocation: Entity

parent: Entity

Parameter: ref_entity_uuid
Type: UUID
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*

5.2.190 GPUInfo: Entity

parent: Entity

Parameter: name
Type: string
Description: *none*

Parameter: brand
Type: string
Description: *none*

Parameter: index
Type: unsigned integer

Description: *none*

Parameter: `pciBusId`
Type: string
Description: *none*

Parameter: `pciDevId`
Type: unsigned integer
Description: *none*

Parameter: `pciSubSysId`
Type: unsigned integer
Description: *none*

Parameter: `serial`
Type: string
Description: *none*

Parameter: `vBios`
Type: string
Description: *none*

Parameter: `driver`
Type: string
Description: *none*

Parameter: `powerLimit`
Type: unsigned integer
Description: *none*

Parameter: `nvlinkUp`
Type: unsigned integer
Description: *none*

Parameter: `nvlinkDown`
Type: unsigned integer
Description: *none*

Parameter: `nvlinkSpeed`
Type: unsigned integer
Description: *none*

5.2.191 `GPUProfilingMetricInfo: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID

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

5.2.192 `GPUSettings: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Range of GPUs for which these settings apply

5.2.193 `GpuStatusEntry: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.194 `GridEngineJob: Job`

parent: `Job`

5.2.195 `GridEngineJobQueue: JobQueue`

parent: `JobQueue`

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

5.2.196 `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

5.2.197 `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: `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

5.2.198 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

5.2.199 `GuiCephOsdPoolInfo: Entity`

parent: `Entity`

Parameter: `ref_ceph_osdpool_uuid`
Type: UUID
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

5.2.200 `GuiCephOverview: Entity`

parent: `Entity`

Parameter: `refCeph_uuid`
Type: UUID
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

5.2.201 `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

5.2.202 `GuiClusterOverview: Entity`

parent: `Entity`

Parameter: `ref_partition_uuid`
Type: UUID
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: `dpuNodesUp`
Type: unsigned integer
Description: Number of DPU nodes that are listed as up

Parameter: `dpuNodesDown`
Type: unsigned integer
Description: Number of DPU nodes that are listed as down

Parameter: `dpuNodesClosed`
Type: unsigned integer
Description: Number of DPU nodes that are listed as closed

Parameter: `dpuNodesTotal`
Type: unsigned integer
Description: Number of DPU 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: `managedSwitchesUp`
Type: unsigned integer
Description: Number of managed switches that are listed as up

Parameter: `managedSwitchesDown`
Type: unsigned integer
Description: Number of managed switches that are listed as down

Parameter: `managedSwitchesClosed`

Type: unsigned integer
Description: Number of managed switches that are listed as closed

Parameter: `managedSwitchesTotal`
Type: unsigned integer
Description: Number of managed switches

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: Average{allnodes} (min(load, cores) / cores)

Parameter: `freeRate`
Type: float
Description: Formula: 1 - Average{allnodes} (min(load, cores) / cores)

5.2.203 `GuiDiskUsage: Entity`

parent: `Entity`

Parameter: `ref_device_uuid`
Type: UUID
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

5.2.204 GuiFabricConfigurationPortmap: Entity

parent: Entity

Parameter: ref_fabric_configuration_uuid
Type: UUID
Description: FabricConfiguration

Parameter: state
Type: enum
Description: State

Parameter: name
Type: string
Description: Name

Parameter: switches
Type: list of GuiFabricSwitchOverview
Description: Switches

5.2.205 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

5.2.206 `GuiFabricSwitchOverview: Entity`

parent: `Entity`

Parameter: `ref_fabric_switch_uuid`
Type: UUID
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

5.2.207 `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

5.2.208 GuiGPU: Entity

parent: Entity

Parameter: ref_device_uuid
Type: UUID
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

5.2.209 GuiJob: Entity

parent: Entity

Parameter: ref_wlm_cluster_uuid
Type: UUID
Description: WlmCluster

Parameter: ref_jobqueue_uuid
Type: UUID

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

5.2.210 `GuiKubeClusterOverview`: `Entity`

parent: `Entity`

Parameter: `ref_kube_cluster_uuid`
Type: UUID
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

5.2.211 `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

5.2.212 `GuiNodeOverview: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.213 `GuiNodeStatus: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.214 `GuiPDUBank: Entity`

parent: `Entity`

Parameter: `bank`
Type: unsigned integer
Description: Bank

Parameter: `load`
Type: float
Description: Load

5.2.215 `GuiPDUOutlet: Entity`

parent: `Entity`

Parameter: `outlet`
Type: unsigned integer
Description: Outlet

Parameter: `status`
Type: enum
Description: Status

Parameter: `ref_assiged_devices_uuids`
Type: list of unsigned numbers
Description: Assigned

5.2.216 `GuiPDUOverview: Entity`

parent: `Entity`

Parameter: `ref_powerdistributionunit_uuid`
Type: UUID
Description: *none*

Parameter: `model`
Type: string

Description: *none*

Parameter: `outlets`
Type: list of `GuiPDUOutlet`
Description: *none*

Parameter: `banks`
Type: list of `GuiPDUBank`
Description: *none*

5.2.217 `GuiSwitchOverview: Entity`

parent: `Entity`

Parameter: `ref_switch_uuid`
Type: UUID
Description: Switch

Parameter: `model`
Type: string
Description: Model

Parameter: `ports`
Type: list of `GuiSwitchPort`
Description: Ports

Parameter: `info`
Type: free JSON object
Description: Additional information

5.2.218 `GuiSwitchPort: Entity`

parent: `Entity`

Parameter: `prt`
Type: unsigned integer
Description: Port

Parameter: `name`
Type: string
Description: Name

Parameter: `status`
Type: string
Description: Status

Parameter: `uplink`
Type: boolean
Description: Uplink

Parameter: `assigned`
Type: UUID
Description: The device assigned to this port

Parameter: `detected`
Type: string
Description: MAC addresses or hosts detected on this port

Parameter: `speed`
Type: unsigned integer
Description: Speed

5.2.219 `GuiWorkload: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Queue name

Parameter: `scheduler`
Type: string
Description: Scheduler

Parameter: `slots`
Type: string
Description: Slots

Parameter: `ref_node_uuids`
Type: list of unsigned numbers
Description: Node

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: float
Description: Average duration of jobs

Parameter: `estimatedDelay`
Type: float
Description: Estimated delay for a new job to start

5.2.220 `HeadNode: Node`

parent: `Node`

5.2.221 `HeadNodeRole: Role`

parent: `Role`

Parameter: `failoverId`
Type: unsigned integer
Description: *none*

Parameter: `disableAutomaticExports`
Type: boolean
Description: Disable creation of automatic filesystem exports

5.2.222 `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

5.2.223 `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

5.2.224 `Job: Entity`

parent: `Entity`

Parameter: `ref_wlm_cluster_uuid`
Type: UUID
Description: WlmCluster

Parameter: `ref_jobqueue_uuid`
Type: UUID
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: `accountingInfo`

Type: free JSON object
Description: Accounting info

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 canceled)

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 per node

Parameter: `requestedMemory`
Type: unsigned integer
Description: Requested memory per node

Parameter: `requestedSlots`
Type: unsigned integer

Description: Requested slots

Parameter: `ref_extra_jobqueue_uuids`
Type: list of unsigned numbers
Description: Extra queues

5.2.225 `JobInfo: Entity`

parent: `Entity`

Parameter: `ref_wlm_cluster_uuid`
Type: UUID
Description: WlmCluster

Parameter: `ref_jobqueue_uuid`
Type: UUID
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: `accountingInfo`
Type: free JSON object
Description: Accounting info

Parameter: `nodes`
Type: list of unsigned numbers
Description: List of job's nodes

Parameter: `ref_node_monitoring_uuids`
Type: list of unsigned numbers

Description: Reference to all nodes monitoring UUIDs

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: Jobscript 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 per node

Parameter: `requestedMemory`
Type: unsigned integer
Description: Requested memory per node

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

Parameter: `rundirectory`
Type: string
Description: Job work directory

Parameter: `stdinfile`
Type: string
Description: Standard input file

Parameter: `stdoutfile`
Type: string
Description: Standard output file

Parameter: `stderrfile`
Type: string
Description: Standard error file

5.2.226 `JobInfoStatistics`: `Entity`

parent: `Entity`

Parameter: `ref_wlm_cluster_uuid`
Type: UUID
Description: WlmCluster

Parameter: `ref_jobqueue_uuid`
Type: UUID
Description: Queue

Parameter: `user`
Type: string
Description: *none*

Parameter: `group`
Type: string
Description: *none*

Parameter: `account`
Type: string

Description: *none*

Parameter: `accountingInfo`
Type: free JSON object
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*

5.2.227 `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 `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

5.2.229 `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

5.2.230 `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)

5.2.231 `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

5.2.232 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.

