Setting the Management IP Address

This chapter includes the following sections:

Management IP Address

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

- KVM console
- Serial over LAN
- An IPMI tool

The management IP address used to access the CIMC on a server can be one of the following:

- A static IPv4 address assigned directly to the server.
- A static IPv4 address assigned to a service profile. You cannot configure a service profile template with a static IP address.
- An IP address drawn from the management IP address pool and assigned to a service profile or service profile template.

You can assign a management IP address 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.

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 instance. If you attempt to do so, Cisco UCS Manager warns you that the IP address is already in use and rejects the configuration.

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

Configuring the Management IP Address on a Blade Server

Configuring a Blade Server to Use a Static IP Address

Procedure

	Command or Action	Purpose
Step 1	UCS-A# **scope server** *chassis-id* / *blade-id*	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # **scope cimc**	Enters chassis server CIMC mode.
Step 3	UCS-A /chassis/server/cimc # **create ext-static-ip**	Creates a static management IP address for the specified server.
Step 4	UCS-A /chassis/server/cimc/ext-static-ip # **set addr** *ip-addr*	Specifies the static IPv4 address to be assigned to the server.
Step 5	UCS-A /chassis/server/cimc/ext-static-ip # **set default-gw** *ip-addr*	Specifies the default gateway that the IP address should use.
Step 6	UCS-A /chassis/server/cimc/ext-static-ip # **set subnet** *ip-addr*	Specifies the subnet mask for the IP address.
Step 7	UCS-A /chassis/server/cimc/ext-static-ip # **commit-buffer**	Commits the transaction to the system configuration.

The following example configures a static management IP address for chassis 1 server 1, sets the static IPv4 address, sets the default gateway, sets the subnet mask, and commits the transaction:

```
UCS-A# scope server 1/1
UCS-A /chassis/server # scope cimc
UCS-A /chassis/server/cimc # create ext-static-ip
UCS-A /chassis/server/cimc/ext-static-ip* # set addr 192.168.10.10
UCS-A /chassis/server/cimc/ext-static-ip* # set default-gw 192.168.10.1
UCS-A /chassis/server/cimc/ext-static-ip* # set subnet 255.255.255.0
UCS-A /chassis/server/cimc/ext-static-ip* # commit-buffer
UCS-A /chassis/server/cimc/ext-static-ip #
```

Configuring a Blade Server to Use the Management IP Pool

Deleting the static management IP address returns the specified server to the management IP pool.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# **scope server** *chassis-id* / *blade-id*	Enters chassis server mode for the specified server.
Step 2	UCS-A /chassis/server # **scope cimc**	Enters chassis server CIMC mode.
Step 3	UCS-A /chassis/server/cimc # **delete ext-static-ip**	Deletes the external static IP address and returns the blade server to the management IP pool.
Step 4	UCS-A /chassis/server/cimc/ # **commit-buffer**	Commits the transaction to the system configuration.

The following example deletes the static management IP address for chassis 1 server 1 and commits the transaction:

```
UCS-A# scope server 1/1
UCS-A /chassis/server # scope cimc
UCS-A /chassis/server/cimc # delete ext-static-ip
UCS-A /chassis/server/cimc* # commit-buffer
UCS-A /chassis/server/cimc/ #
```

Configuring the Management IP Address on a Rack Server

Configuring a Rack Server to Use a Static IP Address

Procedure

	Command or Action	Purpose
Step 1	UCS-A# **scope server** *blade-id*	Enters server mode for the specified server.
Step 2	UCS-A /server # **scope cimc**	Enters server CIMC mode.
Step 3	UCS-A /server/cimc # **create ext-static-ip**	Creates a static management IP address for the specified server.
Step 4	UCS-A /server/cimc/ext-static-ip # **set addr** *ip-addr*	Specifies the static IPv4 address to be assigned to the server.
Step 5	UCS-A /server/cimc/ext-static-ip # **set default-gw** *ip-addr*	Specifies the default gateway that the IP address should use.

	Command or Action	Purpose
Step 6	UCS-A /server/cimc/ext-static-ip # **set subnet** *ip-addr*	Specifies the subnet mask for the IP address.
Step 7	UCS-A /server/cimc/ext-static-ip # **commit-buffer**	Commits the transaction to the system configuration.

The following example configures a static management IP address for rack server 1, sets the static IPv4 address, sets the default gateway, sets the subnet mask, and commits the transaction:

```
UCS-A# scope server 1
UCS-A /server # scope cimc
UCS-A /server/cimc # create ext-static-ip
UCS-A /server/cimc/ext-static-ip* # set addr 192.168.10.10
UCS-A /server/cimc/ext-static-ip* # set default-gw 192.168.10.1
UCS-A /server/cimc/ext-static-ip* # set subnet 255.255.255.0
UCS-A /server/cimc/ext-static-ip* # commit-buffer
UCS-A /server/cimc/ext-static-ip #
```

Configuring a Rack Server to Use the Management IP Pool

Deleting the static management IP address returns the specified server to the management IP pool.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# **scope server** *blade-id*	Enters server mode for the specified server.
Step 2	UCS-A /server # **scope cimc**	Enters server CIMC mode.
Step 3	UCS-A /server/cimc # **delete ext-static-ip**	Deletes the external static IP address and returns the rack server to the management IP pool.
Step 4	UCS-A /server/cimc/ # **commit-buffer**	Commits the transaction to the system configuration.

