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Hitachi Unified Compute Platform 2000 for VMware vSphere with Hitachi Content Platform on Virtual Machines

Deployment Guide

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Hitachi Unified Compute Platform 2000 for VMware vSphere with Hitachi Content Platform on Virtual Machines

Deployment Guide

Use this guide to deploy **Hitachi Content Platform (HCP)** on virtual machines on Hitachi Unified Compute Platform 2000 (UCP) for VMware vSphere.

Hitachi Unified Compute Platform (UCP) is a family of integrated and flexible reference solutions. Each Unified Compute Platform solution, configured for immediate deployment, runs top tier infrastructure applications without over-purchasing or provisioning unnecessary equipment. The entire solution is stack certified and compatible.

Hitachi Content Platform (HCP) provides distributed object storage for advanced unstructured data storage management. This helps you address challenges of ever-growing volumes of unstructured file storage. Divide a single Content Platform into multiple virtual object stores, secure access to each store, and uniquely configure each store for a particular workload.

Eliminate storage silos using Content Platform with a single object storage infrastructure that supports a wide range of data types, applications, and users with different service level needs in enterprise and cloud environments.

Content Platform stores objects as data and metadata. **Metadata** describes the object. Distributed across the storage space, Content Platform represents these objects as either URLs or files in a standard filesystem.

A Content Platform **repository** is partitioned into namespaces. Each namespace consists of a distinct logical grouping of objects with its own directory structure. **Namespaces** are owned and managed by tenants.

Hitachi Content Platform provides access to objects through a variety of industry-standard protocols, as well as through various Content Platform-specific interfaces.

Additional references:

For Unified Compute Platform: Hitachi Compute Platform 2000

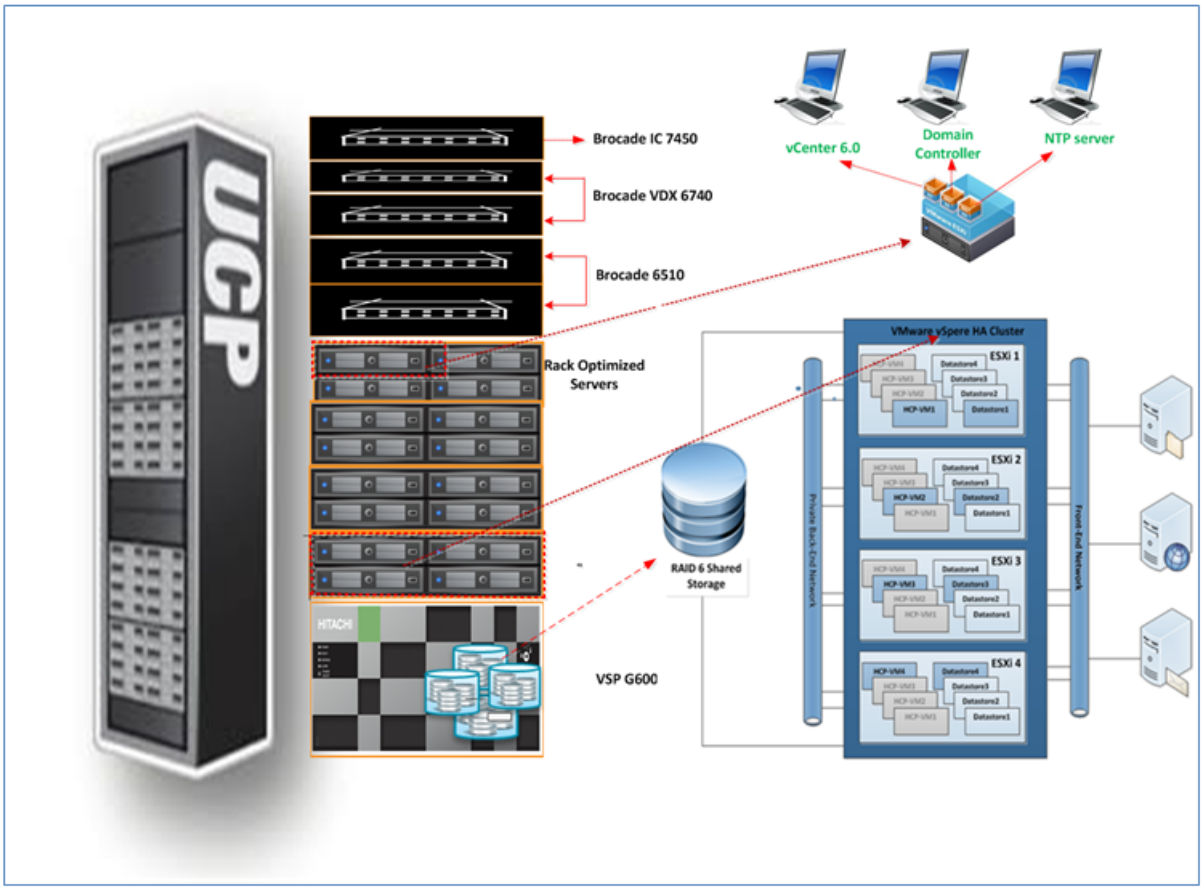
For Hitachi Content Platform: Deploying an HCP-VM System

Note — These procedures were developed in a lab environment. Many things affect production environments beyond prediction or duplication in a lab environment. Follow recommended practice by conducting proof-of-concept testing for acceptable results before implementing this solution in your production environment. Test the implementation in a non-production, isolated test environment that otherwise matches your production environment.

Architecture

Figure 1 shows the high-level architecture of the Hitachi Content Platform system hosted on Hitachi Unified Compute Platform for VMware vSphere. This solution uses Hitachi Virtual Storage Platform G600 (VSP G600) and the rack optimized server for solutions, 2U four node.

Figure 1



Deployment and Configuration

These are the key hardware and software components with the storage configuration used to deploy a Hitachi Content Platform virtual machine on Hitachi Unified Compute Platform 2000 for VMware vSphere.

Hardware Components

Table 1 has the key hardware components with the configuration used in this solution.

TABLE 1. HARDWARE FOR HITACHI UNIFIED COMPUTE PLATFORM 2000 FOR HITACHI VMWARE VSPHERE

Description	Version	Quantity
Rack Optimized Server for Solutions, 2U Four Node chassis ■ 2 power supplies	Firmware Revision: 3.30.00	1
Rack Optimized Server for Solutions, 2U Four Node compute node ■ 2 Intel Xeon E5-2680 v3 processors, 2.494 GHz ■ 256 GB memory ■ Intel 82599 10 GbE OCP dual-port card ■ Emulex LPe12002 dual-port 8 GB HBA card	BIOS Version: S2S_3A14 Emulex HBA Firmware v2.01A10 Intel driver 3.9.58.9101 Emulex HBA driver v10.4.246.0	4
Hitachi Virtual Storage Platform G600 ■ Dual controller ■ 8 × 16 Gb/sec Fibre Channel ports ■ 98 GB cache memory ■ 24 × 1.2 TB 10k RPM SAS disks ■ 12 × 3.2 TB FMD DC2 drives ■ 2 NAS modules	83-03-24-40/03	1
Brocade ICX 7450 switch ■ 24-port 1 GbE management switch	08.0.20c	1
Brocade VDX 6740 switch ■ 48-port 10 GbE switch	5.0.1d	2
Brocade 6510 switch ■ 24-port 8 GB/sec Fibre Channel	v7.4.1	2

Software Components

Table 2 has the key hardware components with the configuration used in this solution.

TABLE 2. KEY SOFTWARE

Software	Version
Hitachi Content Platform	7.2.2.6
VMware vSphere	6.0
VMware vCenter Server	6.0

Deployment Prerequisites

To deploy Hitachi Content Platform using virtual machines on Hitachi Unified Compute Platform 2000 for VMware vSphere, the following prerequisites are required:

- Hitachi Unified Compute Platform 2000 deployed and configured
  - Refer to the *UCP Deployment Guide*.
- VMware ESXi server software installed on all of the server nodes
- VMware vCenter server installed and configured. for centralized management
- Hitachi Content Platform front-end and back-end networks configured for ESXi server
- Data stores for the individual Content Platform virtual machine nodes created
- OVF file for Content Platform virtual machine

Deploy Hitachi Content Platform VM (HCP-VM) OVF template in VMware

To deploy Hitachi Content Platform on virtual machines with the OVF template, involves doing the following:

- Configure the Host Platform
- Configure the Storage
- Configure the VMware ESXi Network
- Configure the VMware ESXi Environment
- Deploy the Virtual Machine Node for Hitachi Content Platform From the OVF Template
- Configure the Virtual Machine Network for Hitachi Content Platform
- Install and Configure Hitachi Content Platform Software

Configure the Host Platform

Configure the rack optimized server for solutions, 2U four node, in Hitachi Unified Compute Platform 2000 for VMware vSphere to host the virtual machine nodes used for Hitachi Content Platform.

- Configure the virtual machines used for Hitachi Content Platform in a standard 4-node cluster configuration running on four VMware ESXi servers to meet the minimum fault tolerant requirement for Content Platform and VMware.
- Allocate each virtual machine node for Content Platform the following:
  - Eight vCPUs
  - 32 GB RAM
- Multiple virtual machine nodes for Content Platform can be installed on a VMware ESXi server, with a maximum of four nodes. This supports up to 40 virtual machines with Content Platform.

Configure the Storage

When configuring the storage, do the following:

- Configure the virtual machine nodes for Hitachi Content Platform on Hitachi Virtual Storage Platform G600 in Hitachi Unified Computer Platform 2000.
- Configure the virtual machine nodes for Content Platform on the VMware cluster for high availability.
- Connect the VMware ESXi Server run on the VSP G600 nodes to shared SAN storage with **RAID-6 (6D+2D)** protection. Each logical unit number (LUN) has two storage paths with the LUNs presented to each LUN number on each VMware ESXi host (HLUN).

The standard procedures to provision storage using Hitachi Storage Navigator (SN) to deploy virtual machines for Hitachi Content Platform on Hitachi Unified Compute Platform 2000 are as follows:

Parity Group

To create a parity group, do the following.

1. Log on to Hitachi Storage Navigator.

Figure 2

2. Under **Storage systems**, click **<VSP>**, and then click **Parity groups.** In the right pane, click **Create Parity Groups**.
3. Make the configuration settings in the left panel from Table 3.