5.2.233 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*

5.2.234 KeyValueSettings: Entity

parent: Entity

Parameter: keyValues
Type: list of strings
Description: List of key=value pairs

5.2.235 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: Additional variables for kubernetes apps or kubernetes nodes environment

Parameter: `excludeListSnippets`
Type: list of `ExcludeListSnippet`
Description: *none*

Parameter: `state`
Type: integer
Description: *none*

5.2.236 `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

5.2.237 `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

5.2.238 `KubeCluster: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name of the Kubernetes cluster

Parameter: `etcdCluster`
Type: reference to `EtcdCluster` or None
Description: The Etcd cluster instance

Parameter: `serviceNetwork`
Type: reference to `Network` or None
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` or None
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` or None
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: `version`
Type: string
Description: Kubernetes Cluster Version

Parameter: `trustedDomains`
Type: list of strings
Description: Trusted domains to be included in Kubernetes related certificates as Alt Subjects.

Parameter: `moduleFileTemplate`
Type: string
Description: Template for system module file

Parameter: `kubeadm_init_file`
Type: string
Description: Kubeadm init file YAML

Parameter: `kubeadm_init_cert_key`
Type: string
Description: Kubeadm CERT Key

Parameter: `kubeadm_ca_cert`
Type: string
Description: Kube CA Cert

Parameter: `kubeadm_ca_key`
Type: string
Description: Kube CA Key

Parameter: `users`
Type: list of `KubeUser`
Description: Kubernetes users

Parameter: `external`
Type: boolean
Description: External kubernetes cluster

Parameter: `externalIngressServer`

Type: string
Description: Kubernetes Ingress server address (format: https://host:port)

Parameter: `externalPort`
Type: unsigned integer
Description: External port, set to 0 to disable

Parameter: `capiTemplate`
Type: boolean
Description: CAPI template kubernetes cluster

Parameter: `capiNamespace`
Type: string
Description: Kubernetes CAPI namespace

Parameter: `kubeCluster`
Type: reference to `KubeCluster` or None
Description: The Kubernetes cluster instance managing this CAPI-deployed Kubernetes Cluster

Parameter: `options`
Type: free JSON object
Description: Options to configure flags for Kube components

5.2.239 `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

5.2.240 `KubeletRole: Role`

parent: `Role`

Parameter: `kubeCluster`
Type: reference to `KubeCluster`
Description: The Kubernetes cluster instance (pointer)

Parameter: `controlPlane`
Type: boolean
Description: Control plane node

Parameter: `worker`
Type: boolean
Description: Worker node

Parameter: `containerRuntimeService`
Type: string
Description: The container runtime systemd service

Parameter: `maxPods`
Type: unsigned integer
Description: Number of Pods that can run on this node

Parameter: `options`
Type: free JSON object
Description: Options to overrule flags for Kube components

5.2.241 `KubeNodeLoad: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.242 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 lables 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

5.2.243 `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

5.2.244 `KubernetesApiServerProxyRole`: `BaseNginxRole`

parent: `BaseNginxRole`

Parameter: `kubeClusters`
Type: list of references to `KubeCluster`
Description: The Kubernetes cluster instances (pointers)

5.2.245 `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

Parameter: `initialDefaultNamespace`
Type: string
Description: namespace to make default when creating kubeconfig

5.2.246 `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

5.2.247 `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

5.2.248 `LicenseInfo: Entity`

parent: `Entity`

Parameter: `ref_partition_uuid`
Type: UUID
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: `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: `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

Parameter: `information`
Type: free JSON object
Description: Information

5.2.249 `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*

5.2.250 `LiteMonitoringMeasurable`: `Entity`

parent: `Entity`

Parameter: `producer`
Type: UUID
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*

5.2.251 `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

Parameter: `services`
Type: list of `OSServiceConfig`
Description: Manage operating system services

5.2.252 `LSFBaseJob: Job`

parent: `Job`

5.2.253 `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 specifed 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.

5.2.254 `LSFBaseJobQueueStat: 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

5.2.255 `LSFCgroupsSettings`: `WlmCgroupsSettings`

parent: `WlmCgroupsSettings`

Parameter: `resourceEnforce`
Type: list of strings
Description: Controls resource enforcement through the Linux cgroup memory and cpuset subsytem 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)

5.2.256 `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: `IMEX`
Type: boolean
Description: Start IMEX daemon from prolog/epilog

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

5.2.257 `LSFJob: LSFBaseJob`
parent: `LSFBaseJob`

5.2.258 `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

5.2.259 `LSFJobQueueStat: LSFBaseJobQueueStat`
parent: `LSFBaseJobQueueStat`

5.2.260 `LSFRole: Role`
parent: `Role`

Parameter: `wlmCluster`
Type: reference to `LSFWlmCluster`
Description: WLM cluster link to this WLM role

5.2.261 `LSFServerRole: LSFRole`
parent: `LSFRole`

Parameter: `externalServer`
Type: boolean
Description: LSF server daemons are running on some external machine

5.2.262 `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)

5.2.263 `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)

5.2.264 `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

5.2.265 `MIGInformation: Entity`
parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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*

5.2.266 `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

5.2.267 `MonitoringActionRunData: Entity`

parent: `Entity`

Parameter: `target`
Type: UUID
Description: Target node

Parameter: `info`
Type: string
Description: Extra information

Parameter: `env`
Type: list of strings
Description: Environment

5.2.268 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

5.2.269 MonitoringCategoryListExecutionFilter: MonitoringExecutionFilter

parent: MonitoringExecutionFilter

Parameter: categories
Type: list of references to Category
Description: List of categories belonging to this group

5.2.270 MonitoringCategoryListExecutionMultiplexer: MonitoringExecutionMultiplexer

parent: MonitoringExecutionMultiplexer

Parameter: categories
Type: list of references to Category
Description: List of categories belonging to this group

5.2.271 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

5.2.272 `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

5.2.273 `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

5.2.274 `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: `access`
Type: enum
Description: User access control

Parameter: `associatedUser`
Type: string
Description: User associated with this measurable

5.2.275 `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

5.2.276 `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

5.2.277 MonitoringDataProducerAlertLevel: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.278 MonitoringDataProducerClusterTotal: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.279 MonitoringDataProducerCMDaemonState: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

Parameter: subsystems
Type: list of strings
Description: Subsystems

5.2.280 MonitoringDataProducerDeviceState: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.281 MonitoringDataProducerDPU: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: dpuSettings
Type: MonitoringDataProducerDPUSettings
Description: Submode containing DPU settings

5.2.282 MonitoringDataProducerDPUSettings: Entity

parent: Entity

Parameter: enable_pcie0
Type: boolean
Description: Enable pcie0 metrics

Parameter: enable_pcie1
Type: boolean
Description: Enable pcie0 metrics

Parameter: enable_ecc
Type: boolean
Description: Enable ecc metrics

Parameter: configured_events
Type: list of MonitoringDataProducerDPUSettingsEvent
Description: Configured of the event

5.2.283 MonitoringDataProducerDPUSettingsEvent: Entity

parent: Entity

Parameter: index
Type: unsigned integer
Description: Index

Parameter: counter

Type: unsigned integer
Description: Counter

5.2.284 MonitoringDataProducerDPUSettingsEventGic: MonitoringDataProducerDPUSettingsEvent

parent: MonitoringDataProducerDPUSettingsEvent

Parameter: event
Type: enum
Description: Event value from the event list that will be sampled

5.2.285 MonitoringDataProducerDPUSettingsEventL3CacheHalf: MonitoringDataProducerDPUSettingsEvent

parent: MonitoringDataProducerDPUSettingsEvent

Parameter: event
Type: enum
Description: Event value from the event list that will be sampled

5.2.286 MonitoringDataProducerDPUSettingsEventSmmu: MonitoringDataProducerDPUSettingsEvent

parent: MonitoringDataProducerDPUSettingsEvent

Parameter: event
Type: enum
Description: Event value from the event list that will be sampled

5.2.287 MonitoringDataProducerDPUSettingsEventTile: MonitoringDataProducerDPUSettingsEvent

parent: MonitoringDataProducerDPUSettingsEvent

Parameter: event
Type: enum
Description: Event value from the event list that will be sampled

