Work with the management node REST API

HCI

NetApp
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Management node REST API UI overview

By using the built-in REST API UI (`https://<ManagementNodeIP>/mnode`), you can run or understand APIs relating to the management node services, including proxy server configuration, service level updates, or asset management.

Tasks you can perform with REST APIs:

Authorization

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Get authorization to use REST APIs

You must authorize before you can use APIs for management services in the REST API UI. You do this by obtaining an access token.

To obtain a token, you provide cluster admin credentials and a client ID. Each token lasts approximately ten minutes. After a token expires, you can authorize again for a new access token.

Authorization functionality is set up for you during management node installation and deployment. The token service is based on the storage cluster you defined during setup.

Before you begin

- Your cluster version should be running NetApp Element software 11.3 or later.
- You should have deployed a management node running version 11.3 or later.

API command

```
TOKEN=`curl -k -X POST https://MVIP/auth/connect/token -F client_id=mnode-
client -F grant_type=password -F username=CLUSTER_ADMIN -F
password=CLUSTER_PASSWORD|awk -F':' '{print $2}'|awk -F',' '{print
$1}'|sed s/\"//g`
```

REST API UI steps

1. Access the REST API UI for the service by entering the management node IP address followed by the service name, for example `/mnode/`:

   ```
   https://<ManagementNodeIP>/mnode/
   ```

2. Click **Authorize**.

   Alternately, you can click on a lock icon next to any service API.

3. Complete the following:
   a. Enter the cluster user name and password.
   b. Enter the client ID as `mnode-client`.
   c. Do not enter a value for the client secret.
   d. Click **Authorize** to begin a session.
4. Close the **Available authorizations** dialog box.

   If you try to run a command after the token expires, a `401 Error: UNAUTHORIZED` message appears. If you see this, authorize again.

Find more information

- NetApp Element Plug-in for vCenter Server
- NetApp HCI Resources Page

Enable Active IQ and NetApp HCI monitoring

You can enable Active IQ storage monitoring for NetApp HCI and NetApp HCI compute monitoring if you did not already do so during installation or upgrade. You might need to use this procedure if you disabled telemetry using the NetApp HCI Deployment Engine.

The Active IQ collector service forwards configuration data and Element software-based cluster performance metrics to NetApp Active IQ for historical reporting and near real-time performance monitoring. The NetApp HCI monitoring service enables forwarding of storage cluster faults to vCenter for alert notification.

Before you begin

- Your storage cluster is running NetApp Element software 11.3 or later.
- You have deployed a management node running version 11.3 or later.
- You have internet access. The Active IQ collector service cannot be used from dark sites that do not have external connectivity.

Steps

1. Get the base asset ID for the installation:
   a. Open the inventory service REST API UI on the management node:

      ```
      https://<ManagementNodeIP>/inventory/1/
      ```

   b. Click **Authorize** and complete the following:
      i. Enter the cluster user name and password.
      ii. Enter the client ID as `mnode-client`.
      iii. Click **Authorize** to begin a session.
      iv. Close the window.
   c. From the REST API UI, click **GET /installations**.
   d. Click **Try it out**.
   e. Click **Execute**.
   f. From the code 200 response body, copy the `id` for the installation.

      ```
      {
        "installations": [
          {
            "_links": {
              "collection":
      "https://10.111.211.111/inventory/1/installations",
              "self":
      "https://10.111.217.111/inventory/1/installations/abcd01e2-ab00-1xxx-
      91ee-12f111xxc7x0x"
            },
            "id": "abcd01e2-ab00-1xxx-91ee-12f111xxc7x0x",
      ```

      Your installation has a base asset configuration that was created during installation or upgrade.

2. Activate telemetry:

a. Access the mnode service API UI on the management node by entering the management node IP address followed by `/mnode`:

```
https://<ManagementNodeIP>/mnode
```

b. Click **Authorize** or any lock icon and complete the following:

i. Enter the cluster user name and password.

ii. Enter the client ID as `mnode-client`.

iii. Click **Authorize** to begin a session.

iv. Close the window.

c. Configure the base asset:

i. Click **PUT /assets/{asset_id}**.

ii. Click **Try it out**.

iii. Enter the following in the JSON payload:

```
{
"telemetry_active": true
"config": {}
}
```

iv. Enter the base ID from the previous step in **asset_ID**.

v. Click **Execute**.