TABLE 3. PARITY GROUP SETTINGS

For This	Set This
Drive Type/RPM/Capacity	**SSD(FMC)-/3.2TB**
RAID Level	**6(6D+2D)**
Number of parity groups	**1**
Initial Parity Group ID	**1**

4. To create the parity group, click **Add** and then click **Finish**.

   After you click **Add**, the configuration displays in the right pane.

Logical Devices (LDEVs)

Finish Parity Group before creating the logical devices (LDEVs).

To create the LDEVs, do the following.

1. In Hitachi Device Manager, go to **Parity Groups**.
2. From **Parity Group**, click **Create LDEVs**.

3. Make the configuration settings in the left panel from Table 4.

TABLE 4. LDEV SETTINGS

For This	Set This
Provisioning Type	**Basic**
LDEV Capacity	**2 TB**
Number of LDEVs	This depends on the number of virtual machine nodes for Hitachi Content Platform. Create one LDEV for each node.
LDEV Name Prefix	**HCP_POOL_VOLUME**
LDEV Name Initial Number	**1**

4. Click **Add** and then click **Finish.**

Dynamic Provisioning Pools

After finishing "Logical Devices (LDEVs)," starting on page 6, create the dynamic provisioning pools with Hitachi Dynamic Provisioning.

Table 5 lists the storage pools and configuration used for this deployment. It is recommended that you deploy all management virtual machines on Hitachi Unified Compute Platform 2000 (UCP 2000) on the same parity group. That would be parity group 1-2.

TABLE 5. DYNAMIC PROVISIONING POOLS

Pool	RAID Level	Drive Type	Parity Group	Description
UCP SAN_OS_Boot	RAID-6 (6D+2P)	10k RPM SAS	1-1	Pre-allocated for VMware ESXi boot LUNs on (UCP) 2000.
UCP Management_VMs	RAID-6 (6D+2P)	10k RPM SAS	1-2	Pre-allocated for management virtual machines on UCP 2000, including VMware vCenter Domain Controller (DC) and Network Time Protocol (NTP).
HCP_POOL	RAID-6 (6D+2P)	SSD/FMC	1-19	This pool is for creating virtual machine node data stores for Hitachi Content Platform.

To create dynamic provisioning pools with Hitachi Dynamic Provisioning, do the following.

1. Log on to Hitachi Storage Navigator.
2. Under **Storage Systems**, click the VSP storage, and then click **Pools**. On the right pane, under **Pools**, click **Create Pools.**

3. Make the configuration settings in the left panel from Table 6.

TABLE 6. DYNAMIC PROVISIONING POOL SETTINGS

For This	Set This
Pool Type	**Dyanmic Provisioning**
Pool Volume Selection	**Manual**
After clicking **Select Pool Volumes**	**HCP_POOL_VOLUME 1** through **HCP_POOL_VOLUME 4**
Pool Name	**HCP_POOL** (a different name can be used)

4. Click **Add** and then click **Finish**.
5. In Hitachi Device Manager, verify creation of the dynamic provisioning pool.

Virtual Volumes (VVols)

After finishing "Dynamic Provisioning Pools," starting on page 7, create virtual volumes (VVols).

Map the VVols to the VMware ESXi host in order to create VMFS data stores. The data stores are used when creating the virtual machine nodes for Hitachi Content Platform.

Table 7 shows the virtual volumes layout in the dynamic provisioning pool.

TABLE 7. VIRTUAL VOLUMES LAYOUT FOR HCP_POOL

LDEV Name (VVol Name)	LDEV Size (VVol size)	Host Group	Description
HCP_Node1_Datastore_Vol1	1.2 TB	C4_B1_HBA1_1	Configured as VMFS data store on the Chassis 4 ESXi server 1 to host the virtual machine cluster node 1
HCP_Node2_Datastore_Vol1	1.2 TB	C4_B2_HBA1_1	Configured as VMFS data store on the Chassis 4 ESXi server 2 to host the virtual machine cluster node 2
HCP_Node3_Datastore_Vol1	1.2 TB	C4_B3_HBA1_1	Configured as VMFS data store on the Chassis 4 ESXi server 3 to host the virtual machine cluster node 3
HCP_Node4_Datastore_Vol1	1.2 TB	C4_B4_HBA1_1	Configured as VMFS data store on the Chassis 4 ESXi server 4 to host the virtual machine cluster node 4

To create virtual volumes, do the following.

1. From Hitachi Device Manager, under **Storage Systems**, click **Pools**, and then click the HCP_POOL. On the right pane, click the **Virtual Volumes** tab and then click **Create LDEVs**.

2. Make the settings for the virtual volumes:
    (1) Click **Select Pool** to select the dynamic provisioning pool, typically **HCP_Pool**.
    (2) In the **LDEV Capacity** text box, type the size of the LDEV. Also, click the units from the list, such as **TB** or **MB**.
    (3) In **Number of LDEVs**, type the number of LDEVs to create.
    (4) For **LDEV Name**, type the **Prefix** and **Initial Number**.
    (5) Click **Add** and then click **Finish**.
3. Verify creation of the LDEV on the **Pools** page under the **Pool** name and **Virtual Volumes** tab.

Host Group

Repeat this procedure to create a host group of each node for Hitachi Unified Compute Platform in chassis 4.

To create a host group, do the following.

1. In Hitachi Device Manager, on the **Ports/Host Groups/iSCSI Targets** tab, click **Create Host Groups.**
2. Provide the following information for the new host group:
    (1) In the **Host Group Name** text box, type the name of the host group.
    (2) From the **Resource Name** list: click **meta_resource**.
    (3) From the **Host Mode** list, click **01 [VMware]**.
3. Add host information for the VMware ESXi host server node.
    (1) Click **Add New Host**.
    (2) On the **Add New Host** dialog box, provide the HBA WWN and Host Name for the VMware ESXi host node.
    (3) Click the **Port** associated with the host group and then click **Add**.
    (4) Click **Next** and then click **Finish**.
    (5) Verify the new host group from **Ports/Host Groups/iSCSI Targets-**on the **Hosts** tab.

Repeat this procedure to add the host group for each Unified Compute Platform node in chassis 4.

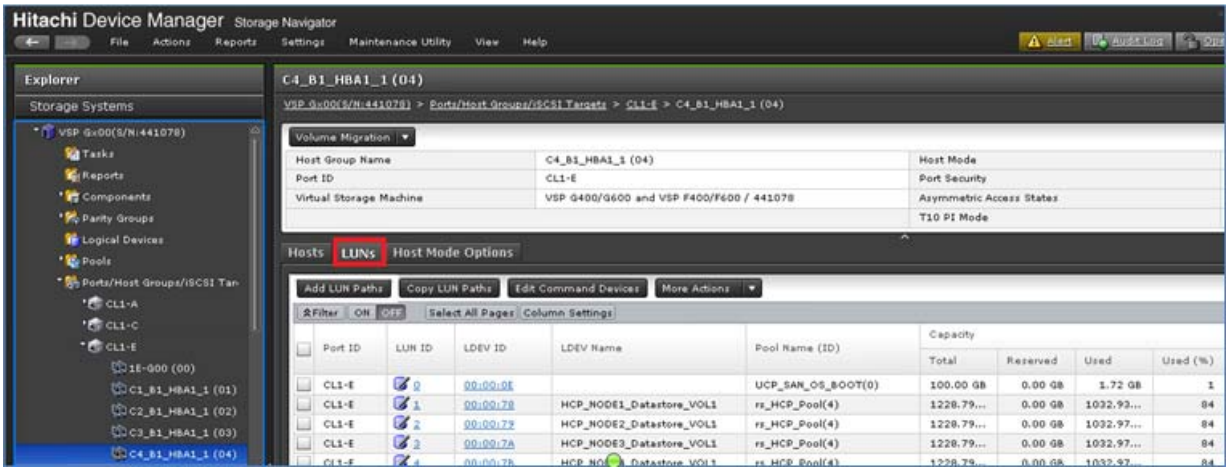
Virtual Volume Allocation to a Host Group

To allocate VVols to a host group, do the following.

1. In Hitachi Device Manager, under **Storage Sytems**, click **Ports/Host Groups/iSCSI Targets** and then click the host group.
2. Click the **LUNs** tab, and then click **ADD LUN Paths**.
3. Select (highlight) the LDEV created previously. Then click **Add** and click **Finish**.

4. To verify that the LDEV has been added to the host group, click the **LUNs** tab.

Figure 3



Note — Add the LUN paths for the VVols to all the host groups of the Unified Compute Platform nodes. Add the LUN paths in the same order (that is, LUN 1, 2, 3, 4) to maintain the same HLUN number.

VMware ESXi Datastore

In this deployment, create a separate datastore using the allocated VVols for each virtual machine node for Hitachi Content Platform.

Table 8 shows the datastore volume names with the volume to host mapping in the storage.