5.2.288 MonitoringDataProducerDPUSettingsEventTilenet: MonitoringDataProducerDPUSettingsEvent

parent: MonitoringDataProducerDPUSettingsEvent

Parameter: event
Type: enum
Description: Event value from the event list that will be sampled

5.2.289 MonitoringDataProducerDPUSettingsEventTrio: MonitoringDataProducerDPUSettingsEvent

parent: MonitoringDataProducerDPUSettingsEvent

Parameter: event
Type: enum
Description: Event value from the event list that will be sampled

5.2.290 MonitoringDataProducerDPUSettingsEventTriogen: MonitoringDataProducerDPUSettingsEvent

parent: MonitoringDataProducerDPUSettingsEvent

Parameter: event
Type: enum
Description: Event value from the event list that will be sampled

5.2.291 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

5.2.292 MonitoringDataProducerFabricTotal: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.293 MonitoringDataProducerGPU: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: updateFreq
Type: float
Description: Update frequency of the internal cuda metric sampler

5.2.294 MonitoringDataProducerInternal: MonitoringDataProducer

parent: MonitoringDataProducer

5.2.295 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

5.2.296 `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: Minumal 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

5.2.297 `MonitoringDataProducerJobQueue`: `MonitoringDataProducer`

parent: `MonitoringDataProducer`

Parameter: `wlmClusters`
Type: list of references to `WlmCluster`

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

5.2.298 MonitoringDataProducerLua: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: code
Type: string
Description: Lua code

Parameter: timeout
Type: unsigned integer
Description: Lua timeout

5.2.299 MonitoringDataProducerMonitoringSystem: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.300 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

5.2.301 MonitoringDataProducerPowerDistributionUnit: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.302 MonitoringDataProducerProcMemInfo: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.303 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

5.2.304 `MonitoringDataProducerProcNetDev`: `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

Parameter: `excludeIf`
Type: list of strings
Description: Exclude interfaces

Parameter: `includeAll`
Type: boolean
Description: Include all metrics

5.2.305 `MonitoringDataProducerProcNetSnmp`: `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

5.2.306 `MonitoringDataProducerProcPidStat`: `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

Parameter: `pid`
Type: unsigned integer
Description: PID to sample

Parameter: `process`
Type: string
Description: Process

5.2.307 `MonitoringDataProducerProcStat`: `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

Parameter: `individualCPU`
Type: boolean
Description: Measure individual CPUs

5.2.308 MonitoringDataProducerProcVMStat: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.309 MonitoringDataProducerPrometheus: MonitoringDataProducer

parent: MonitoringDataProducer

Parameter: urls
Type: list of strings
Description: One or mure 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

5.2.310 `MonitoringDataProducerRackSensor`: `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

5.2.311 `MonitoringDataProducerRedFishSubscription`: `MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

5.2.312 `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

5.2.313 `MonitoringDataProducerSingleLineHealthCheckScript`: `MonitoringDataProducerSingleLineScript`

parent: `MonitoringDataProducerSingleLineScript`

5.2.314 `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

5.2.315 `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

5.2.316 `MonitoringDataProducerSwitch: MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

5.2.317 `MonitoringDataProducerSysBlockStat: MonitoringDataProducerInternal`

parent: `MonitoringDataProducerInternal`

Parameter: `excludeVirtualDisks`
Type: boolean
Description: Exclude virtual disks

Parameter: `excludeDisks`
Type: list of strings
Description: Exclude disks

5.2.318 MonitoringDataProducerSysInfo: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

5.2.319 MonitoringDataProducerTest: MonitoringDataProducerInternal

parent: MonitoringDataProducerInternal

Parameter: instances
Type: unsigned integer
Description: Number of instances per test

5.2.320 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

5.2.321 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

5.2.322 MonitoringDataProducerWlmSlot: MonitoringDataProducer

parent: MonitoringDataProducer

5.2.323 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

5.2.324 `MonitoringDrainAction`: `MonitoringAction`

parent: `MonitoringAction`

5.2.325 `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

5.2.326 `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

5.2.327 `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

5.2.328 `MonitoringExecutionFilter`: `Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name

Parameter: `filterOperation`
Type: enum

Description: The filter operation to be performed

5.2.329 MonitoringExecutionMultiplexer: Entity

parent: Entity

Parameter: name
Type: string
Description: Name

Parameter: filterOperation
Type: enum
Description: The filter operation to be performed

5.2.330 MonitoringExpression: Entity

parent: Entity

Parameter: name
Type: string
Description: Name

5.2.331 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

5.2.332 MonitoringHealthOverview: Entity

parent: Entity

Parameter: ref_entity_uuid
Type: UUID
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

5.2.333 `MonitoringImageUpdateAction: MonitoringAction`

parent: `MonitoringAction`

5.2.334 `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

5.2.335 `MonitoringLuaExecutionFilter`: `MonitoringExecutionFilter`

parent: `MonitoringExecutionFilter`

Parameter: `code`
Type: string
Description: Lua code

Parameter: `notes`
Type: string
Description: Notes

5.2.336 `MonitoringLuaExecutionMultiplexer`: `MonitoringExecutionMultiplexer`

parent: `MonitoringExecutionMultiplexer`

Parameter: `code`
Type: string
Description: Lua code

Parameter: `notes`
Type: string
Description: Notes

5.2.337 `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

5.2.338 `MonitoringMeasurableEnum`: `MonitoringMeasurable`
parent: `MonitoringMeasurable`

5.2.339 `MonitoringMeasurableHealthCheck`: `MonitoringMeasurable`
parent: `MonitoringMeasurable`

5.2.340 `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

5.2.341 `MonitoringNodeListExecutionFilter`: `MonitoringExecutionFilter`
parent: `MonitoringExecutionFilter`

Parameter: `nodes`

Type: list of references to `Node`
Description: List of nodes belonging to this group

5.2.342 `MonitoringNodeListExecutionMultiplexer`: `MonitoringExecutionMultiplexer`

parent: `MonitoringExecutionMultiplexer`

Parameter: `nodes`
Type: list of references to `Node`
Description: List of nodes belonging to this group

5.2.343 `MonitoringOffloadBackupInformation`: `Entity`

parent: `Entity`

Parameter: `ref_monitoring_node_uuid`
Type: UUID
Description: Node

Parameter: `ref_backup_node_uuids`
Type: list of unsigned numbers
Description: Node

5.2.344 `MonitoringOffloadInformation`: `Entity`

parent: `Entity`

Parameter: `ref_monitoring_node_uuid`
Type: UUID
Description: Node

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `ref_best_monitoring_node_uuid`
Type: UUID
Description: Node

Parameter: `ref_viable_monitoring_node_uuids`
Type: list of unsigned numbers
Description: Node

5.2.345 `MonitoringOverlayListExecutionFilter`: `MonitoringExecutionFilter`

parent: `MonitoringExecutionFilter`

Parameter: `overlays`
Type: list of references to `ConfigurationOverlay`
Description: List of overlays belonging to this group

5.2.346 MonitoringOverlayListExecutionMultiplexer: MonitoringExecutionMultiplexer

parent: MonitoringExecutionMultiplexer

Parameter: overlays
Type: list of references to ConfigurationOverlay
Description: List of overlays belonging to this group

5.2.347 MonitoringPickupInterval: Entity

parent: Entity

Parameter: ref_node_uuid
Type: UUID
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

5.2.348 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

5.2.349 `MonitoringPowerAction`: `MonitoringAction`
parent: `MonitoringAction`

5.2.350 `MonitoringPowerOffAction`: `MonitoringPowerAction`
parent: `MonitoringPowerAction`

5.2.351 `MonitoringPowerOnAction`: `MonitoringPowerAction`
parent: `MonitoringPowerAction`

5.2.352 `MonitoringPowerResetAction`: `MonitoringPowerAction`
parent: `MonitoringPowerAction`

5.2.353 `MonitoringRebootAction`: `MonitoringAction`
parent: `MonitoringAction`

Parameter: `runPreHaltOperations`
Type: boolean
Description: Run pre-halt operations

Parameter: `preHaltOperationTimeout`
Type: unsigned integer
Description: Run pre-halt operation timeout

5.2.354 `MonitoringResourceExecutionFilter`: `MonitoringExecutionFilter`
parent: `MonitoringExecutionFilter`

Parameter: `resources`
Type: list of strings
Description: Resources

Parameter: `op`
Type: enum
Description: Operator

5.2.355 `MonitoringResourceExecutionMultiplexer`: `MonitoringExecutionMultiplexer`
parent: `MonitoringExecutionMultiplexer`