The Active IQ service is automatically restarted whenever assets are changed. Modifying assets results in a short delay before settings are applied.

3. If you have not already done so, add a vCenter controller asset for NetApp HCI monitoring (NetApp HCI installations only) and Hybrid Cloud Control (for all installations) to the management node known assets:

A controller asset is required for NetApp HCI monitoring services.

a. Click **POST /assets/{asset_id}/controllers** to add a controller sub-asset.

b. Click **Try it out**.

c. Enter the parent base asset ID you copied to your clipboard in the **asset_id** field.

d. Enter the required payload values with `type` as `vCenter` and vCenter credentials.

```
{
"username": "string",
"password": "string",
"ip": "string",
"type": "vCenter",
"host_name": "string",
"config": {}
}
```

`ip` is the vCenter IP address.

e. Click **Execute**.

Find more information

- NetApp Element Plug-in for vCenter Server
- NetApp HCI Resources Page

Configure NetApp Hybrid Cloud Control for multiple vCenters

You can configure NetApp Hybrid Cloud Control to manage assets from two or more vCenters that are not using Linked Mode.

You should use this process after your initial installation when you need to add assets for a recently scaled installation or when new assets were not added automatically to your configuration. Use these APIs to add assets that are recent additions to your installation.

What you'll need

- Your cluster version is running NetApp Element software 11.3 or later.
- You have deployed a management node running version 11.3 or later.

Steps

1. Add new vCenters as controller assets to the management node configuration.
2. Add new compute nodes as compute assets to the management node configuration.

   You might need to change BMC credentials for compute nodes to resolve a `Hardware ID not available` or `Unable to Detect` error indicated in NetApp Hybrid Cloud Control.

3. Refresh the inventory service API on the management node:

```
https://<ManagementNodeIP>/inventory/1/
```

As an alternative, you can wait 2 minutes for the inventory to update in NetApp Hybrid Cloud Control UI.

a. Click **Authorize** and complete the following:
   i. Enter the cluster user name and password.
   ii. Enter the client ID as `mnode-client`.
   iii. Click **Authorize** to begin a session.
   iv. Close the window.
b. From the REST API UI, click **GET /installations**.
c. Click **Try it out**.
d. Click **Execute**.
e. From the response, copy the installation asset ID (`"id"`).
f. From the REST API UI, click **GET /installations/{id}**.
g. Click **Try it out**.
h. Set refresh to `True`.
i. Paste the installation asset ID into the **id** field.
j. Click **Execute**.

4. Refresh the NetApp Hybrid Cloud Control browser to see the changes.

Find more information

- NetApp Element Plug-in for vCenter Server
- NetApp HCI Resources Page

Add compute and controller assets to the management node

You can add compute and controller assets to the management node configuration using the REST API UI.

You might need to add an asset if you recently scaled your installation and new assets were not added automatically to your configuration. Use these APIs to add assets that are recent additions to your installation.

What you'll need

- Your cluster version is running NetApp Element software 11.3 or later.
- You have deployed a management node running version 11.3 or later.
- You have created a new NetApp HCC role in vCenter to limit the management node services view to NetApp-only assets.
- You have the vCenter management IP address and credentials.
- You have the compute node (ESXi) management IP address and root credentials.
- You have the hardware (BMC) management IP address and administrator credentials.

About this task

(NetApp HCI only) If you do not see compute nodes in Hybrid Cloud Control (HCC) after scaling your NetApp HCI system, you can add a compute node using the `POST /assets/{asset_id}/compute-nodes` described in this procedure.

> When manually adding compute nodes, make sure that you also add the BMC assets otherwise an error is returned.

Steps

1. Get the base asset ID for the installation:
   a. Open the inventory service REST API UI on the management node:

      ```
      https://<ManagementNodeIP>/inventory/1/
      ```

   b. Select **Authorize** and complete the following:
      i. Enter the cluster user name and password.
      ii. Enter the client ID as `mnode-client`.
      iii. Select **Authorize** to begin a session.
      iv. Close the window.
   c. From the REST API UI, select **GET /installations**.
   d. Select **Try it out**.
   e. Select **Execute**.
   f. From the code 200 response body, copy the `id` for the installation.