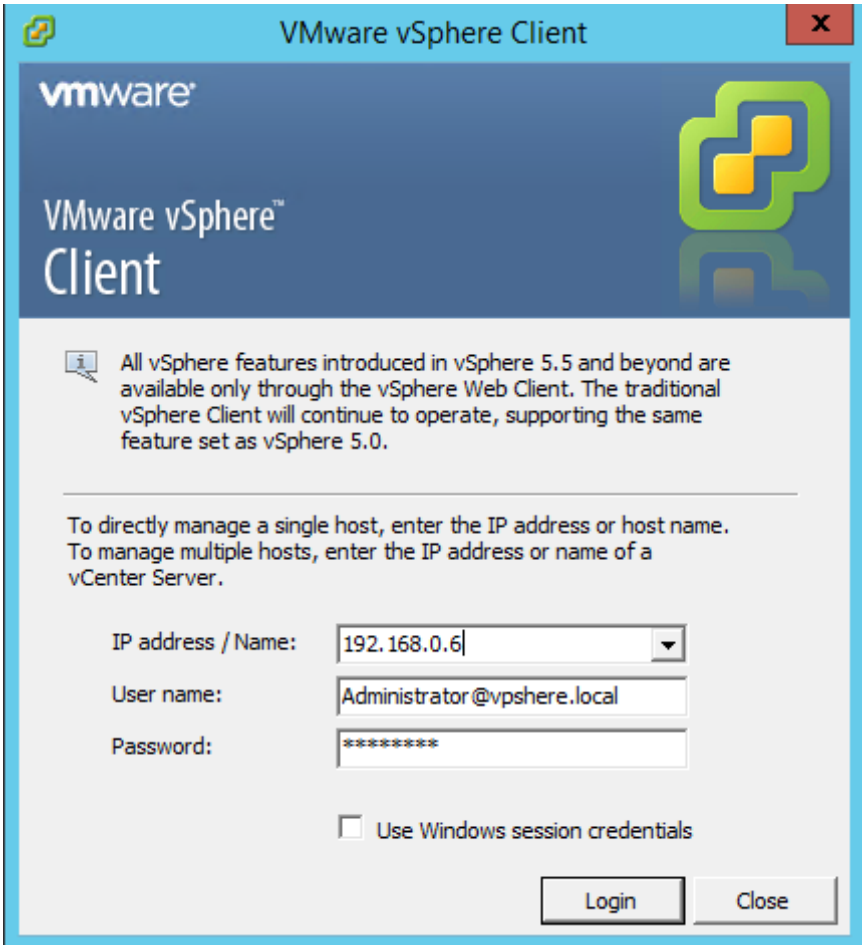
TABLE 8. DATASTORE TO VVOL MAPPING

VMware ESX Datastore Name	Storage VVol Name	Storage Host Group	Description
HCP_Node1_Datastore	HCP_Node1_Datastore_Vol1	C4_B1_HBA1_1	Configured VMFS datastore on Chassis 4 ESXi server 1 to the virtual machine host for HCP cluster node 1
HCP_Node2_Datastore	HCP_Node2_Datastore_Vol1	C4_B2_HBA1_1	Configured VMFS datastore on Chassis 4 ESXi server 2 to the virtual machine host for HCP cluster node 2
HCP_Node3_Datastore	HCP_Node3_Datastore_Vol1	C4_B3_HBA1_1	Configured VMFS datastore on Chassis 4 ESXi server 3 to the virtual machine host for HCP cluster node 3
HCP_Node4_Datastore	HCP_Node4_Datastore_Vol1	C4_B4_HBA1_1	Configured VMFS datastore on Chassis 4 ESXi server 4 to the virtual machine host for HCP cluster node 4

To configure the VMware ESXi datastore, do the following.

1. Log on to VMware vCenter server using the VMware vSphere client.

Figure 4



2. In vCenter, select (highlight) the ESXi server and then click the **Configuration** tab. Under **Hardware**, click **Storage Adapters** to open that pane. In the **Storage Adapters** pane, select (highlight) the Fibre Channel adapter with the WWN assigned to the host group. This ensures that the LDEV is visible on the ESXi server.

   After selecting the Fibre Channel adapter, a series of commands display for the **Storage Adapter** pane.

3. For the **Datastore** pane, click **Add Storage.**
4. For **Storage Type**, click **Disk/LUN**, and then click **Next**.
5. Select the LUN, and then click **Next**.
6. Verify the current disk layout, and then click **Next**.
7. Type the datastore name, and then click **Next**.
8. Click the maximum available space, click **Next,** and then click **Finish**.
9. Verify the datastore under the **Hardware** pane by clicking the **Configuration** tab and then clicking the **Storage** tab.

Configure the VMware ESXi Network

When you configure the VMware ESXi network, take the following into account:

- The virtual machine system for Hitachi Content Platform requires the following:
  - A front-end network for system management and client access
  - A back-end network for inter-node communication and data transfer between Hitachi Content Platform nodes.
- Configure network connectivity for the virtual machine nodes for Hitachi Content Platform using vmNICs and vSwitches as follows:
  - Set up a separate vmNIC for front-end and back-end network connectivity using a 10 GbE physical network port.
  - Connect both front-end and back-end uplink network ports to the same Brocade VDX7640 network switch.
  - Isolate the front-end (public) network and the back-end (private) network using VLAN tagging.

Configure the VMware ESXi Environment

This covers some of the environment configuration needed to deploy the virtual machine system for Hitachi Content Platform.

Network Time Protocol (NTP)

The VMware ESXi servers for the virtual machine nodes for Hitachi Content Platform must have network time protocol (NTP) enabled. Enable NTP from the VMware vSphere client.

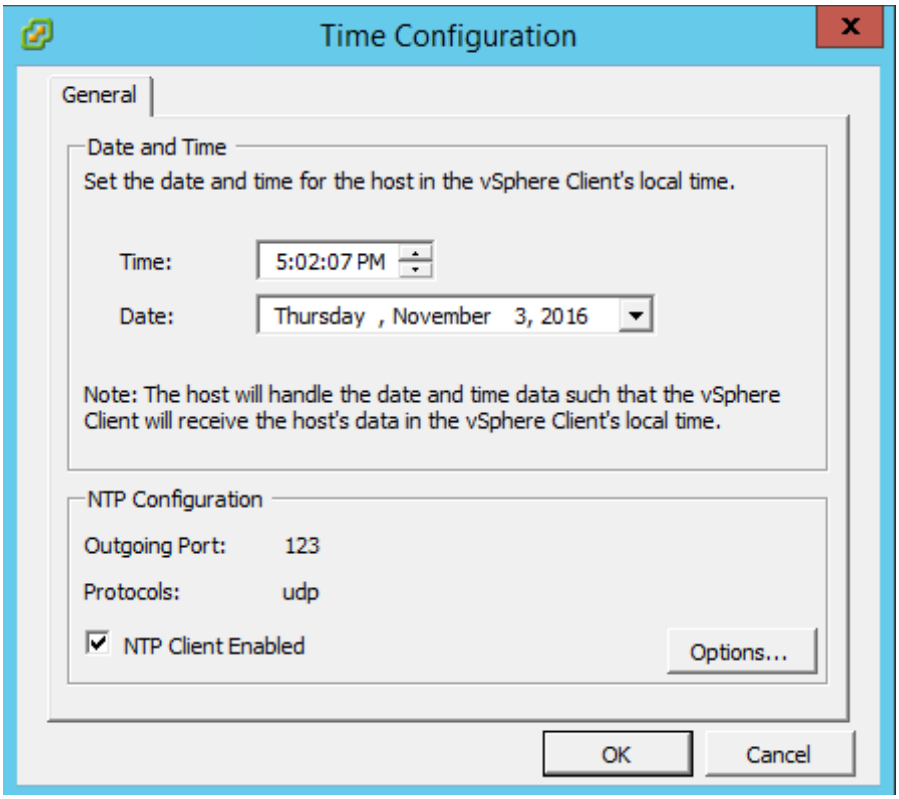
To configure VMware ESXi hosts for NTP, do the following.

1. Log on to the VMware vCenter server using the VMware vSphere client.
2. In the left navigation window, click the ESXi host to enable NTP.
3. In the right window, click the **Configuration** tab.
4. Under Software in the right window, click **Time Configuration**. The **Time Configuration** dialog box opens.
5. In the upper right corner of the right window, click **Properties**. The **Time Configuration** dialog box opens.

6. Make these settings on the **Time Configuration** window.

   (1) In the **Time Configuration** window, select the **NTP Client Enabled** check box.

Figure 5

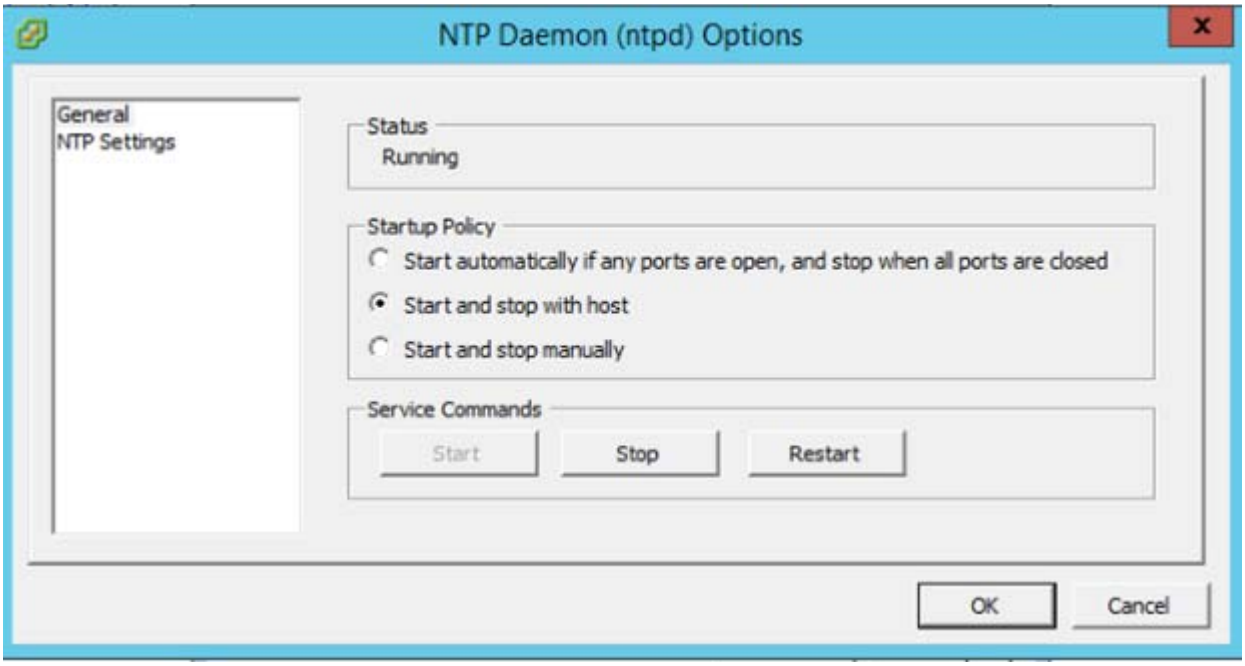


   (2) Click **Options.** The **NTP Daemon (ntpd) Options** window opens.

7. Make these settings on the **NTP Daemon (ntpd) Options** window.

   (1) In the **NTP Daemon (ntpd) Options** window, click the **Start and stop with host** option.