The following example deletes the static management IP address for rack server 1 and commits the transaction:

```
UCS-A# scope server 1
UCS-A /server # scope cimc
UCS-A /server/cimc # delete ext-static-ip
UCS-A /server/cimc* # commit-buffer
UCS-A /server/cimc/ #
```

Setting the Management IP Address on a Service Profile or Service Profile Template

Procedure

	Command or Action	Purpose
Step 1	UCS-A# **scope org** *org-name*	Enters organization mode for the specified organization. To enter the root organization mode, type / as the org-name.
Step 2	UCS-A /org # **scope service-profile** *profile-name*	Enters organization service profile mode for the specified service.
Step 3	UCS-A /org/service-profile # **set ext-mgmt-ip-state** {**none** | **pooled** | **static**}	Specifies how the management IP address will be assigned to the service profile. You can set the management IP address policy using the following options: • None--The service profile is not assigned an IP address. • Pooled--The service profile is assigned an IP address from the management IP pool. • Static--The service profile is assigned the configured static IP address. **Note** Setting the ext-management-ip-state to static for a service profile template is not supported and will result in an error.
Step 4	UCS-A /org/service-profile # **commit-buffer**	Commits the transaction to the system configuration.

The following example sets the management IP address policy for a service profile called accounting to static and then commits the transaction:

```
UCS-A# scope org /
UCS-A /org # scope service-profile accounting
UCS-A /org/service-profile # set ext-mgmt-ip-state static
UCS-A /org/service-profile* # commit-buffer
UCS-A /org/service-profile #
```

What to Do Next

If you have set the management IP address to static, configure a server to use a static IP address.

Configuring the Management IP Pool

Management IP Pool

The management IP pool is a collection of external IP 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.

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

All IP addresses in the management IP pool must be in the same subnet as the IP address of the fabric interconnect.

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

Configuring an IP Address Block for the Management IP Pool

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

Procedure

	Command or Action	Purpose
Step 1	UCS-A# **scope org /**	Enters root organization mode.
Step 2	UCS-A /org # **scope ip-pool ext-mgmt**	Enters organization IP pool mode. **Note** You cannot create (or delete) a management IP pool. You can only enter (scope to) the existing default pool.
Step 3	UCS-A /org/ip-pool # **set descr** *description*	(Optional) Provides a description for the management IP pool. This description applies to all address blocks in the management IP pool. **Note** If your description includes spaces, special characters, or punctuation, you must begin and end your description with quotation marks. The quotation marks will not appear in the description field of any **show** command output.
Step 4	UCS-A /org/ip-pool # **create block** *first-ip-addr last-ip-addr gateway-ip-addr subnet-mask*	Creates a block (range) of IP addresses, and enters organization IP pool block mode. You must specify the first and last IP addresses in the address range, the gateway IP address, and subnet mask.

	Command or Action	Purpose
		Note A IP pool can contain more than one IP address block. To create multiple IP address blocks, you must enter multiple **create block** commands from organization IP pool mode.
Step 5	UCS-A /org/ip-pool/block # **commit-buffer**	Commits the transaction to the system configuration.

The following example configures an IP address block for the management IP pool and commits the transaction:

```
UCS-A# scope org /
UCS-A /org # scope ip-pool ext-mgmt
UCS-A /org/ip-pool* # set descr "This is a management IP pool example."
UCS-A /org/ip-pool* # create block 192.168.100.1 192.168.100.200 192.168.100.10 255.255.255.0
UCS-A /org/ip-pool/block* # commit-buffer
UCS-A /org/ip-pool/block #
```

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

	Command or Action	Purpose
Step 1	UCS-A# **scope org** *org-name*	Enters organization mode for the specified organization. To enter the root organization mode, type **/** as the *org-name* .
Step 2	UCS-A /org # **scope ip-pool ext-mgmt**	Enters the management IP pool.
Step 3	UCS-A /org/ip-pool # **delete block** *first-ip-addr last-ip-addr*	Deletes the specified block (range) of IP addresses.
Step 4	UCS-A /org/ip-pool # **commit-buffer**	Commits the transaction to the system configuration.

The following example configures an IP address block for the management IP pool and commits the transaction:

```
UCS-A# scope org /
UCS-A /org # scope ip-pool ext-mgmt
UCS-A /org/ip-pool # delete block 192.168.100.1 192.168.100.200
UCS-A /org/ip-pool* # commit-buffer
UCS-A /org/ip-pool #
```