      ```
      {
        "installations": [
          {
            "_links": {
              "collection":
      "https://10.111.211.111/inventory/1/installations",
              "self":
      "https://10.111.217.111/inventory/1/installations/abcd01e2-ab00-1xxx-
      91ee-12f111xxc7x0x"
            },
            "id": "abcd01e2-ab00-1xxx-91ee-12f111xxc7x0x",
      ```

      > Your installation has a base asset configuration that was created during installation or upgrade.

   g. From the REST API UI, select **GET /installations/{id}**.
   h. Select **Try it out**.
   i. Paste the installation asset ID into the **id** field.

j. Select **Execute**.

k. From the response, copy and save the cluster controller ID (`"controllerId"`) for use in a later step.

2. (For compute nodes only) Locate the hardware tag for your compute node in vSphere.

3. To add a controller asset (vCenter), compute node (ESXi), or hardware (BMC) to an existing base asset, select one of the following.

Option	Description
POST /assets/{asset_id}/controllers	1. Open the mNode service REST API UI on the management node: `https://<ManagementNodeIP>/mnode` a. Select **Authorize** and complete the following: i. Enter the cluster user name and password. ii. Enter the client ID as `mnode-client`. iii. Select **Authorize** to begin a session. iv. Close the window. 2. Select **POST /assets/{asset_id}/controllers**. 3. Select **Try it out**. 4. Enter the parent base asset ID in the **asset_id** field. 5. Add the required values to the payload. 6. Select **Execute**.

Option	Description
POST /assets/{asset_id}/compute-nodes	1. Open the mNode service REST API UI on the management node: `https://<ManagementNodeIP>/mnode` a. Select **Authorize** and complete the following: i. Enter the cluster user name and password. ii. Enter the client ID as `mnode-client`. iii. Select **Authorize** to begin a session. iv. Close the window. 2. Select **POST /assets/{asset_id}/compute-nodes**. 3. Select **Try it out**. 4. Enter the parent base asset ID you copied in an earlier step in the **asset_id** field. 5. In the payload, do the following: a. Enter the management IP for the node in the `ip` field. b. For `hardwareTag`, enter the hardware tag value you saved in an earlier step. c. Enter other values, as required. 6. Select **Execute**.
POST /assets/{asset_id}/hardware-nodes	1. Open the mNode service REST API UI on the management node: `https://<ManagementNodeIP>/mnode` a. Select **Authorize** and complete the following: i. Enter the cluster user name and password. ii. Enter the client ID as `mnode-client`. iii. Select **Authorize** to begin a session. iv. Close the window. 2. Select **POST /assets/{asset_id}/hardware-nodes**. 3. Select **Try it out**. 4. Enter the parent base asset ID in the **asset_id** field. 5. Add the required values to the payload. 6. Select **Execute**.

Find more information

- NetApp Element Plug-in for vCenter Server
- NetApp HCI Resources Page

How to locate a hardware tag for a compute node

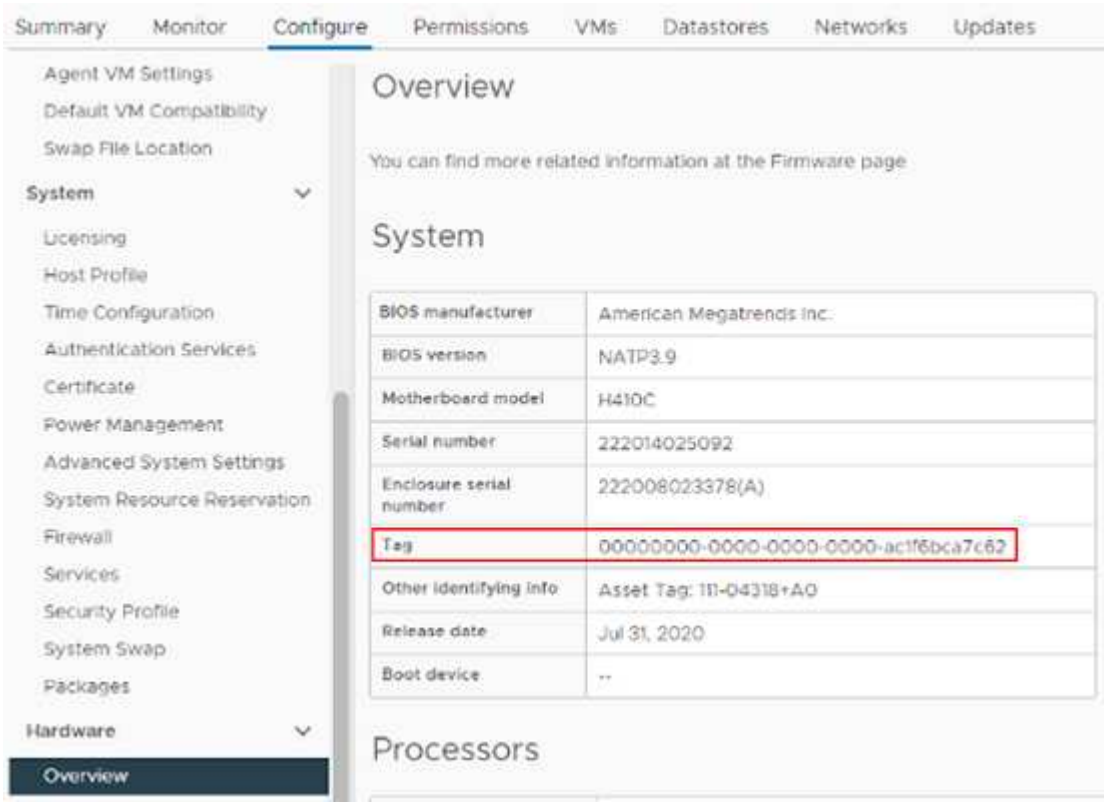
You require the hardware tag to add your compute node assets to the management node configuration using the REST API UI.