Figure 6

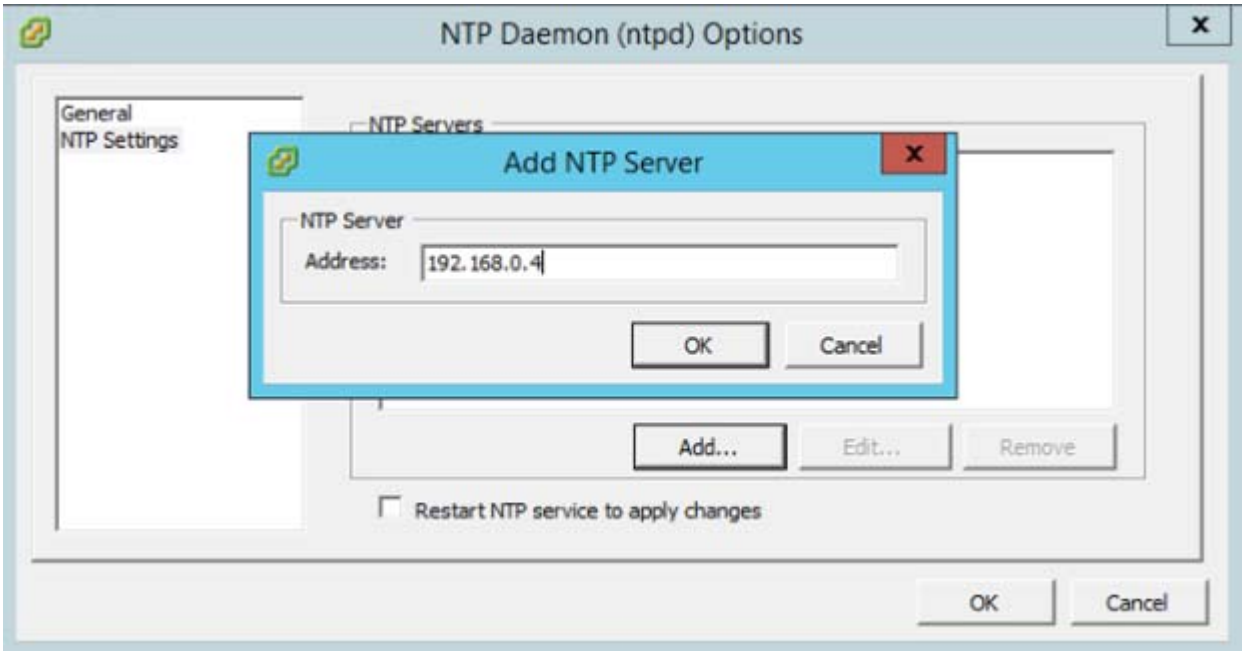


(2) In the left pane, click **NTP Settings**.

(3) In the **NTP Servers** area of the **NTP Daemon (ntpd) Options** window, click **Add** and enter the IP address of the time server. Click **OK.**

(4) Select the **Restart NTP service to apply changes** check box. Click **OK.**

Figure 7



VMware vSphere High Avaiability (HA) Cluster for Virtual Machine Nodes

To optimize the availability of HCP VM nodes, the vSphere High Availability (HA) cluster is set up. To create VSphere HA, it requires the following:

- "Create a Datacenter " on page 15
- "Create VMware vSphere Cluster" on page 15

Create a Datacenter

To create a datacenter, do the following.

1. Log on the VMware vCenter server using the client.
2. On the **Getting Started** tab, click **Create a datacenter**.
3. In the left pane, rename the **Datacenter** object name. For example, rename it as follows: `HCP-VM_DataCenter`

Create VMware vSphere Cluster

To create a VMware vSphere cluster, do the following.

1. Select the datacenter name, click **Getting Started** tab.
2. Click **Create a cluster**. This launches the **New Cluster Wizard**.
3. Make the settings on **Cluster Features**.
   (1) In the **Name** text box, type a name for the cluster. An example name is `hcp-vm-cluster`.
   (2) Select the **Turn on vSphere HA** check box.
   (3) Click **Next**.
4. Make the settings on **vSphere HA**.
   (1) Select the **Enable Host Monitoring** check box.
   (2) Under **Admission Control**, click the **Enable: Disallow VM power on operations that violate availability constraints** option.
   (3) Under **Admission Control Policy**, click the **Host failures the cluster tolerates** option and set the value to **1**.
   (4) Click **Next.**
   (5) For **VM restart priority**, click **Medium**.
   (6) Under **Host Isolation response,** click **Leave powered on**.
   (7) Click **Next**.
   (8) For **VM Monitoring**, click **Disabled**.
   (9) For **Monitoring Sensitivity,** pointer to **High**.
   (10) Click **Next**.
5. Make the settings on **VMware EVC**.
   (1) Click **Disable EVC**.
   (2) Click **Next**.

6. Make the settings on **VMware Swapfile Location**.
   (1) Click **Store the swap file in the same directory as the virtual machine** (**recommended**).
   (2) Click **Next**.
7. Review the selected options, and then click **Finish**.
8. Verify creation of the VMware vSphere cluster under the datacenter.

VMware ESXi Servers Addition to the Cluster

Once creating the VMware vSphere High Availability cluster, add all the VMware ESXi servers with virtual machine nodes for Hitachi Content Platform to the cluster.

Repeat this procedure to add all four VMware ESXi servers to the VMware vSphere High Availability cluster.

To add a ESXi host to the vSphere High Availability cluster, do the following.

1. On the VMware vSphere Client home page, select the cluster on the left pane.
2. Click the **Getting Started** tab, and then click **Add a host**. This starts the Add Host wizard.
3. Make the settings on **Specify Connection Settings**.
   (1) Under **Connection**, type the IP address of the **Host.**
   (2) Under **Authorization,** type the **Username** and **Password**.
   (3) Click **Next**.
4. On **Specify Connection Settings**, review the host information and then click **Next**.
5. Make the settings on **Assign License**.
   (1) Enter the license information for the ESXi host, click **Nex**t
   (2) Select **Enable lock down mode**, click **Next**.
   (3) Review the options, click **Finish.**

Repeat this procedure to add all four VMware ESXi servers to the VMware vSphere High Availability cluster.

Deploy the Virtual Machine Node for Hitachi Content Platform From the OVF Template

Deploy virtual machines for Hitachi Contents Platform using a raw device mapping (RDM) or virtual machine disk (VMDK) configuration. This guide shows using VMDK to deploy the virtual machines from the OVF distribution template.

Repeat this procedure for all four virtual machines hosting Content Platform nodes, each time selecting a different VMware ESX server. Do one node and one server at a time.

Use the corresponding server for the server node. That is, use the first ESXi server for the first node, the second ESXi server for the second node, and so forth.

Note —The VMDK OVF deployment can take one hour or more to complete.

To deploy the virtual machines for Hitachi Content Platform using OVF, do the following.

1. Log on to VMware vCenter server using the VMware vSphere client.
2. Select the corresponding ESXi server for the corresponding Hitachi Content Platform node in the left pane. Then, from the **File** menu, click **Deploy OVF Template**. This opens the **Deploy OVF Template** window, with **Source** selected in the left pane.

Note — Make sure you select (highlight) the corresponding target ESXi server before deploying the OVF file.

3. Make the settings on **Source**.
   (1) To complete the **Deploy from a file or URL** text box, click **Browse**.
   (2) Select **HS421_7.2.2.6.ovf**. This was extracted from the image file (HS421_7.2.2.6.iso).
   (3) Click **Next**.
4. Do the following on **OVF Template Details**.
   (1) Verify these OVF template details:
   - The product name as **HCPVM**
   - The size on disk as **1.0 TB (thick provisioned)**

   (2) Click **Next**.
5. Make the settings on **Name and Location**.
   (1) Type a name for the virtual machine node for Hitachi Content Platform. For example, type this for the first node: `hcp-vm_cluster1_node1`
   (2) Click **Next.**
6. Make the settings on **Storage**.
   (1) Select data store added that corresponds to the VMware ESXi host for this virtual machine node (1, 2, 3, or 4).
   (2) Click **Next.**
7. Make the settings on **Disk Format**.
   (1) Click the **Thick Provision Eager Zeroed** option.
   (2) Click **Next**.

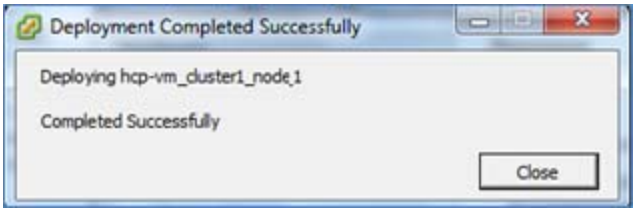
   This executes the disk format.
8. Make the settings on **Network Mapping**.
   (1) For the **BuildVMDistNetwork** source network, from the **Destination Networks** list, click **HCP_Front-endNetwork.**
   (2) For the **Virtual back-endNetwork** source network, from the **Destination Networks** list, click **HCP_Back-endNetwork**.
   (3) Click **Next.**
   (4) Verify the **Destination Networks** show the following network settings:
   - BuildVMDistNetwork — HCP_Front-endNetwork
   - Virtaul BackendNetwork — HCP_Back-endNetwork

   (5) Click **Next.**

9. Do the following on **Ready to Complete**.
   (1) Verify the information in the **Deployment settings** area matches what was previously entered.
   (2) If any changes are needed, click **Back** to make them.
   (3) If ready to begin the OVF deployment, click **Finish**.

   Once the OVF deployment completes, you will see a message that deployment completed successfully (Figure 8).

Figure 8



Repeat this procedure for all four virtual machine nodes for Hitachi Content Platform for each VMware ESXi.

Configure the Virtual Machine Network for Hitachi Content Platform

After deploying the OVF, the following steps are required for all HCP-VM nodes in the vSphere cluster:

- Turn on the virtual machine node for Hitachi Content Platform.
- Configure the network setting.

Repeat this procedure to set the network configuration settings for each Hitachi Content Platform node in order.

To configure the virtual machine network for Hitachi Content Platform, do the following.