Parameter: `resources`
Type: list of strings
Description: Resources

Parameter: `op`
Type: enum

Description: Operator

5.2.356 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

5.2.357 `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

5.2.358 `MonitoringServiceAction`: `MonitoringAction`

parent: `MonitoringAction`

Parameter: `service`
Type: string
Description: Service

Parameter: `arguments`
Type: list of strings
Description: Arguments

5.2.359 MonitoringServiceRestartAction: MonitoringServiceAction

parent: MonitoringServiceAction

5.2.360 MonitoringServiceStartAction: MonitoringServiceAction

parent: MonitoringServiceAction

5.2.361 MonitoringServiceStopAction: MonitoringServiceAction

parent: MonitoringServiceAction

5.2.362 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

5.2.363 MonitoringShutdownAction: MonitoringAction

parent: MonitoringAction

Parameter: runPreHaltOperations
Type: boolean
Description: Run pre-halt operations

Parameter: preHaltOperationTimeout
Type: unsigned integer

Description: Run pre-halt operation timeout

5.2.364 `MonitoringStorageSubSystemInfo: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.365 `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

5.2.366 `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

5.2.367 `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

Parameter: `dpuNode`
Type: boolean
Description: DPU node

5.2.368 `MonitoringTypeExecutionMultiplexer`: `MonitoringExecutionMultiplexer`

parent: `MonitoringExecutionMultiplexer`

Parameter: `types`
Type: list of strings
Description: Types

5.2.369 `MonitoringUndrainAction`: `MonitoringAction`

parent: `MonitoringAction`

5.2.370 `MsgQueue`: `Entity`

parent: `Entity`

Parameter: `ref_node_uuid`

Type: UUID
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

5.2.371 `NetQSettings: Entity`

parent: `Entity`

Parameter: `server`
Type: string
Description: NetQ server

Parameter: `username`
Type: string
Description: Username to use for NetQ API calls

Parameter: `password`
Type: string
Description: Password to use for NetQ API calls

Parameter: `port`
Type: unsigned integer
Description: Port

Parameter: `verifySSL`
Type: boolean
Description: Verify SSL host certificate

5.2.372 `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: `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 accros 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: `allowAutosign`
Type: enum
Description: Specify if certificate request from node installers can be signed automatically

Parameter: `generateDNSZone`
Type: enum
Description: Specify which DNS zones should be written

Parameter: `excludeFromSearchDomain`
Type: boolean
Description: Exlude 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

5.2.373 `NetworkAliasInterface`: `NetworkInterface`

parent: `NetworkInterface`

5.2.374 `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

5.2.375 `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.

5.2.376 `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.

5.2.377 `NetworkConnection: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.378 `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

Parameter: `switchPorts`
Type: list of `SwitchPort`
Description: Switch ports

5.2.379 `NetworkNetMapInterface`: `NetworkInterface`

parent: `NetworkInterface`

5.2.380 `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.

5.2.381 `NetworkTunnelInterface: NetworkInterface`
parent: `NetworkInterface`

5.2.382 `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.

5.2.383 `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: `type`
Type: enum
Description: Type of device

Parameter: `firstSeen`
Type: unsigned integer
Description: Uptime when the new node was first seen

Parameter: `lastSeen`
Type: unsigned integer
Description: Uptime when the new node was last seen

Parameter: `count`
Type: unsigned integer
Description: Number of times the node was reported as new

Parameter: `stop`
Type: boolean
Description: Force the request to stop

Parameter: `info`
Type: string
Description: Free text information string passed by node-installer

Parameter: `appeared`
Type: timestamp
Description: Timestamp when the new node first appeared

5.2.384 `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

5.2.385 `NginxRole: BaseNginxRole`

parent: `BaseNginxRole`

Parameter: `nginxReverseProxy`
Type: list of `NginxReverseProxy`
Description: Nginx Reverse Proxy Configuration

5.2.386 `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: `NetworkInterface`
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: free JSON object
Description: BIOS setup

Parameter: `timeZoneSettings`
Type: `TimeZoneSettings` or None
Description: Time zone

5.2.387 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

5.2.388 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

5.2.389 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

5.2.390 `NodeHierarchyRuleCategorySelection`: `NodeHierarchyRuleSelection`

parent: `NodeHierarchyRuleSelection`

Parameter: `categories`
Type: list of references to `Category`

Description: List of categories

5.2.391 NodeHierarchyRuleCloudRegionSelection: NodeHierarchyRuleSelection

parent: NodeHierarchyRuleSelection

Parameter: regions
Type: list of references to CloudRegion
Description: List of regions

5.2.392 NodeHierarchyRuleDeviceSelection: NodeHierarchyRuleSelection

parent: NodeHierarchyRuleSelection

Parameter: devices
Type: list of references to Device
Description: List of devices

5.2.393 NodeHierarchyRuleEdgeSiteSelection: NodeHierarchyRuleSelection

parent: NodeHierarchyRuleSelection

Parameter: edgesites
Type: list of references to EdgeSite
Description: List of edgesites

5.2.394 NodeHierarchyRuleNodeGroupSelection: NodeHierarchyRuleSelection

parent: NodeHierarchyRuleSelection

Parameter: nodegroups
Type: list of references to NodeGroup
Description: List of nodegroups

5.2.395 NodeHierarchyRuleNodeSelection: NodeHierarchyRuleSelection

parent: NodeHierarchyRuleSelection

Parameter: nodes
Type: list of references to Node
Description: List of nodes

5.2.396 NodeHierarchyRuleRackSelection: NodeHierarchyRuleSelection

parent: NodeHierarchyRuleSelection

Parameter: racks
Type: list of references to Rack
Description: List of racks

5.2.397 NodeHierarchyRuleRoleSelection: NodeHierarchyRuleSelection

parent: NodeHierarchyRuleSelection

Parameter: edgeDirector
Type: boolean
Description: Edge director

Parameter: `cloudDirector`
Type: boolean
Description: Cloud 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

5.2.398 `NodeHierarchyRuleSelection: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name

Parameter: `operation`
Type: enum
Description: Operation

5.2.399 `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: `dpuNode`
Type: boolean
Description: Lite node

Parameter: `networkSwitch`
Type: boolean
Description: Network 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

5.2.400 `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

5.2.401 `OCIDisk: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name of the disk

Parameter: `size`
Type: unsigned integer
Description: Size of the drive

Parameter: `kmsKeyId`
Type: string
Description: The OCID of the Vault service key to assign as the master encryption key for the volume

Parameter: `vpusPerGb`
Type: unsigned integer
Description: The number of volume performance units (VPUs) that will be applied to this volume per GB, representing the Block Volume service's elastic performance options

Parameter: `maxVPUsPerGB`
Type: unsigned integer

Description: This will be the maximum VPUs/GB performance level that the volume will be auto-tuned temporarily based on performance monitoring. This parameter has an effect only if performance based autotune is enabled

Parameter: `enablePerformanceBasedAutotune`
Type: boolean
Description: If a volume is being throttled at the current setting for a certain period of time, auto-tune will gradually increase the volume's performance limited up to Maximum VPUs/GB. After the volume has been idle at the current setting for a certain period of time, auto-tune will gradually decrease the volume's performance limited down to Default/Minimum VPUs/GB

Parameter: `enableDetachedAutotune`
Type: boolean
Description: Volume's performace will be tuned to the lower cost settings once detached

5.2.402 `OCIInstancePool: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: User-defined name of the instance pool

Parameter: `provider`
Type: reference to `CloudProvider`
Description: Cloud provider

Parameter: `region`
Type: reference to `OCIRegion`
Description: Region for instance

Parameter: `isClusterNetwork`
Type: boolean
Description: Is instance pool a part of cluster network

Parameter: `instancePoolId`
Type: string
Description: Instance pool OCID (generated automatically by default)

Parameter: `clusterNetworkId`
Type: string
Description: Cluster network OCID (if applicable, generated automatically by default)

5.2.403 `OCIPlatformConfig: Entity`

parent: `Entity`

Parameter: `platformType`
Type: string
Description: The type of platform being configured.

Parameter: `isSecureBootEnabled`
Type: enum
Description: Whether Secure Boot is enabled on the instance.

Parameter: `isTrustedPlatformModuleEnabled`
Type: enum
Description: Whether the Trusted Platform Module (TPM) is enabled on the instance.

Parameter: `isMeasuredBootEnabled`
Type: enum
Description: Whether the Measured Boot feature is enabled on the instance.

Parameter: `isMemoryEncryptionEnabled`
Type: enum
Description: Whether the instance is a confidential instance.

Parameter: `numaNodesPerSocket`
Type: string
Description: The number of NUMA nodes per socket (NPS).