VMware vSphere 8.0 and 7.0

Locate the hardware tag for a compute node in VMware vSphere Web Client 8.0 and 7.0.

Steps

1. Select the host in the vSphere Web Client navigator.
2. Select the **Configure** tab.
3. From the sidebar, select **Hardware** > **Overview**. Check if the hardware tag is listed in the `System` table.



4. Copy and save the value for **Tag**.
5. Add your compute and controller assets to the management node.

VMware vSphere 6.7 and 6.5

Locate the hardware tag for a compute node in VMware vSphere Web Client 6.7 and 6.5.

Steps

1. Select the host in the vSphere Web Client navigator.
2. Select the **Monitor** tab, and select **Hardware Health**.
3. Check if the tag is listed with the BIOS manufacturer and model number.

4. Copy and save the value for **Tag**.
5. Add your compute and controller assets to the management node.

Create and manage storage cluster assets

You can add new storage cluster assets to the management node, edit the stored credentials for known storage cluster assets, and delete storage cluster assets from the management node using the REST API.

What you'll need

- Ensure that your storage cluster version is running NetApp Element software 11.3 or later.
- Ensure that you have deployed a management node running version 11.3 or later.

Storage cluster asset management options

Choose one of the following options:

- Retrieve the installation ID and cluster ID of a storage cluster asset
- Add a new storage cluster asset
- Edit the stored credentials for a storage cluster asset
- Delete a storage cluster asset

Retrieve the installation ID and cluster ID of a storage cluster asset

You can use the REST API get the installation ID and the ID of the storage cluster. You need the installation ID to add a new storage cluster asset, and the cluster ID to modify or delete a specific storage cluster asset.

Steps

1. Access the REST API UI for the inventory service by entering the management node IP address followed by `/inventory/1/`:

```
https://<ManagementNodeIP>/inventory/1/
```

2. Click **Authorize** or any lock icon and complete the following:
   a. Enter the cluster user name and password.
   b. Enter the client ID as `mnode-client`.
   c. Click **Authorize** to begin a session.
   d. Close the window.
3. Click **GET /installations**.
4. Click **Try it out**.
5. Click **Execute**.

   The API returns a list of all known installations.

6. From the code 200 response body, save the value in the `id` field, which you can find in the list of installations. This is the installation ID. For example:

```
"installations": [
    {
      "id": "1234a678-12ab-35dc-7b4a-1234a5b6a7ba",
      "name": "my-hci-installation",
      "_links": {
        "collection": "https://localhost/inventory/1/installations",
        "self": "https://localhost/inventory/1/installations/1234a678-
12ab-35dc-7b4a-1234a5b6a7ba"
      }
    }
  ]
```

7. Access the REST API UI for the storage service by entering the management node IP address followed by `/storage/1/`:

```
https://<ManagementNodeIP>/storage/1/
```

8. Click **Authorize** or any lock icon and complete the following:
   a. Enter the cluster user name and password.
   b. Enter the client ID as `mnode-client`.
   c. Click **Authorize** to begin a session.
   d. Close the window.
9. Click **GET /clusters**.
10. Click **Try it out**.
11. Enter the installation ID you saved earlier into the `installationId` parameter.
12. Click **Execute**.