1. Log on to the VMware vCenter server using the VMware vSphere client.
2. In the left pane, right-click the virtual machine node for Hitachi Content Platform and click **Open Console**. The first node would be this: **hcp-vm-cluster1_node1**

   A command prompt window opens for the node.
3. Log on to the virtual machine node console with the default credentials:

   Username: `install`

   Password: `Chang3Me!`

   After the first log on, you have to change the password.
4. Enter the new password.
5. Log on again, this time using your new password,
6. To configure the HCP network, type this: 2

7. From the HCP VM Network Configuration Menu, do these procedures to enter the network settings:
   (1) Setup [hcp_system] IPv4 Configuration
   (2) Setup [hcp_system] IPv6 Configuration
   (3) Setup [hcp_system] IPv6 Secondary Configuration
   (4) Configure [hcp_system] VLAN ID
   (5) Setup [hcp_backend] IPv4 Configuration

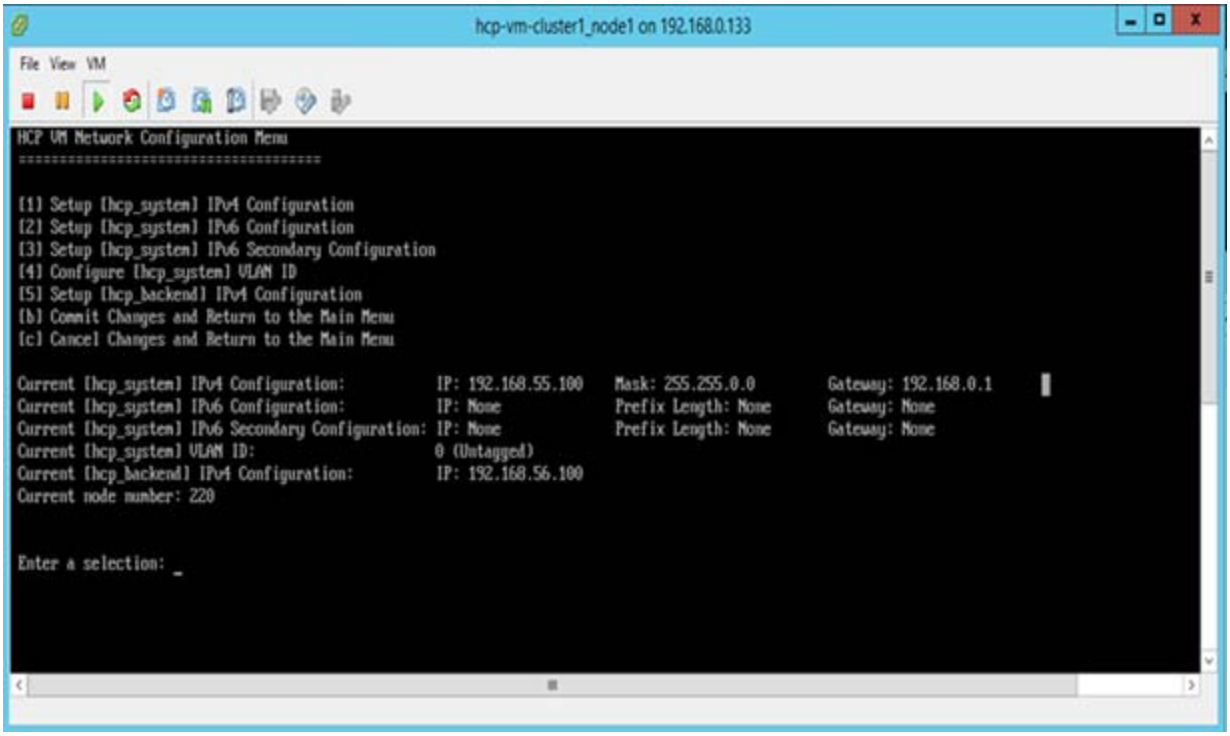
   These are the IPv4 configuration settings used for the HCP system example in Figure 9 on page 19.

   Front-end IP: 192.168.55.100

   Gateway address: 192.168.55.1

   Back-end IP: 192.168.56.100

Figure 9



8. If the information is correct after review, commit the changes by typing the following: b
9. Reboot the virtual machine node by pressing Enter.
10. Once the virtual machine node reboot completes, log on to the node.

    Username: `install`

    Password: [new password set in this procedure]

Repeat this network configuration procedure for each Hitachi Content Platform node.

Install and Configure Hitachi Content Platform Software

These are instructions to do the following:

- “Install Hitachi Content Platform” on page 20
- “Open the User Interface for Hitachi Content Platform” on page 31

Install Hitachi Content Platform

Perform the Hitachi Content Platform software installation from the highest numbered node (last octet of the IPv4 address) for Content Platform. In this example, these are the virtual machine nodes and IPv4 address.

- Node 1 — 192.68.55.**100**
- Node 2 — 192.68.55.**101**
- Node 3 — 192.68.55.**102**
- Node 4 — 192.68.55.**103**

Virtual machine node 4 for Content Platform is the highest numbered node, with the last octet of 103.

To install the Hitachi Content Platform software, do the following.

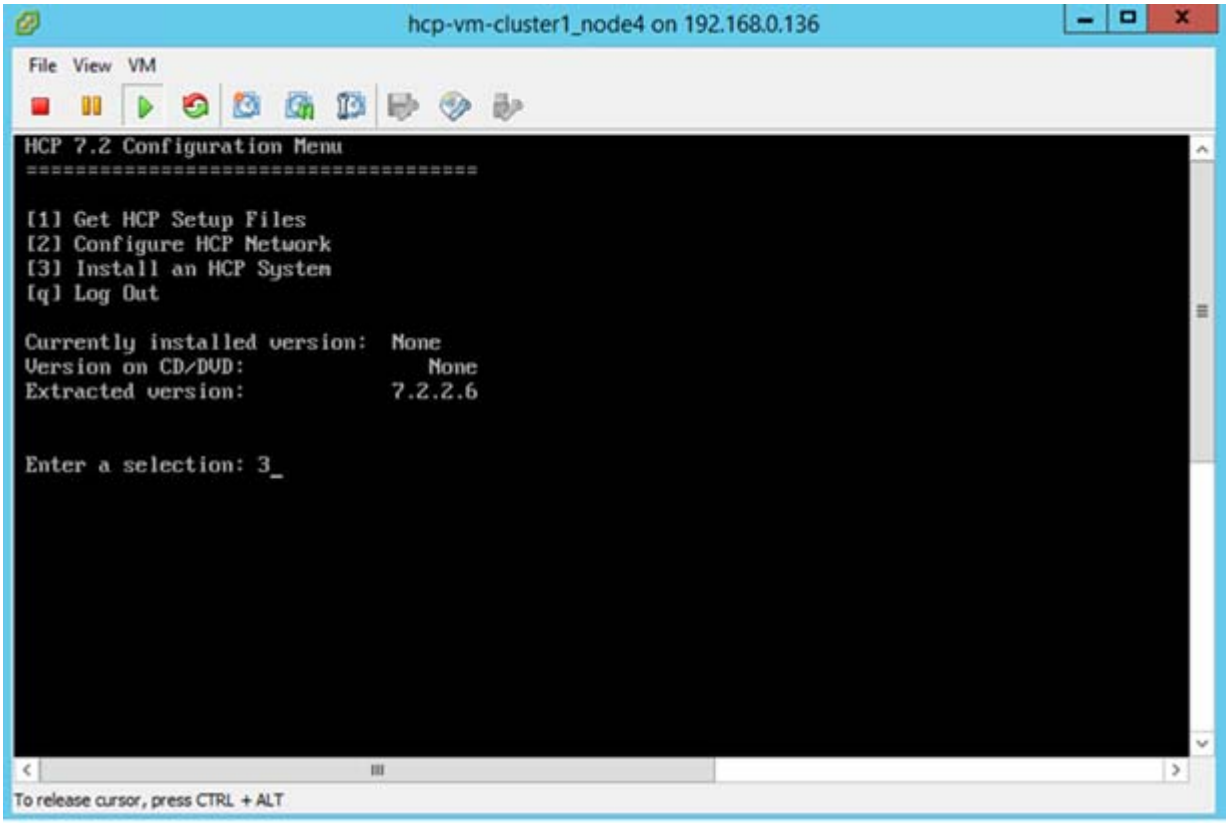
1. Log on to the VMware vCenter server using the VMware vSphere client.
2. On the left panel, select the virtual machine node for Content Platform with highest numbered final octet. (In this example, that is192.168.55.103, hcp-vm-cluster1_node4.) Right-click the node and then click **Open Console**.
3. Log on with the user credentials:

   Username: `install`

   Password: [new password set in “Configure the Virtual Machine Network for Hitachi Content Platform” on page 18]

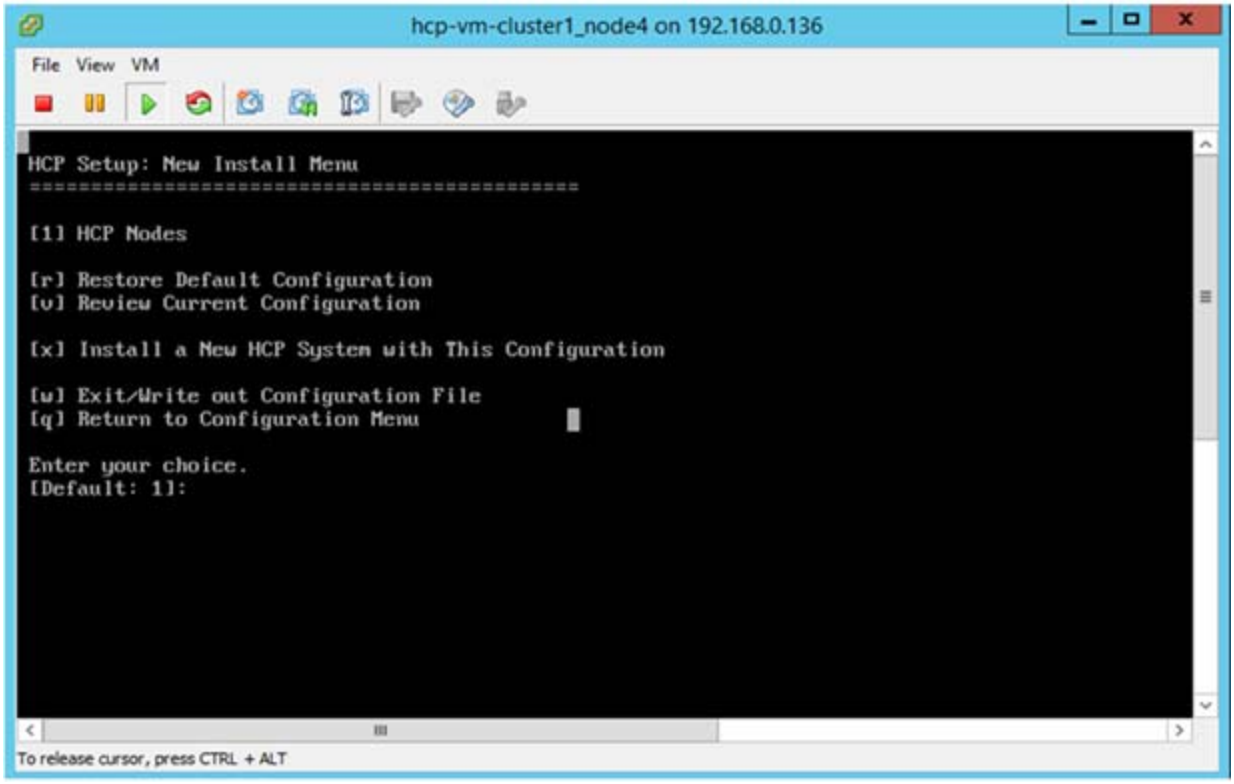
4. To install the Hitachi Content Platform system, type this and press Enter: 3

