Management IP Address

Each server in a Cisco UCS domain must have 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.

An ARP request will be sent to the gateway IP address every second from each server that is configured with an Inband IP address. This is to check if connectivity for the Inband traffic through the current Fabric Interconnect is up, and to initiate a failover to the other Fabric Interconnect if it is down. The path selected for Inband and the failover operations are completely independent of the server data traffic.

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

1. In the Navigation pane, click Equipment.
2. Expand Equipment > Chassis > Chassis Number > Cartridges > Cartridge Number > Servers
3. Click the server for which you want to configure IP addresses.
4. In the Work pane, click the Inventory tab.
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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>The static IPv4 address to be assigned to the server.</td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>The subnet mask for the IP address.</td>
</tr>
<tr>
<td>Default Gateway</td>
<td>The default gateway that the IP address should use.</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>The static IPv4 address to be assigned to the server.</td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>The subnet mask for the IP address.</td>
</tr>
<tr>
<td>Default Gateway</td>
<td>The default gateway that the IP address should use.</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Address</td>
<td>The static IPv6 address to be assigned to the server.</td>
</tr>
<tr>
<td>Prefix</td>
<td>The network prefix for the IP address.</td>
</tr>
<tr>
<td>Default Gateway</td>
<td>The default gateway that the IP address should use.</td>
</tr>
</tbody>
</table>

c) Click OK.

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network</td>
<td>A VLAN selected from the associated VLAN group.</td>
</tr>
</tbody>
</table>
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:

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

**Step 10**  Click OK.

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

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### 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.
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 ap proximate one minute after deleting the inband configuration here.

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### 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 multitenancy, 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.
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.
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:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The range of IPv4 addresses assigned to the block.</td>
</tr>
<tr>
<td>From</td>
<td>The first IPv4 address in the block.</td>
</tr>
<tr>
<td>To</td>
<td>The last IPv4 address in the block.</td>
</tr>
</tbody>
</table>
### Name | Description
--- | ---
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.
Creating an IPv4 Address Block in the Management IP Pool