Parameter: `isSymmetricMultiThreadingEnabled`
Type: enum
Description: Whether symmetric multithreading is enabled on the instance. Symmetric multithreading is also called simultaneous multithreading (SMT) or Intel Hyper-Threading. Intel and AMD processors have two hardware execution threads per core (OCPU). SMT permits multiple independent threads of execution, to better use the resources and increase the efficiency of the CPU. When multithreading is disabled, only one thread is permitted to run on each core, which can provide higher or more predictable performance for some workloads.

Parameter: `isAccessControlServiceEnabled`
Type: enum
Description: Whether the Access Control Service is enabled on the instance. When enabled, the platform can enforce PCIe device isolation, required for VFIO device pass-through.

Parameter: `areVirtualInstructionsEnabled`
Type: enum
Description: Whether virtualization instructions are available. For example, Secure Virtual Machine for AMD shapes or VT-x for Intel shapes.

Parameter: `isInputOutputMemoryManagementUnitEnabled`
Type: enum
Description: Whether the input-output memory management unit is enabled.

Parameter: `percentageOfCoresEnabled`
Type: unsigned integer

Description: The percentage of cores enabled. Value must be a multiple of 25%. If the requested percentage results in a fractional number of cores, the system rounds up the number of cores across processors and provisions an instance with a whole number of cores. If the applications that you run on the instance use a core-based licensing model and need fewer cores than the full size of the shape, you can disable cores to reduce your licensing costs. The instance itself is billed for the full shape, regardless of whether all cores are enabled.

5.2.404 `OCIProvider: CloudProvider`

parent: `CloudProvider`

Parameter: `defaultNodeInstallerImageId`
Type: string
Description: Default node-installer image, can be overridden in cloudsettings

Parameter: `defaultCompartmentId`
Type: string
Description: Default compartment ID used, others are listed in https://cloud.oracle.com/identity/compartments.

Parameter: `defaultRegion`
Type: reference to `OCIRegion` or None
Description: Default region to start virtual machine in.

Parameter: `defaultShape`
Type: reference to `OCIShape` or None
Description: Default cloud node VM shape.

Parameter: `APIRegionName`
Type: string
Description: OCI region name to be used for listing available regions

Parameter: `regions`
Type: list of references to `OCIRegion`
Description: *none*

Parameter: `securityGroupNode`
Type: string
Description: Security group ID of the cloud nodes

Parameter: `authUser`
Type: string
Description: User ocid. Format is ocid1.user.oc1..<unique ID>, can be found in Profile->User Settings

Parameter: `authKeyContent`
Type: string
Description: API private key file's content (PEM format) to connect to OCI

Parameter: `authFingerprint`
Type: string

Description: Fingerprint of API Keys. Format is 12:34:56:78:90:ab:cd:ef:12:34:56:78:90:ab:cd:ef, can be found in Identity->Users->User Details->API Keys

Parameter: `authTenancy`
Type: string
Description: Usually one company will have a single tenancy. Format is ocid1.tenancy.oc1..<unique ID>, can be found in https://cloud.oracle.com/tenancy

Parameter: `imagesCompartmentId`
Type: string
Description: Compartment OCID to search for custom images

Parameter: `imagesManifestBaseURL`
Type: string
Description: Base URL to download images manifests

5.2.405 `OCIRegion: CloudRegion`
parent: `CloudRegion`

5.2.406 `OCISettings: CloudSettings`
parent: `CloudSettings`

Parameter: `compartmentId`
Type: string
Description: Compartment ID

Parameter: `availabilityDomain`
Type: string
Description: Availability domain

Parameter: `instanceId`
Type: string
Description: Instance ID in OCI

Parameter: `imageId`
Type: string
Description: ID of the image used to create instance ('latest': use latest AMI, '': inherit AMI from cloud provider)

Parameter: `ocpus`
Type: unsigned integer
Description: Oracle CPUs. If set to 0 then the default value from the shape will be used

Parameter: `memory`
Type: unsigned integer
Description: Size of the node's main memory. If set to 0 then the default value from the shape will be used

Parameter: `disks`
Type: list of `OCIDisk`
Description: Definitions of storage devices of the VM

Parameter: `shape`
Type: reference to `OCIShape` or None
Description: Instance shape

Parameter: `region`
Type: reference to `OCIRegion` or None
Description: Region for instance

Parameter: `instancePool`
Type: reference to `OCIInstancePool` or None
Description: Instance pool to place the VM in

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: `capacityType`
Type: enum
Description: Instance capacity type

Parameter: `capacityReservationId`
Type: string
Description: Capacity Reservation ID

Parameter: `platformConfig`
Type: `OCIPlatformConfig`
Description: The platform configuration requested for the instance.

5.2.407 `OCIShape: CloudType`

parent: `CloudType`

Parameter: `maxVnics`
Type: unsigned integer
Description: The maximum number of VNIC attachments available for this shape.

Parameter: `networkPorts`
Type: unsigned integer
Description: The number of physical network interface card (NIC) ports available for this shape.

Parameter: `rdmaPorts`
Type: unsigned integer

Description: The number of networking ports available for the remote direct memory access (RDMA) network between nodes in a high performance computing (HPC) cluster network. If the shape does not support cluster networks, this value is 0.

Parameter: `isFlexible`
Type: boolean
Description: Whether the shape supports creating flexible instances. A flexible shape is a shape that lets you customize the number of OCPUs and the amount of memory when launching or resizing your instance.

Parameter: `cpusMin`
Type: unsigned integer
Description: The maximum number of OCPUs.

Parameter: `cpusMax`
Type: unsigned integer
Description: The maximum number of OCPUs.

Parameter: `memoryMin`
Type: unsigned integer
Description: The minimum amount of memory.

Parameter: `memoryMax`
Type: unsigned integer
Description: The maximum amount of memory.

Parameter: `memoryMinPerCpu`
Type: unsigned integer
Description: The minimum amount of memory per OCPU available for this shape.

Parameter: `memoryMaxPerCpu`
Type: unsigned integer
Description: The maximum amount of memory per OCPU available for this shape.

5.2.408 `OpenShiftClientRole`: `OpenShiftRole`

parent: `OpenShiftRole`

5.2.409 `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

5.2.410 `OpenShiftRole: Role`
parent: `Role`

Parameter: `unmanagedNodeConfiguration`
Type: reference to `UnmanagedNodeConfiguration`
Description: The unmanaged nodeconfiguration this role is linked with

5.2.411 `OpenShiftWorkerRole: OpenShiftRole`
parent: `OpenShiftRole`

Parameter: `containerStoragePath`
Type: string
Description: Container storage path

5.2.412 `OpenStackIntermediateStorage: CMJobIntermediateStorage`
parent: `CMJobIntermediateStorage`

Parameter: `container`
Type: string
Description: Container name to place data into

5.2.413 `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

5.2.414 `OSCloudEphemeralDisk: OSCloudDisk`

parent: `OSCloudDisk`

Parameter: `format`
Type: string
Description: Filesystem to format the disk

5.2.415 `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

5.2.416 OSCloudFlavor: CloudType

parent: CloudType

Parameter: id
Type: string
Description: The ID of the flavor

5.2.417 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

5.2.418 `OSCloudRegion: CloudRegion`

parent: `CloudRegion`

Parameter: `id`
Type: string
Description: The ID of the region

5.2.419 `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` or None
Description: The region of the cloud the VM is located in.

Parameter: `flavor`
Type: reference to `OSCloudFlavor` or None
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.

5.2.420 `OSCloudSwapDisk: OSCloudDisk`
parent: `OSCloudDisk`

5.2.421 `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

5.2.422 `OSService: Entity`
parent: `Entity`

Parameter: `ref_osservice_config_uuid`

Type: UUID
Description: OSServiceConfig

Parameter: `name`
Type: string
Description: *none*

Parameter: `status`
Type: enum
Description: *none*

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `isRealService`
Type: boolean
Description: *none*

Parameter: `sicknessMessage`
Type: string
Description: *none*

5.2.423 `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: `ref_role_uuid`
Type: UUID
Description: *none*

Parameter: `ref_extra_uuid`
Type: UUID
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

5.2.424 Package: Entity

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `type`
Type: enum

Description: Type of package manager

Parameter: `path`
Type: string
Description: Path

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

5.2.425 `Partition: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name

Parameter: `clusterName`
Type: string

Description: Cluster name

Parameter: `clusterReferenceArchitecture`
Type: string
Description: Cluster reference architecture

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 signed numbers
Description: Name servers

Parameter: `nameServersFromDhcp`
Type: list of signed numbers
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: `BurnConfig`
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: `dpuSettings`
Type: `DPUSettings` or None
Description: Configure the DPU settings

Parameter: `ztpSettings`
Type: `ZTPSettings` or None
Description: Configure the ZTP settings

Parameter: `ztpNewSwitchSettings`
Type: `ZTPNewSwitchSettings` or None
Description: Configure the ZTP settings

Parameter: `seLinuxSettings`
Type: `SELinuxSettings` or None
Description: Configure the SELinux settings

Parameter: `accessSettings`
Type: `AccessSettings` or None
Description: Configure the cluster wide Access settings

Parameter: `netQSettings`
Type: `NetQSettings` or None
Description: Configure NetQ 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.