Figure 10



5. From the **HCP Setup: New Install Menu**, identify the nodes in the HCP system by typing this: `1`

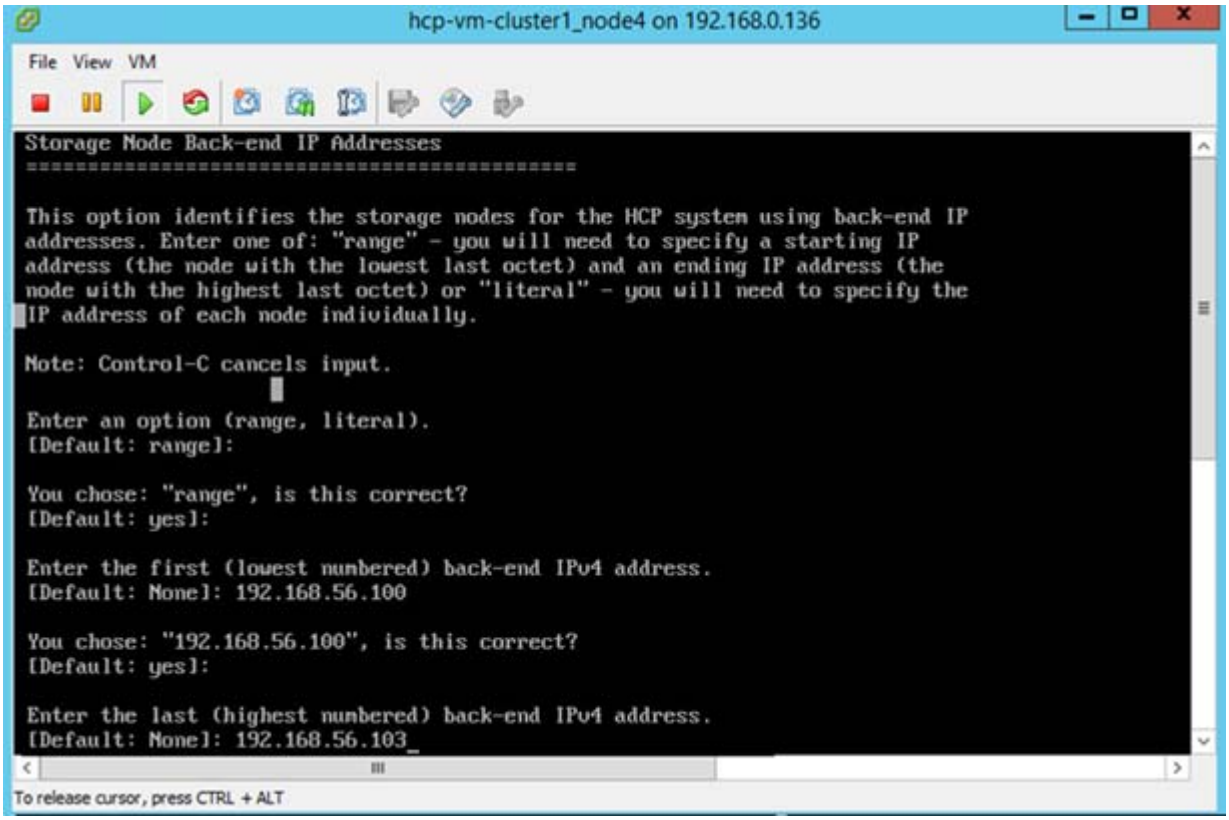
Figure 11



6. From the **HCP Nodes menu**, choose the storage node back-end IP addresses by typing the following: `1`
7. Set the storage node back-end IP addresses.
   (1) Choose the default option by typing this: `range`
   (2) Confirm your option by typing this: `yes`
   (3) Type the first (lowest) back-end IPv4 address, which is for the first virtual machine node (192.168.56.100) and press Enter.

(4) Type the last (highest) back-end IPv4 address, which is for the last virtual machine node (192.168.56.103) and press Enter.

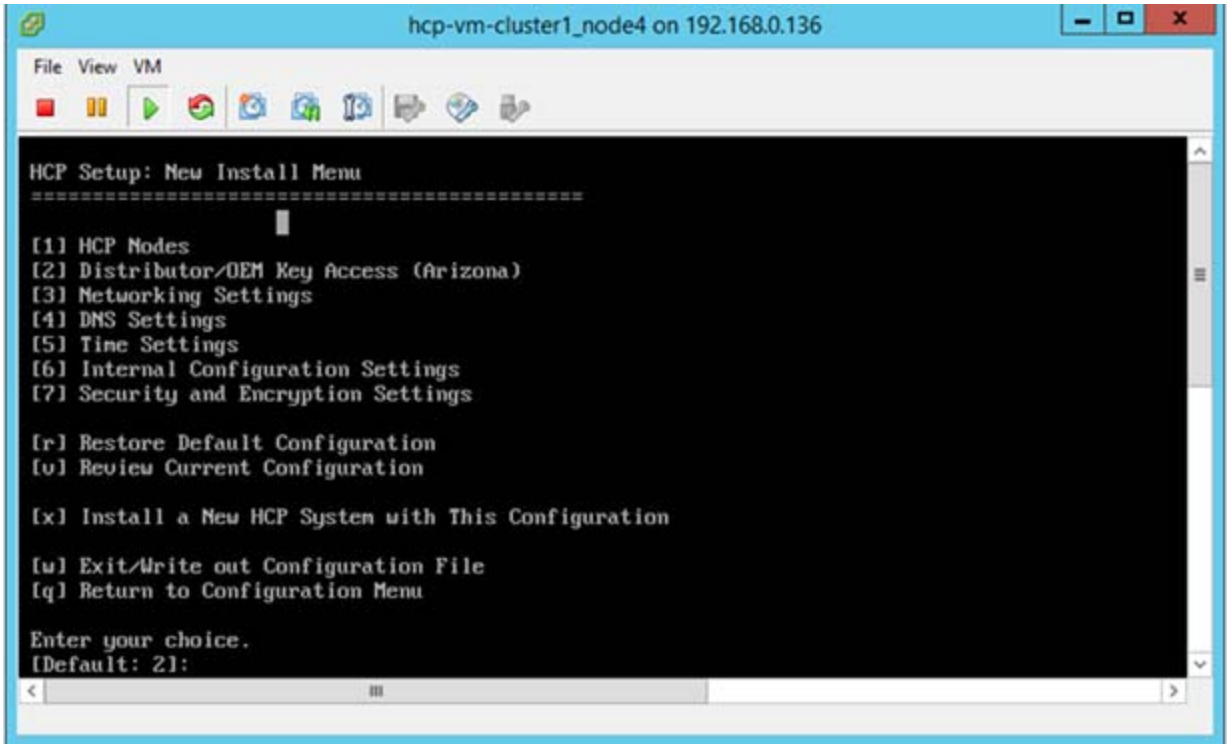
Figure 12



(5) Verify the back-end IPv4 addresses. Then confirm by pressing Enter or typing this: yes

(6) From the **HCP Nodes menu**, to return to **HCP Setup: New Install** menu, type the following: b.

Figure 13



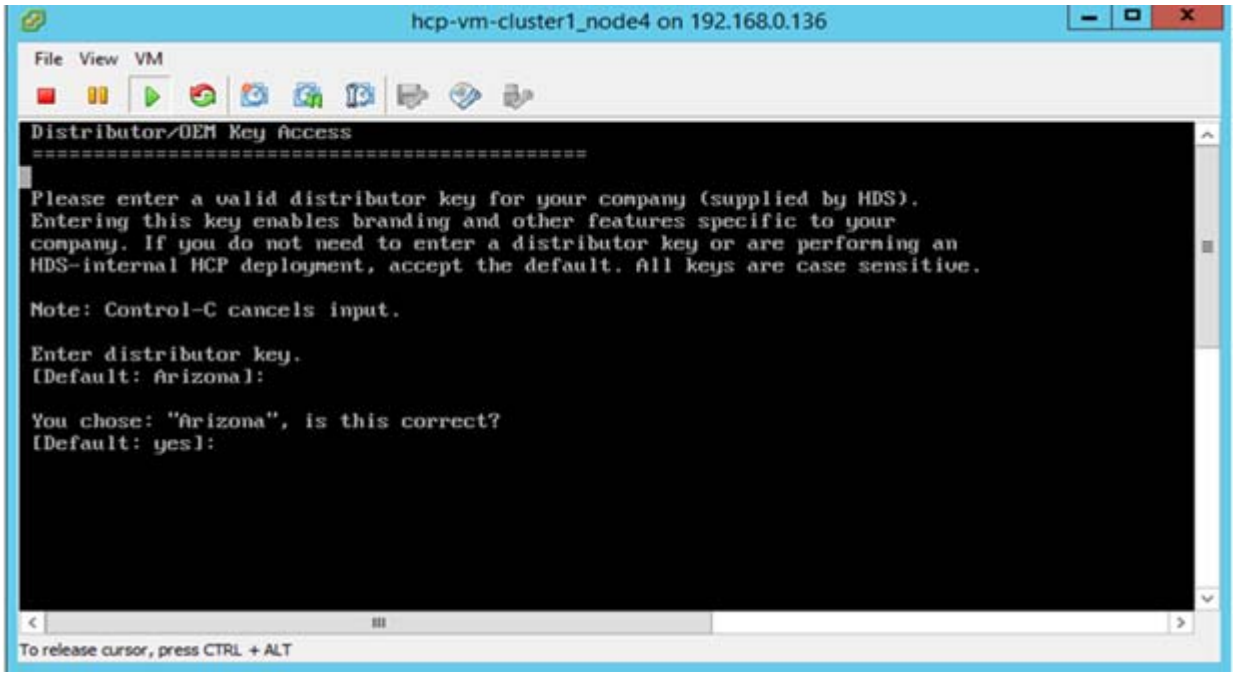
8. Install the distributor/OEM key access.