    The API returns a list of all known storage clusters in this installation.

13. From the code 200 response body, find the correct storage cluster and save the value in the cluster's `storageId` field. This is the storage cluster ID.

Add a new storage cluster asset

You can use the REST API to add one or more new storage cluster assets to the management node inventory. When you add a new storage cluster asset, it is automatically registered with the management node.

What you'll need

- You have copied the storage cluster ID and installation ID for any storage clusters you want to add.
- If you are adding more than one storage node, you have read and understood the limitations of the authoritative cluster and multiple storage cluster support.

> ⓘ All users defined on the authoritative cluster are defined as users on all other clusters tied to the Hybrid Cloud Control instance.

Steps

1. Access the REST API UI for the storage service by entering the management node IP address followed by `/storage/1/`:

```
https://<ManagementNodeIP>/storage/1/
```

2. Click **Authorize** or any lock icon and complete the following:
   a. Enter the cluster user name and password.
   b. Enter the client ID as `mnode-client`.
   c. Click **Authorize** to begin a session.
   d. Close the window.
3. Click **POST /clusters**.
4. Click **Try it out**.
5. Enter the new storage cluster's information in the following parameters in the **Request body** field:

```
{
  "installationId": "a1b2c34d-e56f-1a2b-c123-1ab2cd345d6e",
  "mvip": "10.0.0.1",
  "password": "admin",
  "userId": "admin"
}
```

Parameter	Type	Description
`installationId`	string	The installation in which to add the new storage cluster. Enter the installation ID you saved earlier into this parameter.

Parameter	Type	Description
`mvip`	string	The IPv4 management virtual IP address (MVIP) of the storage cluster.
`password`	string	The password used to communicate with the storage cluster.
`userId`	string	The user ID used to communicate with the storage cluster (the user must have administrator privileges).

6. Click **Execute**.

   The API returns an object containing information about the newly added storage cluster asset, such as the name, version, and IP address information.

Edit the stored credentials for a storage cluster asset

You can edit the stored credentials that the management node uses to log in to a storage cluster. The user you choose must have cluster admin access.

Ensure you have followed the steps in Retrieve the installation ID and cluster ID of a storage cluster asset before continuing.

Steps

1. Access the REST API UI for the storage service by entering the management node IP address followed by `/storage/1/`:

   ```
   https://<ManagementNodeIP>/storage/1/
   ```

2. Click **Authorize** or any lock icon and complete the following:
   a. Enter the cluster user name and password.
   b. Enter the client ID as `mnode-client`.
   c. Click **Authorize** to begin a session.
   d. Close the window.
3. Click **PUT /clusters/{storageId}**.
4. Click **Try it out**.
5. Paste the storage cluster ID you copied earlier into the `storageId` parameter.
6. Change one or both of the following parameters in the **Request body** field:

```
{
  "password": "adminadmin",
  "userId": "admin"
}
```

Parameter	Type	Description
password	string	The password used to communicate with the storage cluster.
userId	string	The user ID used to communicate with the storage cluster (the user must have administrator privileges).

7. Click **Execute**.

Delete a storage cluster asset

You can delete a storage cluster asset if the storage cluster is no longer in service. When you remove a storage cluster asset, it is automatically unregistered from the management node.

Ensure you have followed the steps in Retrieve the installation ID and cluster ID of a storage cluster asset before continuing.

Steps

1. Access the REST API UI for the storage service by entering the management node IP address followed by `/storage/1/`:

```
https://<ManagementNodeIP>/storage/1/
```

2. Click **Authorize** or any lock icon and complete the following:
   a. Enter the cluster user name and password.
   b. Enter the client ID as `mnode-client`.
   c. Click **Authorize** to begin a session.
   d. Close the window.
3. Click **DELETE /clusters/{storageId}**.
4. Click **Try it out**.
5. Enter the storage cluster ID you copied earlier in the `storageId` parameter.
6. Click **Execute**.

   Upon success, the API returns an empty response.

Find more information

- Authoritative cluster
- NetApp Element Plug-in for vCenter Server
- NetApp HCI Resources Page

View or edit existing controller assets

You can view information about and edit existing VMware vCenter controllers in the management node configuration using the REST API. Controllers are VMware vCenter instances registered to the management node for your NetApp HCI installation.