5.2.426 PBSJob: Job

parent: Job

5.2.427 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: Default 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

5.2.428 `PBSJobQueueStat: JobQueueStat`

parent: `JobQueueStat`

Parameter: `held`
Type: unsigned integer
Description: Held jobs

Parameter: `waiting`
Type: unsigned integer
Description: Waiting jobs

5.2.429 `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 moms

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)

5.2.430 `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

5.2.431 `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: `IMEX`
Type: boolean
Description: Start IMEX daemon from prolog/epilog

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

5.2.432 `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)

5.2.433 `PbsProJob: PBSJob`
parent: `PBSJob`

5.2.434 `PbsProJobQueue: PBSJobQueue`
parent: `PBSJobQueue`

5.2.435 `PbsProJobQueueStat: PBSJobQueueStat`
parent: `PBSJobQueueStat`

5.2.436 `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

5.2.437 `PbsProRole: Role`

parent: `Role`

Parameter: `wlmCluster`
Type: reference to `PbsProWlmCluster`
Description: WLM cluster link to this WLM role

5.2.438 `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

5.2.439 `PbsProSubmitRole: WlmSubmitRole`

parent: `WlmSubmitRole`

Parameter: `pbsProWlmClusters`
Type: list of references to `PbsProWlmCluster`
Description: List of PbsPro clusters which the role belongs to

5.2.440 `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)

5.2.441 `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

5.2.442 PhysicalNode: ComputeNode

parent: ComputeNode

5.2.443 PingResult: Entity

parent: Entity

Parameter: source
Type: UUID
Description: Source

Parameter: destination
Type: UUID
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

5.2.444 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

5.2.445 `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*

5.2.446 `PingStatisticsPairInformation: Entity`

parent: `Entity`

Parameter: `source`
Type: UUID
Description: *none*

Parameter: `destination`
Type: UUID
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*

5.2.447 `PingStatisticsSourceInformation: Entity`

parent: `Entity`

Parameter: `source`
Type: UUID
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*

5.2.448 `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*

5.2.449 `PowerOperation: Entity`

parent: `Entity`

Parameter: `devices`
Type: list of unsigned numbers
Description: Devices

Parameter: `pdus`
Type: list of unsigned numbers
Description: A list of (PDU, port) pairs

Parameter: `pdu_ports`
Type: list of unsigned numbers
Description: A list of (PDU, port) pairs

Parameter: `session_uuid`
Type: UUID
Description: Session

Parameter: `force`
Type: boolean
Description: Set to true to also do power operation on closed devices

Parameter: `delay`
Type: unsigned integer
Description: Delay between sequencial 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

5.2.450 `PowerOperationHistory: Entity`

parent: `Entity`

Parameter: `ref_device_uuid`
Type: UUID
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

5.2.451 `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

5.2.452 `PowerStatus: Entity`

parent: `Entity`

Parameter: `device`
Type: UUID
Description: Device

Parameter: `host`
Type: UUID
Description: *none*

Parameter: `powerDistributionUnit`
Type: UUID
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*

5.2.453 `PreJobOutput: Entity`

parent: `Entity`

Parameter: `measurable`
Type: UUID
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*

5.2.454 `PreJobResult: Entity`

parent: `Entity`

Parameter: `hostname`
Type: string

Description: *none*

Parameter: `node_uuid`
Type: UUID
Description: Node

Parameter: `output`
Type: list of `PreJobOutput`
Description: *none*

5.2.455 `Process: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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: `nbfiledescs`
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

5.2.456 `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

5.2.457 `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.

5.2.458 `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: UUID
Description: *none*

Parameter: `logger`
Type: enum
Description: *none*

5.2.459 `ProgramRunnerKill: Entity`

parent: `Entity`

Parameter: `node`

Type: UUID
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

5.2.460 `ProgramRunnerOutput: Entity`

parent: `Entity`

Parameter: `node`
Type: UUID
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*

5.2.461 `ProgramRunnerStatus: Entity`

parent: `Entity`

Parameter: `startTime`
Type: timestamp
Description: *none*

Parameter: `runtime`
Type: unsigned integer
Description: *none*

Parameter: `session_uuid`
Type: UUID
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*

5.2.462 `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

5.2.463 `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: `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 associtated 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

5.2.464 `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

5.2.465 `ProvisioningNodeStatus: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Provisioning node

Parameter: `ref_image_uuids`
Type: list of unsigned numbers

Description: Software images

Parameter: `ref_category_uuids`
Type: list of unsigned numbers
Description: Categories

Parameter: `ref_nodegroup_uuids`
Type: list of unsigned numbers
Description: Node groups

Parameter: `ref_rack_uuids`
Type: list of unsigned numbers
Description: Racks

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: `drained`
Type: boolean
Description: Drained and not available for future request

Parameter: `upToDate`
Type: list of booleans
Description: *none*

5.2.466 `ProvisioningProcessorJob`: `Entity`

parent: `Entity`

Parameter: `job_uuid`
Type: UUID
Description: Internal provisioning system job UUID.

Parameter: `request_uuid`
Type: UUID
Description: Provisioning request UUID.

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

5.2.467 `ProvisioningRequestStatus: Entity`

parent: `Entity`

Parameter: `request_uuids`
Type: list of unsigned numbers
Description: Provisioning request UUIDs.

Parameter: `sourceNode`
Type: UUID
Description: Source node handling the provisioning request.

Parameter: `sourcePath`
Type: string
Description: Path on the source node.

Parameter: `destinationNode`
Type: UUID
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.

5.2.468 `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.

5.2.469 `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

5.2.470 `ProvisioningStatus: Entity`

parent: `Entity`

Parameter: `provisioningRequestStatusList`

Type: list of `ProvisioningRequestStatus`

Description: *none*

Parameter: `provisioningNodeStatusList`

Type: list of `ProvisioningNodeStatus`

Description: *none*

5.2.471 `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

5.2.472 `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

5.2.473 `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

5.2.474 `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

5.2.475 `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

5.2.476 `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

5.2.477 `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.

5.2.478 `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

5.2.479 `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

5.2.480 `ResourcePoolStatus: Entity`

parent: `Entity`

Parameter: `nodes`
Type: list of unsigned numbers
Description: Nodes

Parameter: `nodeStatus`
Type: list of unsigned numbers
Description: Node status

Parameter: `resources`
Type: list of unsigned numbers
Description: Resources

Parameter: `resourceStatus`
Type: list of unsigned numbers
Description: Resource status

Parameter: `resourceMessages`
Type: list of strings
Description: Resource message

5.2.481 `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.

5.2.482 `Route: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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*

5.2.483 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

5.2.484 `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

5.2.485 `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

5.2.486 `ScaleGenericEngine: ScaleEngine`
parent: `ScaleEngine`

5.2.487 `ScaleGenericTracker: ScaleTracker`
parent: `ScaleTracker`

Parameter: `handler`
Type: string
Description: Full path to python module that produces workload entities for cm-scale

5.2.488 `ScaleHpcEngine: ScaleEngine`
parent: `ScaleEngine`

Parameter: `wlmCluster`
Type: reference to `WlmCluster`
Description: WLM cluster that will be used by cm-scale

5.2.489 `ScaleHpcQueueTracker: ScaleTracker`
parent: `ScaleTracker`

Parameter: `queue`
Type: string
Description: Tracking job queue

5.2.490 `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

5.2.491 `ScaleKubeNamespaceTracker: ScaleTracker`
parent: `ScaleTracker`

Parameter: `controllerNamespace`

Type: string
Description: Tracking Kubernetes namespace name

Parameter: `object`
Type: enum
Description: Type of Kubernetes objects to track

5.2.492 `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

5.2.493 `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

5.2.494 `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

5.2.495 `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

5.2.496 `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` or None
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

5.2.497 `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

5.2.498 `Semaphore: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.499 `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

5.2.500 `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: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `remoteAddress`
Type: IP
Description: *none*

Parameter: `username`
Type: string
Description: *none*

Parameter: `group`
Type: string
Description: *none*

5.2.501 `SharedMemory: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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: `nattch`
Type: integer
Description: Number of attaches

5.2.502 `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)

5.2.503 `SlurmCgroupsSettings`: `WlmCgroupsSettings`

parent: `WlmCgroupsSettings`

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. 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.