   (1) From **HCP Setup: New Install menu**, enter the following: 2

   (2) To confirm your choice, type the following: y

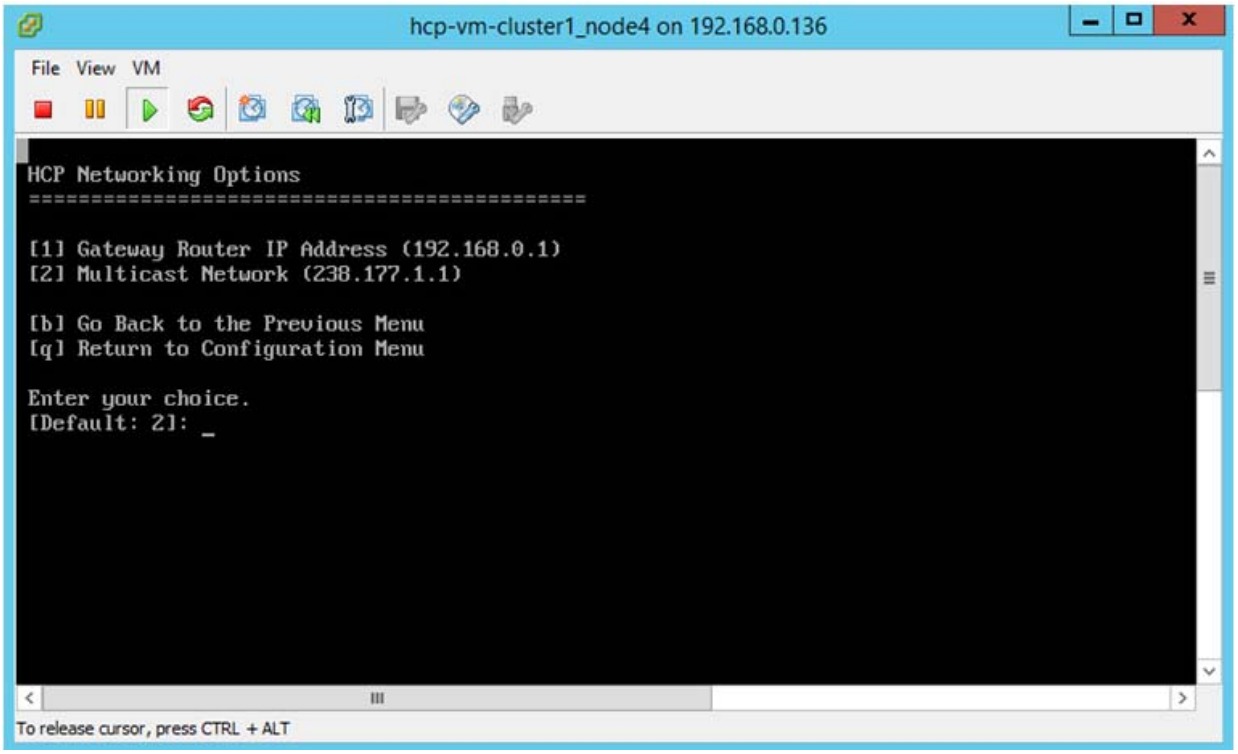
   The **Distributor/OEM Key Access** menu opens.

Figure 14



9. Set the networking options.
   (1) To open the **HCP Networking Options** menu, type the following: 3
   (2) To set the gateway router IP address for the virtual machine nodes, type the following: 1
   (3) To use the default multicast network, type the following: 2
   (4) To return to the **HCP Setup: New Install Menu**, type the following: b

Figure 15



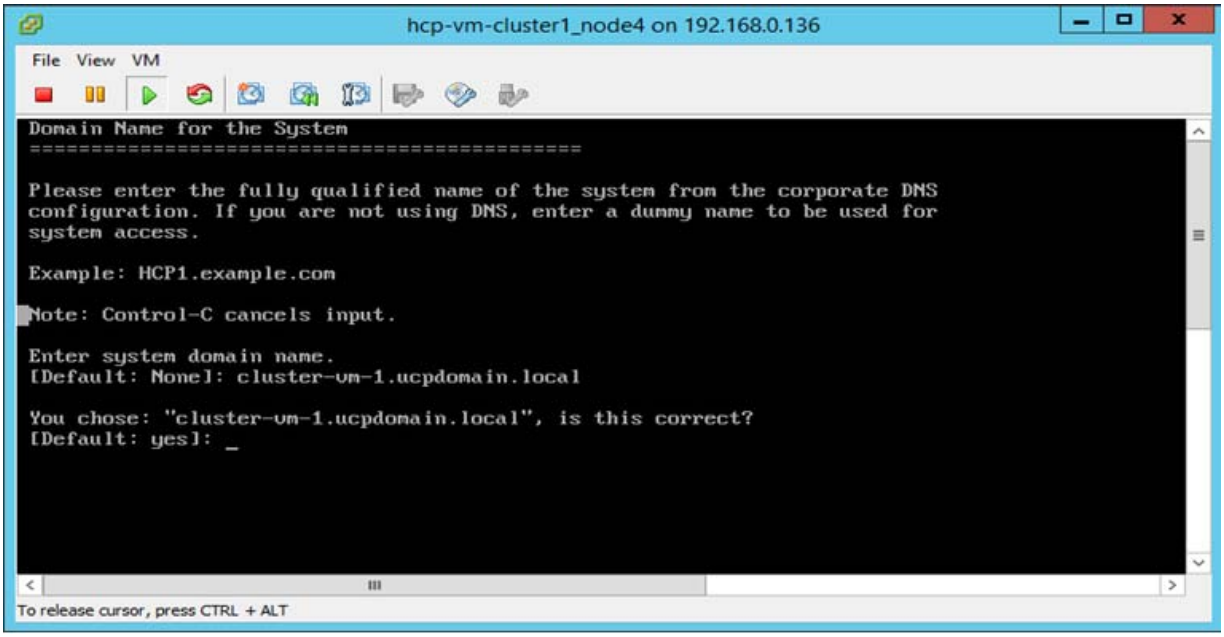
10. Set the domain name for the system.
    (1) To open the **HCP DNS Options** menu, type the following: 4
    (2) If the DNS is disabled, do the following:
        i. Type the following: 1
        ii. To enable the DNS, type the following: yes

(3) To set the domain name, do the following:

iii. Type the following: 2

iv. Type the valid domain name in your environment for the virtual machine nodes. The default domain name is **cluster-vm-1.ucpdomain.local**.

Figure 16



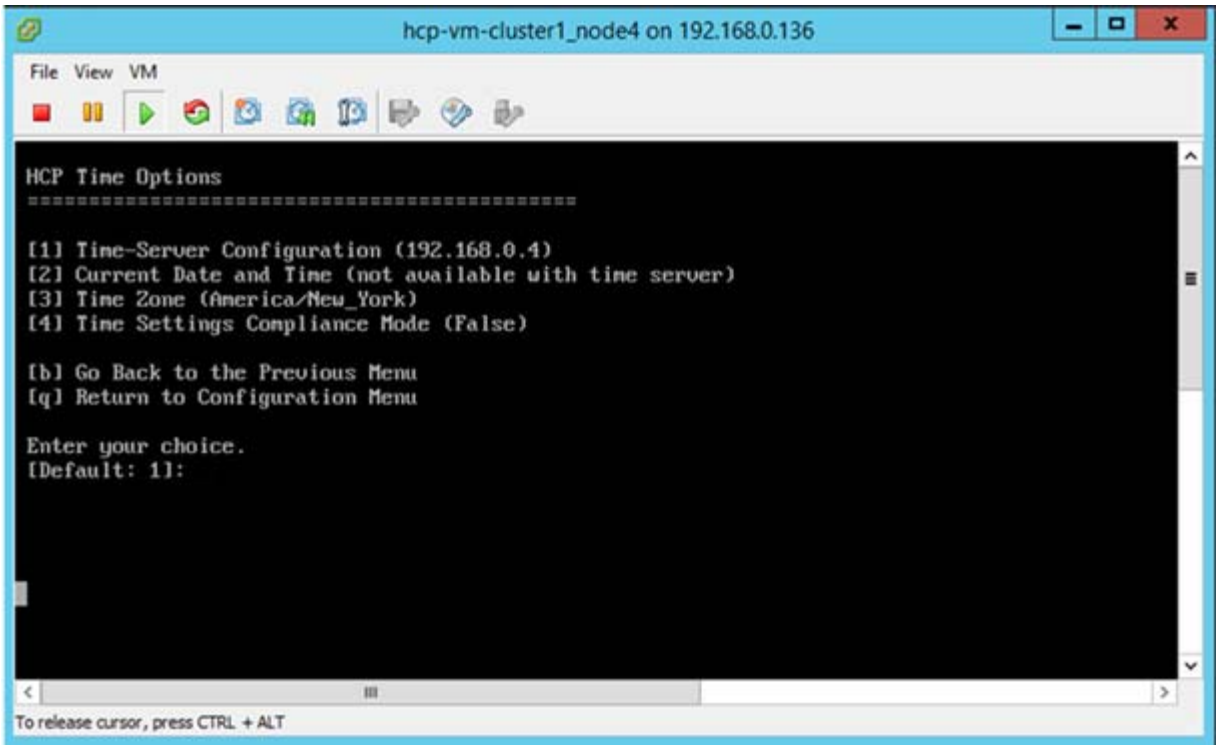
(4) To enter the DNS server IP address, type the following: 3

(5) Type the DNS server IP address.