Before you begin

- Ensure that your cluster version is running NetApp Element software 11.3 or later.
- Ensure that you have deployed a management node running version 11.3 or later.

Access the management services REST API

Steps

1. Access the REST API UI for management services by entering the management node IP address followed by `/vcenter/1/`:

   ```
   https://<ManagementNodeIP>/vcenter/1/
   ```

2. Click **Authorize** or any lock icon and complete the following:
   a. Enter the cluster user name and password.
   b. Enter the client ID as `mnode-client`.
   c. Click **Authorize** to begin a session.
   d. Close the window.

View stored information about existing controllers

You can list existing vCenter controllers that are registered with the management node and view stored information about them using the REST API.

Steps

1. Click **GET /compute/controllers**.
2. Click **Try it out**.
3. Click **Execute**.

   The API returns a list of all known vCenter controllers, along with the IP address, controller ID, hostname, and user ID used to communicate with each controller.

4. If you want the connection status of a particular controller, copy the controller ID from the `id` field of that controller to your clipboard and see View the status of an existing controller.

View the status of an existing controller

You can view the status of any of the existing vCenter controllers registered with the management node. The API returns a status indicating whether NetApp Hybrid Cloud Control can connect with the vCenter controller as well as the reason for that status.

Steps

1. Click **GET /compute/controllers/{controller_id}/status**.
2. Click **Try it out**.
3. Enter the controller ID you copied earlier in the `controller_id` parameter.
4. Click **Execute**.

   The API returns a status of this particular vCenter controller, along with a reason for that status.

Edit the stored properties of a controller

You can edit the stored user name or password for any of the existing vCenter controllers registered with the management node. You cannot edit the stored IP address of an existing vCenter controller.

Steps

1. Click **PUT /compute/controllers/{controller_id}**.
2. Enter the controller ID of a vCenter controller in the `controller_id` parameter.
3. Click **Try it out**.
4. Change either of the following parameters in the **Request body** field:

Parameter	Type	Description
`userId`	string	Change the user ID used to communicate with the vCenter controller (the user must have administrator privileges).
`password`	string	Change the password used to communicate with the vCenter controller.

5. Click **Execute**.

   The API returns updated controller information.

Find more information

- Add compute and controller assets to the management node
- NetApp Element Plug-in for vCenter Server
- NetApp HCI Resources Page

Remove an asset from the management node

If you physically replace a compute node or need to remove it from the NetApp HCI cluster, you must remove the compute node asset using the management node APIs.

What you'll need

- Your storage cluster is running NetApp Element software 11.3 or later.
- You have deployed a management node running version 11.3 or later.

Steps

1. Enter the management node IP address followed by `/mnode/1/`:

   ```
   https://<ManagementNodeIP>/mnode/1/
   ```

2. Click **Authorize** or any lock icon and enter cluster admin credentials for permissions to use APIs.
   a. Enter the cluster user name and password.
   b. Select **Request body** from the type drop-down list if the value is not already selected.
   c. Enter the client ID as `mnode-client` if the value is not already populated.
   d. Do not enter a value for the client secret.
   e. Click **Authorize** to begin a session.
   f. Close the window.
3. Close the **Available authorizations** dialog box.
4. Click **GET/assets**.
5. Click **Try it out**.
6. Click **Execute**.
7. Scroll down in the response body to the **Compute** section, and copy the `parent` and `id` values for the failed compute node.
8. Click **DELETE/assets/{asset_id}/compute-nodes/{compute_id}**.
9. Click **Try it out**.
10. Enter the `parent` and `id` values you copied in a previous step.
11. Click **Execute**.

Configure a proxy server

If your cluster is behind a proxy server, you must configure the proxy settings so that you can reach a public network.

A proxy server is used for telemetry collectors and reverse tunnel connections. You can enable and configure a proxy server using the REST API UI if you did not already configure a proxy server during installation or upgrade. You can also modify existing proxy server settings or disable a proxy server.

The command to configure a proxy server updates and then returns the current proxy settings for the

management node. The proxy settings are used by Active IQ, the NetApp HCI monitoring service that is deployed by the NetApp Deployment Engine, and other Element software utilities that are installed on the management node, including the reverse support tunnel for NetApp Support.

Before you begin

- You should know host and credential information for the proxy server you are configuring.
- Ensure that your cluster version is running NetApp Element software 11.3 or later.
- Ensure that you have deployed a management node running version 11.3 or later.
- (Management node 12.0 and later) You have updated NetApp Hybrid Cloud Control to management services version 2.16 before configuring a proxy server.

