Setting the Management IP Address

Management IP Address

Each server in a Cisco UCS domain must have a one or more management IP addresses assigned to its Cisco Integrated Management Controller (CIMC) or to the service profile associated with the server. Cisco UCS Manager uses these IP addresses for external access that terminates in the CIMC. This external access can be through one of the following services:

- KVM console

- Serial over LAN

- An IPMI tool

The management IP addresses used to access the CIMC on a server can be out-of-band (OOB) addresses, through which traffic traverses the fabric interconnect via the management port, or inband addresses, through which traffic traverses the fabric interconnect via the fabric uplink port. Up to six IP addresses can be configured to access the CIMC on a server, two out-of-band (OOB) and four inband.

You can configure the following management IP addresses:

- A static OOB IPv4 address assigned directly to the server

- An OOB IPv4 address assigned to the server from a global ext-mgmt pool

- An inband IPv4 address derived from a service profile associated with the server

- An inband IPv4 address drawn from a management IP pool and assigned to a service profile or service profile template

- An static inband IPv6 address assigned directly to the server

- An inband IPv6 address derived from a service profile associated with the server

You can assign multiple management IP addresses to each CIMC on the server and to the service profile associated with the server. If you do so, you must use different IP addresses for each of them.

A management IP address that is assigned to a service profile moves with that service profile. If KVM or SoL sessions are active when you migrate the service profile to another server, Cisco UCS Manager terminates the sessions and does not restart them after the migration is completed. You configure the IP address when you create or modify a service profile.

Note You cannot assign a static IP address to a server or service profile if that IP address has already been assigned to a server or service profile in the Cisco UCS domain. If you attempt to do so, Cisco UCS Manager warns you that the IP address is already in use and rejects the configuration.

A unicast Internet Control Message Protocol (ICMP) request will be sent to the gateway IP address every second from each server that is configured with an inband IP address. This request is to check if connectivity for the inband traffic through the current Fabric Interconnect (FI) is up, and to initiate a failover to the other FI if it is down. The path selected for inband and the failover operations are completely independent of the server data traffic. The default polling interval is 1 second and the polling interval is configurable to a maximum of 5 seconds. After three failed polls, the CIMC will failover to the other FI. During failover, the CIMC will issue a Gratuitous Address Resolution Protocol (GARP) on the newly selected uplinks to notify the network that the MAC has been moved to a new location.

Configuring the Management IP Address on a Server

Configuring a Server to Use a Static IP Address

If this action is greyed out, the server has already been assigned a static IP address.

You can configure a total of three static management addresses per server:

- Outband IPv4
- Inband IPv4
- Inband IPv6

Note You are not required to configure all three.

Procedure

Step 1 In the **Navigation** pane, click **Equipment**.

Step 2 Expand **Equipment** > **Chassis** > **Chassis** *Number* > **Cartridges** > **Cartridge** *Number* > **Servers**

Step 3 Click the server for which you want to configure IP addresses.

Step 4 In the **Work** pane, click the **Inventory** tab.

Step 5 Click the **CIMC** subtab.

In the **Actions** area, two choices are available for management IP addresses:

• **Modify Outband Static Management IP**

• **Change Inband Management IP**

Step 6 To modify the outband static management IP address, in the **Actions** area, click **Modify Outband Static Management IP**:

Step 7 In the **Modify Outband Static Management IP** dialog box, complete the following fields:

Field	Description
IP Address	The static IPv4 address to be assigned to the server.
Subnet Mask	The subnet mask for the IP address.
Default Gateway	The default gateway that the IP address should use.

Step 8 Click **OK**.

Step 9 To modify the inband management IP address, click **Change Inband Management IP**.