(6) To return to the **HCP Setup: New Install Menu**, type the following: b

11. Set the time settings for the system.
    (1) To open the HCP Time Options menu, type the following: 5
    (2) To configure the time server, type the following: 1

Figure 17

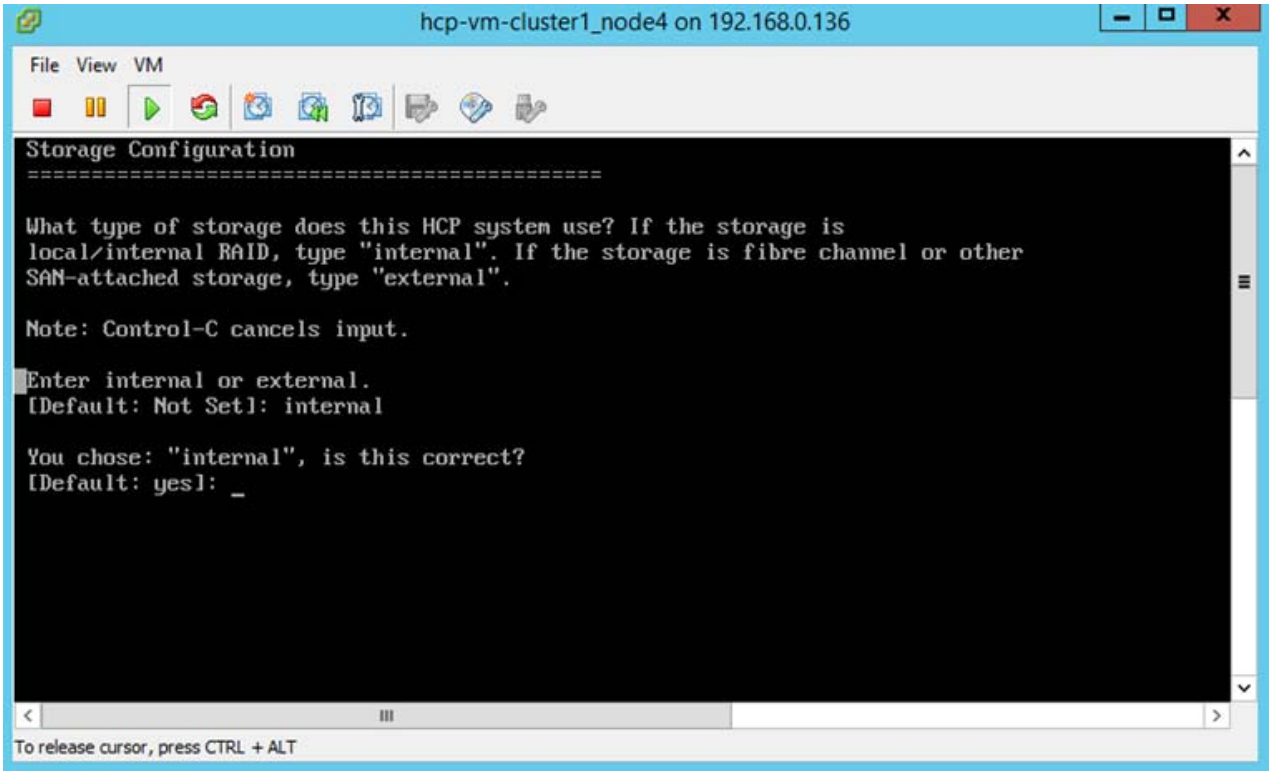


    (3) Specify whether to use an internal or external server.
        - If using an internal server, type `internal` along with current date and time.
        - If using an external server, type the server IP address.

          If you choose using an external time server, all virtual machine nodes for Hitachi Content Platform must have front-end connectivity to the IP server.
    (4) For the time zone, type 3 and then specify the time zone. An example time zone is **America/Los_Angeles**.
    (5) If necessary to set the compliance mode to false (default), type 4 and then type the following: `False`
    (6) To return to the **HCP Setup: New Install** menu, type the following: b

12. Set the internal configuration settings for the system.
    (1) To set the internal configuration settings, type the following: 6
    (2) From the **Internal Configuration Settings** menu, type the following: 1
    (3) To choose internal, press Enter.

Figure 18



    (4) To specify **HCP System serial Number3**, type the following: 2

Note — The Hitachi Content Platform system serial number is required to license the system. Omitting the serial number causes the system to report that you are in violation of your license agreement.

    (5) Specify whether to enable replication.
        - To enable replication, type the following: yes
        - To disable replication, type the following: no
    (6) To use the default customer service contact information, type the following: 4
    (7) Enter **b** to return to the **HCP Setup: New Install Menu** menu
13. Set the encryption settings for the system.

    To enable encryption, contact your Hitachi Data System representative first.

    - When you are ready to set the encryption settings, type the following: 7

      Your Hitachi Data Systems representative will have the information to complete this.

14. Review the current configuration before installing Hitachi Content Platform.

    (1) To review the current configuration, type the following: v

    (2) Review the settings before proceeding. Table 9 shows typical values. Based on the settings you made, some of these may be different.

TABLE 9. TYPICAL VALUES FOR SETTINGS REVIEW

Setting	Sample Value
DNS Server(s)	192.168.0.5
Allow Data at Rest Encryption	No
Multicast Network	238.177.1.1
Storage Configuration	Internal
Current Date and Time	None
Domain Name for the System	Cluster-vm-1.ucpdomain.local
Encrypt Data at Rest on Primary Storage	No
Allow Data in Flight Encryption/SSL	No
Time Settings in Compliance Mode	No
HCP System Serial Number	(varies)
Blade Servers	No
Distributor/OEM Key Access	Arizona
MQE Index-Only Volumes	No
Time Server(s)	(depends on the setting made)
Gateway Router Secondary IPv6 Address	None
Gateway Router IPv6 Address	None
Enable DNS	Yes
Chassis	None
Enable Replication on This System	No
Spindown Volumes	No
HCP Storage Nodes	4 ■ 192.168.56.100 ■ 192.168.56.101 ■ 192.168.56.102 ■ 192.168.56.103

15. Install Hitachi Content Platform.

    (1) To install Hitachi Content Platform, from the **HCP Setup: New Install** menu**,** type the following: x

    (2) To confirm that the configuration is correct, type the following: y

    This starts the Hitachi Content Platform installation.

The Hitachi Content Platform installation process includes system pre-checks, HCP packages installation, and rebooting the virtual machine nodes for Hitachi Content Platform. This installation takes minutes to an hour, depending on the volume size.

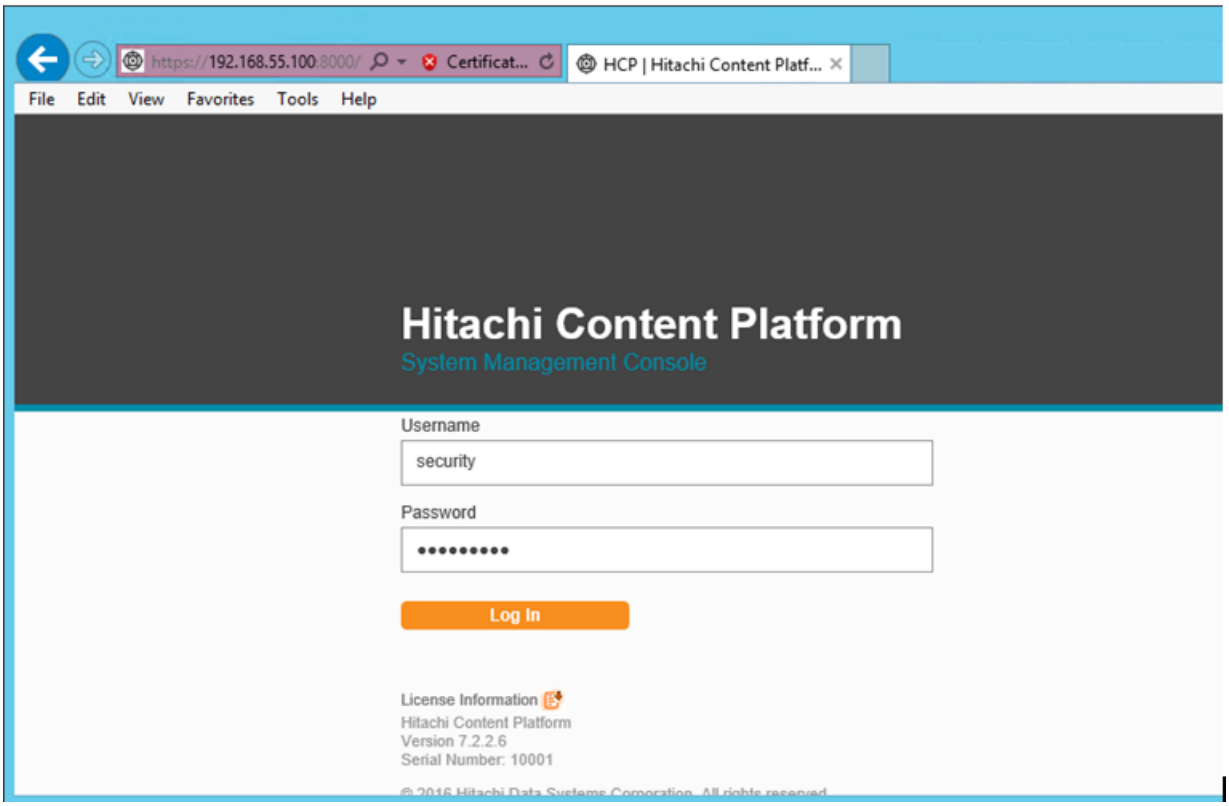
Once completing the Hitachi Content Platform installation, you can access the graphical user interface for Content Platform using a web browser.

Open the User Interface for Hitachi Content Platform

To log on to the graphical user interface of Hitachi Content Platform, do the following.

1. Open an internet browser. Use either Microsoft® Internet Explorer® or Google Chrome.
2. Type one of the following in the Address bar of the web browser:
   - `https://admin.hcpdomain-name:8000`
   - `https://nodeIPaddress:8000`

Figure 19



3. Enter the user credentials.

   Username: `security`

   Password: `Chang3Me!`

Note — If the console displays the hardware page, this means that the nodes are still starting Hitachi Content Platform. This starting process can take several minutes. If the hardware page remains displayed after several minutes, contact your authorized Hitachi Content Platform service provider for help.

4. Change the password (initial log on only).

   Once you log on to the graphical user interface of Hitachi Content Platform, the web console displays the **Change Password** page automatically.

   (1) In the **Existing Password** text box, type the existing password.

   (2) In the **New Password** text box.type a new password.

   (3) In the **Confirm New Password** text box, re-type the new password.

   (4) Click **Update Password**.

For More Information

Hitachi Data Systems Global Services offers experienced storage consultants, proven methodologies and a comprehensive services portfolio to assist you in implementing Hitachi products and solutions in your environment. For more information, see the Services website.

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