


## **Adding Moonshot Nodes**

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 **Important:** Moonshots are supported as compute nodes.

HP Moonshot Servers are designed and tailored for specific workloads to deliver optimum performance. These support a wide range of complex IT demands right from cloud based applications to Social Media, Big Data and Mobility. HP Moonshot Server is the world's first software defined web server that will accelerate innovation while delivering breakthrough efficiency and scale.

## Supported Moonshot Servers

The HP Moonshot Servers are now verified hardware to run HP Helion OpenStack. The supported Moonshot Servers are :

- HP ProLiant m710 Server Cartridge
- HP ProLiant m300 Server Cartridge

## Cartridge Identifier

To manage HP Moonshot servers you must know the cartridge address and the node address (these are also known as the **transit\_address** and the **target\_address** respectively).

- **transit\_address** and **target\_address** are the values that would be specified to the `-T` and `-t` flags of `ipmitool`, respectively, when using dual bridging mode.
- **Node Address (or "-t", "target\_address"):** Moonshot cartridges may have one or more nodes in a single cartridge. The first node in the cartridge has `0x72` as its node address.

If the Moonshot cartridge has only one node, the node address will always be `0x72`.

If it were to have 4 nodes, for example, the second, third and fourth nodes will have `0x74`, `0x76` and `0x78` as their addresses, respectively.

## Cartridge Address (or "-T", "transit\_address")

Below is a sample mapping between the cartridge-no and cartridge address. The address increases by 2 as the cartridge number increases:

- C1N1 = 0x82
- C2N1 = 0x84
- C3N1 = 0x86
- ----
- C10N1 = 0x94
- C11N1 = 0x96
- ----
- C28N1 = 0xB8
- ----

This command returns the cartridge address:

```
ipmitool -I lanplus -H xx.xx.xx.xx -U Administrator -P xxxxxx sdr list mcloc
```

## Configure Moonshot Nodes

To configure Moonshot Nodes, you must add the configuration details in the following YAML files:

- `control_plane.yml`
- `disks_compute.yml`
- `net_interfaces.yml`

- `servers.yml`
- `server_roles.yml`

For each Moonshot Nodes you must provide the iLO information which is shared across Moonshot and a Moonshot identifier as an additional field.

### YAML Files

Ensure that you modify the following YAML file before provisioning Moonshot nodes:

- `control_plane.yml`

A control plane uses a server with a particular server-role. A sample file of `control_plane.yml` is shown below:

```
---
product:
  version: 2

resource-nodes:
  - name: moonshot
    resource-prefix: moon
    server-role: ROLE-COMPUTE-MOONSHOT
    service-components:
      - ntp-client
      - nova-kvm
      - nova-compute
      - neutron-l3-agent
      - neutron-metadata-agent
      - neutron-openvswitch-agent
      - neutron-lbaasv2-agent
```

In the sample file, **server-role: ROLE-COMPUTE-MOONSHOT** identifies the role of the Moonshot node.

- `disks_compute.yml`



**Note:** The minimum size of the root device used in input model is 32GB. You can increase the % value so that the size is greater than 32GB. This is a generic requirement but is specifically relevant to moonshots since the disk is relatively small.

A disk model defines how local storage is to be configured and presented to services. Disk models are identified by a name, which can be specified by the user. . A sample file of `disks_compute.yml` is shown below:

```
---
product:
  version: 2

disk-models:
  - name: DISK_SET_COMPUTE_MOONSHOT
    # Disk model to be used for moonshot compute nodes
    # /dev/sda_root is used as a volume group for /, /var/log and /var/
    crash
    # sda_root is a templated value to align with whatever partition is
    # really used
    # This value is checked in os config and replaced by the partition
    # actually used
    # on sda e.g. sda1 or sda5
    # /dev/sdb is used as a volume group for /var/lib (for VM storage)
    # Additional discs can be added to either volume group
    volume-groups:
    # The policy is not to consume 100% of the space of each volume group.
    # 5% should be left free for snapshots and to allow for some
    flexibility.
```

```

- name: hlm-vg
  physical-volumes:
    - /dev/sda_root
  logical-volumes:
    - name: root
      size: 35%
      fstype: ext4
      mount: /
    - name: log
      size: 10%
      mount: /var/log
      fstype: ext4
      mkfs-opts: -O large_file
    - name: crash
      size: 5%
      mount: /var/crash
      fstype: ext4
      mkfs-opts: -O large_file
    - name: compute
      size: 45%
      mount: /var/lib/nova
      fstype: ext4
      mkfs-opts: -O large_file

```

- `net_interfaces.yml`

Interface model describes how its network interfaces are to be configured and used. A sample file of `net_interfaces.yml` is shown below:

```

---
product:
  version: 2

interface-models:
  # These examples uses eth3 and eth4 as a bonded
  # pair for all networks on all three server roles
  #
  # Edit the device names and bond options
  # to match your environment
  #

- name: INTERFACE_SET_COMPUTE_MOONSHOT
  network-interfaces:
    - name: eth1
      device:
        name: eth1
  network-groups:
    - EXTERNAL_VM
    - GUEST
    - MGMT

```

- `servers.yml`

Servers list the available servers used for deploying the cloud. A sample file of `servers.yml` is shown below:

```

---
product:
  version: 2

servers:
  # NOTE: Addresses of servers need to be
  #       changed to match your environment.
  #
  #       Add additional servers as required

```

```
#
#      nic-mapping is optional.  The value specified is the name
#      of an entry in the nic-mappings list from nic_mappings.yml.
#      To use, uncomment and modify to match your environment.

# Compute Nodes
- id: compute6
  ip-addr: 192.168.60.21
  role: ROLE-COMPUTE-MOONSHOT
# nic-mapping: MY_2PORT_SERVER
```

In the sample file, **role: ROLE-COMPUTE-MOONSHOT** identifies the role of the Moonshot node.

Moonshot server comes with only 2 NICs. One is used for PXE and another is used as truck 9.



**Note:** NIC binding is not supported due to limited number of NICs.

- `server_roles.yml`

You specify the usage of the server or where you want to use a particular server. A sample file of `server_roles.yml` is shown below:

```
---
product:
  version: 2

server-roles:
  - name: ROLE-COMPUTE-MOONSHOT
    interface-model: INTERFACE_SET_COMPUTE_MOONSHOT
    disk-model: DISK_SET_COMPUTE_MOONSHOT
```

Once you have modified the YAML files as per the moonshot node requirement, you can proceed with the installation. Refer to [installation guide](#) (need to insert the link) for more details.