Parameter: `allowedSwapSpace`

Type: float

Description: Constrain the job cgroup swap space to this percentage of the allocated memory

Parameter: `maxRAM`

Type: float

Description: Set an upper bound of total RAM on the RAM constraint for a job

Parameter: `maxSwap`
Type: float
Description: Set an upper bound (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 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

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 on the memory limits defined by AllowedKmemSpace

Parameter: `maxKmem`
Type: float
Description: Set an upper bound 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)

5.2.504 `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 - The value will be truncated to the MiB

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 (nvml) or AMD (rsmi) or Intel (oneapi) GPUs automatically (per node). GPU configuration is part of Slurm GRES.

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

Parameter: `hardwareAutoDetection`
Type: boolean
Description: The actual hardware configuration probed by slurmd -C

Parameter: `memoryAutoDetectionSlack`
Type: float

Description: Autodetected memory will be reduced by this percentage when put in slurm.conf

Parameter: `IMEX`
Type: boolean
Description: Start IMEX daemon from prolog/epilog

5.2.505 `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

Parameter: `Flags`
Type: list of strings
Description: Optional flags that can be specified to change configured behavior of the GRES

Parameter: `Links`
Type: list of unsigned numbers
Description: A list of numbers identifying the number of connections between this device and other devices to allow coscheduling of better connected devices

Parameter: `MultipleFiles`
Type: list of strings
Description: A list of device file paths (in the range format) associated with the GRES

5.2.506 `SlurmJob: Job`

parent: `Job`

5.2.507 `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: `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.

5.2.508 `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.

5.2.509 `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

5.2.510 `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.

5.2.511 `SlurmRole: Role`
parent: `Role`

Parameter: `wlmCluster`
Type: reference to `SlurmWlmCluster`
Description: WLM cluster link to this WLM role

5.2.512 `SlurmServerRole: SlurmRole`
parent: `SlurmRole`

Parameter: `externalServer`
Type: boolean
Description: Slurm server daemons are running on some external machine

5.2.513 `SlurmSubmitRole: WlmSubmitRole`
parent: `WlmSubmitRole`

Parameter: `slurmJobQueueAcccessList`
Type: list of `SlurmJobQueueAccessList`
Description: List of slurm clusters and their associated queues that can be submitted to

5.2.514 `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: `taskProlog`

Type: string

Description: Fully qualified pathname of a script to execute prior to launching job step (invoked by slurmstepd).

Parameter: `taskEpilog`

Type: string

Description: Fully qualified pathname of a script to execute after completion of job step (invoked by slurmstepd).

Parameter: `srunProlog`

Type: string

Description: Fully qualified pathname of a script to execute prior to launching job step (invoked by srun).

Parameter: `srunEpilog`
Type: string
Description: Fully qualified pathname of a script to execute after completion of job step (invoked by srun).

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: `prologEpilogTimeout`
Type: unsigned integer
Description: The interval in seconds Slurm waits for Prolog and Epilog before terminating them (value 0 removes the parameter from slurm.conf)

Parameter: `batchStartTimeout`
Type: unsigned integer
Description: The maximum time (in seconds) that a batch job is permitted for launching before being considered missing and releasing the allocation (value 0 removes the parameter from slurm.conf)

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) or Intel (oneapi) GPUs automatically (global option). GPU configuration is part of Slurm GRES.

Parameter: `configureMigs`
Type: boolean
Description: Detect and configure MIG profiles as GPU types in Slurm

Parameter: `slurmdParameters`
Type: list of strings
Description: Parameters specific to the Slurmd

Parameter: `scheduler`
Type: string
Description: Scheduler to use in combination with slurm

Parameter: `schedulerParameters`
Type: list of strings
Description: Parameters specific to the scheduler. The interpretation of them varies by SchedulerType

Parameter: `slurmctldParameters`
Type: list of strings
Description: Parameters specific to the Slurmctld

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

5.2.515 `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

5.2.516 `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

5.2.517 `SoftwareImage: Entity`

parent: `Entity`

Parameter: `name`
Type: string
Description: Name

Parameter: `path`
Type: string
Description: Base directory of the image

Parameter: `originalImage`
Type: UUID
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: `revisionID`
Type: integer
Description: *none*

Parameter: `parentSoftwareImage`
Type: reference to `SoftwareImage` or None
Description: *none*

Parameter: `revisionHistory`
Type: list of `SoftwareImageRevisionInfo`
Description: *none*

5.2.518 `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

5.2.519 `SoftwareImageProxy: Entity`
parent: `Entity`

Parameter: `parentSoftwareImage`
Type: reference to `SoftwareImage`
Description: Parent software image

Parameter: `revisionID`
Type: integer
Description: Revision ID

5.2.520 `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

5.2.521 `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 enivironment

Parameter: `notes`
Type: string
Description: Notes

5.2.522 `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: `metric`
Type: unsigned integer
Description: Network metric

Parameter: `network`
Type: reference to `Network` or None
Description: Destination network the interface is connected to

Parameter: `networkDeviceName`
Type: string
Description: Name of network device

Parameter: `notes`
Type: string
Description: Administrator notes

5.2.523 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*

5.2.524 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*

5.2.525 StatusManagerSubSystemInfo: StatusSubSystemInfo

parent: StatusSubSystemInfo

Parameter: nodes
Type: unsigned integer
Description: *none*

Parameter: events
Type: unsigned integer
Description: *none*

5.2.526 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*

5.2.527 StatusSubSystemInfo: SubSystemInfo

parent: SubSystemInfo

Parameter: stopped
Type: boolean
Description: Stopped

Parameter: suspended
Type: boolean
Description: Suspended

5.2.528 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*

5.2.529 `StatusTransitionSubSystemInfo`: `StatusSubSystemInfo`

parent: `StatusSubSystemInfo`

Parameter: `handled`
Type: unsigned integer
Description: *none*

Parameter: `transitions`
Type: list of unsigned numbers
Description: Transition matrics: from -> to

5.2.530 `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

5.2.531 `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)

5.2.532 `StringListObject: Entity`
parent: `Entity`

Parameter: `list`
Type: list of strings
Description: List

5.2.533 `SubnetManagerRole: Role`
parent: `Role`

Parameter: `interconnect`
Type: enum
Description: Type of interconnect

Parameter: `ibl2mtu`
Type: enum
Description: IB L2 MTU Value

5.2.534 `SubSystemInfo: Entity`
parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `name`
Type: string
Description: Name

Parameter: `timestamp`
Type: timestamp
Description: Time

5.2.535 `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: `accessSettings`
Type: `AccessSettings` or None
Description: Configure the cluster wide Access 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

Parameter: `hasClientDaemon`
Type: boolean
Description: Switch runs a python cluster manager client daemon

Parameter: `ztpSettings`
Type: `ZTPSettings` or None
Description: Configure the ZTP settings

Parameter: `guid`
Type: UUID
Description: The switch GUID

Parameter: `subnetManager`
Type: boolean
Description: Indicate the subnet manager is running

Parameter: `disableSNMP`
Type: boolean
Description: Disable SNMP calls

Parameter: `services`
Type: list of `OSServiceConfig`
Description: Manage operating system services

Parameter: `cumulusMode`
Type: enum
Description: Cumulus mode

Parameter: `cumulusFile`
Type: string
Description: Cumulus file

Parameter: `cumulusConfiguration`
Type: free JSON object
Description: Cumulus

5.2.536 `SwitchPort: Entity`

parent: `Entity`

Parameter: `networkSwitch`

Type: reference to `Switch`
Description: Switch

Parameter: `prt`
Type: unsigned integer
Description: Port number on the switch

5.2.537 `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

5.2.538 `SyncSource: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `fspart`
Type: reference to `FSPart`
Description: *none*

Parameter: `priority`
Type: unsigned integer
Description: *none*

5.2.539 `SyncTarget: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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*

5.2.540 `SysInfoCollector: Entity`

parent: `Entity`

Parameter: `ref_device_uuid`
Type: UUID
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: `dpus`
Type: list of `DPUInfo`
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*

5.2.541 `SystemctlUnit: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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