In the **Change Management IP Address** dialog box, there are two tabs:

• **Inband IPv4**

• **Inband IPv6**

a) To change the static inband IPv4 management address, click the **Inband IPv4** subtab.

b) In the **Change Management IP Address** dialog box, complete the following fields:

Field	Description
Management IP Address Policy drop-down	Click **Static**.
IP Address	The static IPv4 address to be assigned to the server.
Subnet Mask	The subnet mask for the IP address.
Default Gateway	The default gateway that the IP address should use.

c) Click **OK**.

d) To change the static inband management IPv6 address, click the **Inband IPv6** subtab.

e) In the **Change Management IP Address** dialog box, complete the following fields:

Field	Description
Management IP Address Policy drop-down	Click **Static**.
IP Address	The static IPv6 address to be assigned to the server.
Prefix	The network prefix for the IP address.
Default Gateway	The default gateway that the IP address should use.

Step 10 Click **OK**.

Step 11 If a confirmation dialog box displays, click **Yes**.

Configuring a Server to Use a Management IP Pool

If any action is specified in this procedure is greyed out, it means that the configuration has already been completed. You can configure a total of three management IP pools per server:

- Outband IPv4
- Inband IPv4
- Inband IPv6

Note   You are not required to configure all three.

Before you begin

Configure management IP pools before configuring servers to use management IP pools.

Procedure

Step 1   In the **Navigation** pane, click **Equipment**.

Step 2   Expand **Equipment** > **Chassis** > **Chassis** *Number* > **Cartridges** > **Cartridge** *Number* > **Servers**

Step 3   Click the server that you want to configure to use the management IP pool.

Step 4   In the **Work** pane, click the **Inventory** tab.

Step 5   Click the **CIMC** subtab.

- To configure an outband IP pooled management IP address policy, proceed with Step 6.
- To configure inband IPv4 and/or IPv6 management IP address policies, proceed to Step 8.

Step 6   In the **Actions** area, click **Use Outband Pooled Management IP**.

Step 7   Click **Yes** in the **Use Outband Pooled Management IP** confirmation dialog box, then click **OK**.
The management IP address policy is now switched to using an OOB IP address from the outband management IP pool.

Step 8   In the **Actions** area, click **Change Inband Management IP**.

Step 9   In the **Change Management IP Dialog** box, there are two tabs:

- **Inband IPv4**
- **Inband IPv6**

a)   To change the inband IPv4 management IP pool, click the **Inband IPv4** tab, and complete the following fields:

Field	Description
Network drop-down list	A VLAN selected from the associated VLAN group.

Field	Description
Management IP Address Policy drop-down list	The management IP pool you want to assign to the server. There are two types of pools available: • **Domain Pools** • **Global Pools** Select one of the pools available from either the **Domain Pools** entries or the **Global Pools** entries.

b) To change the inband IPv6 management IP pool, click the **Inband IPv6** tab, and complete the following fields:

Field	Description
Network drop-down list	A VLAN selected from the associated VLAN group.
Management IP Address Policy drop-down list	The management IP pool you want to assign to the server. There are two types of pools available: • **Domain Pools** • **Global Pools** Select one of the pools available from either the **Domain Pools** entries or the **Global Pools** entries.

Step 10   Click **OK**.

Step 11   If a confirmation dialog box displays, click **Yes**.

Deleting the Inband Configuration from a Server

This procedure removes the inband management IP address configuration from a server. If this action is greyed out, no inband configuration was completed.

Procedure

Step 1   In the **Navigation** pane, click **Equipment**.

Step 2   Expand **Equipment** > **Chassis** > **Chassis** *Number* > **Cartridges** > **Cartridge** *Number* > **Servers**

Step 3   Choose the server for which you want to delete the inband management IP configuration.

Step 4   In the **Work** area, click the **Inventory** tab.

Step 5   Click the **CIMC** subtab.

Step 6   In the **Actions** area, click **Delete Inband Configuration**.

Step 7   Click **Yes** in the **Delete** confirmation dialog box.

The inband configuration for the server is deleted.

Note If an inband service profile is configured in Cisco UCS Manager with a default VLAN and pool name, the server CIMC will automatically get an inband configuration from the inband profile approximate one minute after deleting the inband configuration here.

Setting the Management IP Address on a Service Profile Template

Procedure

Step 1 In the **Navigation** pane, click **Servers**.

Step 2 Expand **Servers** > **Service Profile Templates**.

Step 3 Expand the node for the organization that contains the service profile template for which you want to set the management IP address.