Steps

1. Access the REST API UI on the management node by entering the management node IP address followed by `/mnode`:

   ```
   https://<ManagementNodeIP>/mnode
   ```

2. Click **Authorize** or any lock icon and complete the following:
   a. Enter the cluster user name and password.
   b. Enter the client ID as `mnode-client`.
   c. Click **Authorize** to begin a session.
   d. Close the window.
3. Click **PUT /settings**.
4. Click **Try it out**.
5. To enable a proxy server, you must set `use_proxy` to true. Enter the IP or host name and proxy port destinations.

   The proxy user name, proxy password, and SSH port are optional and should be omitted if not used.

   ```
   {
   "proxy_ip_or_hostname": "[IP or name]",
   "use_proxy": [true/false],
   "proxy_username": "[username]",
   "proxy_password": "[password]",
   "proxy_port": [port value],
   "proxy_ssh_port": [port value: default is 443]
   }
   ```

6. Click **Execute**.

You might need to reboot your management node depending on your environment.

Find more information

- NetApp Element Plug-in for vCenter Server
- NetApp HCI Resources Page

Verify management node OS and services versions

You can verify the version numbers of the management node OS, management services bundle, and individual services running on the management node using the REST API in the management node.

What you'll need

- Your cluster is running NetApp Element software 11.3 or later.
- You have deployed a management node running version 11.3 or later.

Options

- API commands
- REST API UI steps

API commands

- Get version information about the management node OS, the management services bundle, and the management node API (mnode-api) service that are running on the management node:

```
curl -X GET "https://<ManagementNodeIP>/mnode/about" -H  "accept:
application/json"
```

- Get version information about individual services running on the management node:

```
curl -X GET "https://<ManagementNodeIP>/mnode/services?status=running"
-H  "accept: */*" -H  "Authorization: Bearer ${TOKEN}"
```

> You can find the bearer `${TOKEN}` used by the API command when you authorize. The bearer `${TOKEN}` is in the curl response.

REST API UI steps

1. Access the REST API UI for the service by entering the management node IP address followed by `/mnode/`:

```
https://<ManagementNodeIP>/mnode/
```

2. Do one of the following:
   - Get version information about the management node OS, the management services bundle, and the management node API (mnode-api) service that are running on the management node:

a. Select **GET /about**.
b. Select **Try it out**.
c. Select **Execute**.

The management services bundle version (`"mnode_bundle_version"`), management node OS version (`"os_version"`), and management node API version (`"version"`) are indicated in the response body.

- Get version information about individual services running on the management node:
  a. Select **GET /services**.
  b. Select **Try it out**.
  c. Select the status as **Running**.
  d. Select **Execute**.

The services that are running on the management node are indicated in the response body.

Find more information

- NetApp Element Plug-in for vCenter Server
- NetApp HCI Resources Page

Getting logs from management services

You can retrieve logs from the services running on the management node using the REST API. You can pull logs from all public services or specify specific services and use query parameters to better define the return results.

What you'll need

- Your cluster version is running NetApp Element software 11.3 or later.
- You have deployed a management node running version 11.3 or later.

Steps

1. Open the REST API UI on the management node.
   - Beginning with management services 2.21.61:

```
https://<ManagementNodeIP>/mnode/4/
```

   - For management services 2.20.69 or earlier:

```
https://<ManagementNodeIP>/mnode
```

2. Select **Authorize** or any lock icon and complete the following:
   a. Enter the cluster user name and password.

b. Enter the client ID as mnode-client if the value is not already populated.
c. Select **Authorize** to begin a session.
d. Close the window.

3. Select **GET /logs**.
4. Select **Try it out**.
5. Specify the following parameters:
   - `Lines`: Enter the number of lines you want the log to return. This parameter is an integer that defaults to 1000.

     Avoid requesting the entire history of log content by setting Lines to 0.

   - `since`: Adds a ISO-8601 timestamp for the service logs starting point.

     Use a reasonable `since` parameter when gathering logs of wider timespans.

   - `service-name`: Enter a service name.

     Use the `GET /services` command to list services on the management node.

   - `stopped`: Set to `true` to retrieve logs from stopped services.
6. Select **Execute**.
7. From the response body, select **Download** to save the log output.

Find more Information

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