5.2.542 TimeZoneSettings: Entity

parent: Entity

Parameter: timeZone
Type: string
Description: Time zone

Parameter: biosUTC
Type: boolean
Description: Store BIOS time in UTC

5.2.543 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

5.2.544 `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

Parameter: `IMEX`
Type: boolean
Description: Start IMEX daemon from prolog/epilog

5.2.545 `UGEJob: GridEngineJob`

parent: `GridEngineJob`

5.2.546 `UGEJobQueue: GridEngineJobQueue`

parent: `GridEngineJobQueue`

Parameter: `pelist`
Type: list of strings

Description: Parallel environments associated with queue

5.2.547 UGEJobQueueStat: GridEngineJobQueueStat

parent: GridEngineJobQueueStat

5.2.548 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

5.2.549 UGERole: Role

parent: Role

Parameter: wlmCluster
Type: reference to UGEWlmCluster
Description: WLM cluster link to this WLM role

5.2.550 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

5.2.551 UGESubmitRole: WlmSubmitRole

parent: WlmSubmitRole

Parameter: ugeWlmClusters
Type: list of references to UGEWlmCluster
Description: List of UGE clusters which the role belongs to

5.2.552 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

5.2.553 `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: free JSON object
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

5.2.554 `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

5.2.555 `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

5.2.556 `Validation: Entity`

parent: `Entity`

Parameter: `ref_entity_uuid`

Type: UUID
Description: Entity

Parameter: `field`
Type: string
Description: Field

Parameter: `error_code`
Type: enum
Description: Error

Parameter: `message`
Type: string
Description: Message

Parameter: `severity`
Type: enum
Description: Severity

5.2.557 `VersionInfo: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
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*

5.2.558 `WillChange: Entity`

parent: `Entity`

Parameter: `ref_base_type`
Type: string
Description: Base type

Parameter: `ref_entity_uuid`
Type: UUID
Description: Entity

Parameter: `parameter`
Type: string
Description: Parameter

Parameter: `auto_change`
Type: enum
Description: Auto change

5.2.559 `WireguardInfo: Entity`

parent: `Entity`

Parameter: `ref_node_uuid`
Type: UUID
Description: Node

Parameter: `interface`
Type: string
Description: Interface name

Parameter: `publicKey`
Type: string
Description: Public key

5.2.560 `WlmAdvancedAccountingSettings: Entity`

parent: `Entity`

Parameter: `managedHierarchy`
Type: list of strings
Description: Representation of account name as a list of organizational entities

Parameter: `separator`
Type: string
Description: Separator of organizational entities in the account names

Parameter: `jobCommentFields`
Type: list of strings

Description: User provided job type as a regexp that is parsed and monitored

Parameter: `extractAccountingInfo`
Type: boolean
Description: Extract accounting information, set to false to keep inside account/comments fields

5.2.561 `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

5.2.562 `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

Parameter: `accounting`
Type: `WlmAdvancedAccountingSettings` or None
Description: Advanced accounting settings

5.2.563 `WlmFairshareOverview: Entity`
parent: `Entity`

Parameter: `ref_wlm_cluster_uuid`
Type: UUID
Description: WlmCluster

Parameter: `fairshareTree`
Type: free JSON object
Description: Accounting fairshare tree

5.2.564 `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 menegment node configuration or not

Parameter: `notes`
Type: string
Description: Administrator notes

5.2.565 `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: `ref_node_uuids`
Type: list of unsigned numbers
Description: Node

Parameter: `ref_wlm_cluster_uuid`
Type: UUID
Description: WlmCluster

5.2.566 `WlmSubmitRole: Role`
parent: `Role`

5.2.567 `ZTPNewSwitchSettings: Entity`
parent: `Entity`

Parameter: `ztpScriptTemplate`
Type: string
Description: ZTP script template for new switches

Parameter: `switchImage`
Type: string
Description: Image loaded via ONIE

Parameter: `keyValueSettings`
Type: `KeyValueSettings` or None
Description: Key value settings which can be passed to the ZTP script

5.2.568 `ZTPSettings: Entity`
parent: `Entity`

Parameter: `ztpScriptTemplate`
Type: string
Description: ZTP script template

Parameter: `switchImage`
Type: string
Description: Image loaded via ONIE

Parameter: `checkImageInBoot`
Type: boolean
Description: Check image matches on boot, if not clear switch and start from scratch

Parameter: `runZtpOnEachBoot`

Type: boolean
Description: Run ZTP on each boot

Parameter: `authorizedKeyFileRoot`
Type: string
Description: Authorized key file to be copied for root user

Parameter: `authorizedKeyFileCumulus`
Type: string
Description: Authorized key file to be copied for cumulus user

Parameter: `enableAPI`
Type: boolean
Description: Enable

Parameter: `enableExternalAccessAPI`
Type: boolean
Description: Enable external access API instead of only localhost

Parameter: `mergeKeyValueSettingsPartition`
Type: boolean
Description: Merge key value settings partition

Parameter: `keyValueSettings`
Type: `KeyValueSettings` or None
Description: Key value settings which can be passed to the ZTP script

5.3 JSON Examples

complete.sh

```
#!/bin/bash

URL=https://localhost:8081/json/
user=root
pass=secretrootpassword

echo "========== login ==========="
curl -c curl.cookiest.txt -i -k -X POST -d '{"service":"login", "username":"root", \
"password":"'$pass'"}' $URL; echo
echo "========= master ==========="
curl --cookie curl.cookiest.txt -i -k -X POST -d '{"service":"cmdevice","call":"getNode",\
"arg":"master"}' $URL; echo
echo "========== logout ==========="
curl --cookie curl.cookiest.txt -i -k -X POST -d '{"service":"logout"}' $URL; echo
echo "========== denied ==========="
curl --cookie curl.cookiest.txt -i -k -X POST -d '{"service":"cmdevice","call":"getNode",\
"arg":"master"}' $URL; echo
rm -f curl.cookiest.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.cookiest.txt -i -k -X POST -d '{"service":"login", "username":"root", \
"password":"'$pass'"}' $URL

# curl --cookie curl.cookiest.txt -i -k -X POST -d '{"service":"\
cmsession","call":"getLastEvents","args":[0,256]}' $URL

curl --cookie curl.cookiest.txt -i -k -X POST -d '{"service":"cmmain","call":"getProfile"}' \
$URL
curl --cookie curl.cookiest.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 -qO- $URL --post-data='{"service":\
"cmdevice","call":"getDevices"}'
else
   wget --certificate=$HOME/.cm/admin.pem --private-key=$HOME/.cm/admin.key --no-check-cert\
ificate --server-response -qO- $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 -qO- $URL --post-data='{"service":"cmdevice",\
"call":"getDevice","arg":"'$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 -qO- $URL --post-data='{"service":"cmmon",\
"call":"getMonitoringMeasurable","name":"LoadOne"}'`
mkey=$(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 -qO- 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 -qO- $URL --post-data='{"service":"login","username":"'$user'", \
"password":"'$pass'"}'
echo
```

logout.sh

```
#!/bin/bash
```

```
URL=https://localhost:8081/json/
wget --load-cookies cookie.txt --no-check-certificate --server-response -qO- $URL \
--post-data='{"service":"logout"}'
rm cookie.txt
echo
```

node001.sh

```
#!/bin/bash
source url

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":"cmpart",\
"call":"getBasicEntityInformation"}'
```

push_to_CMDaemon.sh

In the following example, the health check `ManagedServicesOK`, is pushed to CMDaemon with a `FAIL` value.

Example

```
[root@basecm10 ~]# cat push_to_CMDaemon.sh
#!/bin/bash
URL='https://master:8081/monitoring/push/ManagedServicesOk?info=brol&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@basecm10 ~]# curl --cert ~/.cm/admin.pem --key ~/.cm/admin.key -k
"https://master:8081/rest/v1/monitoring/latest?measurable=ManagedServicesOK&entity=basecm10&indent=1"
{
 "data": [
  {
   "age": 89.735,
   "entity": "basecm10",
```

```
   "measurable": "ManagedServicesOk",
   "raw": 0.0,
   "time": 1586450030968,
   "value": "PASS"
  }
 ]
}

[root@basecm10 ~]#./push_to_CMDaemon.sh
HTTP/1.1 200 OK
Content-Length: 55
Content-Type: application/json

{
  "values": {
    "added": 1,
    "provided": 1
  }
}
[root@basecm10 ~]# curl --cert ~/.cm/admin.pem --key ~/.cm/admin.key -k
"https://master:8081/rest/v1/monitoring/latest?measurable=ManagedServicesOK&entity=basecm10&indent=1"
{
 "data": [
  {
   "age": 3.357,
   "entity": "basecm10",
   "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
```