If the system does not include multi tenancy, expand the **root** node.

Step 4 Click the service profile template for which you want to set the management IP address.

Step 5 In the **Work** pane, click the **General** tab.

Step 6 Expand the **Management IP Address** area.

Step 7 In the **Actions** area, click **Change Management IP Address**.

Step 8 Complete the fields in the **Change Management IP Address** dialog box.

Step 9 Click **Save Changes**.

Management IP Pools

The default management IP pool, **IP Pool ext-mgmt** is a collection of external IPv4 and IPv6 addresses. Cisco UCS Manager reserves each block of IP addresses in the management IP pool for external access that terminates in the CIMC on a server.

By default, the **IP Pool ext-mgmt** is used to configure the CIMC outbound management IP address. You cannot change this IP pool if already a static IP address is assigned to the server from this pool. If you want to configure the outbound management IP address for CIMC from a static IP address, then you can delete the IP addresses from the default management IP pool.

You can configure separate out-of-band IPv4 address pools, and in-band IPv4 or IPv6 address pools. You can configure in-band pools that contain both IPv4 and IPv6 address blocks.

Tip To avoid assigning an IP pool that contains only IPv4 addresses as the in-band IPv6 policy, or assigning an IP pool that contains only IPv6 addresses as the in-band IPv4 policy to a server CIMC, it is suggested that you configure separate in-band address pools, each with only IPv4 or IPv6 addresses.

You can configure service profiles and service profile templates to use IP addresses from the management IP pools. You cannot configure servers to use the management IP pool.

All IP addresses in the management IP pool must be in the same IPv4 subnet, or have the same IPv6 network prefix as the IP address of the fabric interconnect.

Note   The management IP pool must not contain any IP addresses that were assigned as static IP addresses for a server or service profile.

Creating an IPv6 Address Block in the Management IP Pool

The management IP pool must not contain any IP addresses that were assigned as static IP addresses for a server or service profile.

Procedure

Step 1	In the **Navigation** pane, click **LAN**.
Step 2	In the **LAN** tab, expand **LAN** > **Pools** > *Organization_Name* .
Step 3	Expand the **IP Pools** node.
Step 4	Right-click **IP Pool ext-mgmt** and select **Create Block of IP Addresses**.
Step 5	In the **Create a Block of IPv6 Addresses** dialog box, specify the required information.
Step 6	Click **OK**.

What to do next

Configure one or more service profiles or service profile templates to obtain the CIMC IP address from the management IP pool.

Deleting an IP Address Block from the Management IP Pool

Procedure

Step 1	In the **Navigation** pane, click **LAN**.
Step 2	In the **LAN** tab, expand **LAN** > **Pools** > *Organization_Name* .
Step 3	Expand the **IP Pools** node.
Step 4	Select **IP Pool ext-mgmt**.
Step 5	Right-click the IP address block that you want to delete and select **Delete**.
Step 6	If a confirmation dialog box displays, click **Yes**.

Creating an IPv4 Address Block in the Management IP Pool

The management IP pool must not contain any IP addresses that were assigned as static IP addresses for a server or service profile.

Procedure

Step 1	In the **Navigation** pane, click **LAN**.
Step 2	In the **LAN** tab, expand **LAN** > **Pools** > *Organization_Name* .
Step 3	Expand the **IP Pools** node.
Step 4	Right-click **IP Pool ext-mgmt** and select **Create Block of IP Addresses**.
Step 5	In the **Create a Block of IPv4 Addresses** dialog box, complete the following fields:

Name	Description
Name column	The range of IPv4 addresses assigned to the block.
From column	The first IPv4 address in the block.
To column	The last IPv4 address in the block.
Subnet column	The subnet mask associated with the IPv4 addresses in the block.
Default Gateway column	The default gateway associated with the IPv4 addresses in the block.
Primary DNS column	The primary DNS server that this block of IPv4 addresses should access.
Secondary DNS column	The secondary DNS server that this block of IPv4 addresses should access.

Step 6	Click **OK**.

What to do next

Configure one or more service profiles or service profile templates to obtain the CIMC IP address from the management IP pool.