Configuring Server-Related Pools

This chapter includes the following sections:

Server Pool Configuration

Server Pools

A server pool contains a set of servers. These servers typically share the same characteristics. Those characteristics can be their location in the chassis, or an attribute such as server type, amount of memory, local storage, type of CPU, or local drive configuration. You can manually assign a server to a server pool, or use server pool policies and server pool policy qualifications to automate the assignment.

If your system implements multitenancy through organizations, you can designate one or more server pools to be used by a specific organization. For example, a pool that includes all servers with two CPUs could be assigned to the Marketing organization, while all servers with 64 GB memory could be assigned to the Finance organization.

A server pool can include servers from any chassis in the system. A given server can belong to multiple server pools.

Creating a Server 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 # **create server-pool** *server-pool-name*	Creates a server pool with the specified name, and enters organization server pool mode.
Step 3	UCS-A /org/server-pool # **create server** *chassis-num/slot-num*	Creates a server for the server pool. **Note** A server pool can contain more than one server. To create multiple servers for the pool, you must enter multiple **create server** commands from organization server pool mode.
Step 4	UCS-A /org/server-pool # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to create a server pool named ServPool2, create two servers for the server pool, and commit the transaction:

```
UCS-A# scope org /
UCS-A /org # create server-pool ServPool2
UCS-A /org/server-pool* # create server 1/1
UCS-A /org/server-pool* # create server 1/4
UCS-A /org/server-pool* # commit-buffer
UCS-A /org/server-pool #
```

Deleting a Server 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 # **delete server-pool** *server-pool-name*	Deletes the specified server pool.
Step 3	UCS-A /org # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to delete the server pool named ServPool2 and commit the transaction:

```
UCS-A# scope org /
UCS-A /org # delete server-pool ServPool2
UCS-A /org* # commit-buffer
UCS-A /org #
```

UUID Suffix Pool Configuration

UUID Suffix Pools

A UUID suffix pool is a collection of SMBIOS UUIDs that are available to be assigned to servers. The first number of digits that constitute the prefix of the UUID are fixed. The remaining digits, the UUID suffix, are variable. A UUID suffix pool ensures that these variable values are unique for each server associated with a service profile which uses that particular pool to avoid conflicts.

If you use UUID suffix pools in service profiles, you do not have to manually configure the UUID of the server associated with the service profile.

Creating a UUID Suffix Pool

Procedure

	Command or Action	Purpose
Step 1	UCS-A# **scope org** *org-name*	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the *org-name*.
Step 2	UCS-A /org # **create uuid-suffix-pool** *pool-name*	Creates a UUID suffix pool with the specified pool name and enters organization UUID suffix pool mode. This name can be between 1 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A /org/uuid-suffix-pool # **set descr** *description*	(Optional) Provides a description for the UUID suffix 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/uuid-suffix-pool # **set assignmentorder** {**default** | **sequential**}	This can be one of the following: • **default**—Cisco UCS Manager selects a random identity from the pool. • **sequential**—Cisco UCS Manager selects the lowest available identity from the pool.

	Command or Action	Purpose
Step 5	UCS-A /org/uuid-suffix-pool # **create block** *first-uuid last-uuid*	Creates a block (range) of UUID suffixes, and enters organization UUID suffix pool block mode. You must specify the first and last UUID suffixes in the block using the form *nnnn-nnnnnnnnnnnn*, with the UUID suffixes separated by a space.
		Note A UUID suffix pool can contain more than one UUID suffix block. To create multiple blocks, you must enter multiple **create block** commands from organization UUID suffix pool mode.
Step 6	UCS-A /org/uuid-suffix-pool/block # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to create a UUID suffix pool named pool4, provide a description for the pool, specify a block of UUID suffixes to be used for the pool, and commit the transaction:

```
UCS-A# scope org /
UCS-A /org # create uuid-suffix-pool pool4
UCS-A /org/uuid-suffix-pool* # set descr "This is UUID suffix pool 4"
UCS-A /org/uuid-suffix-pool* # create block 1000-000000000001 1000-000000000010
UCS-A /org/uuid-suffix-pool/block* # commit-buffer
UCS-A /org/uuid-suffix-pool/block #
```

What to Do Next

Include the UUID suffix pool in a service profile and/or template.

Deleting a UUID Suffix Pool

If you delete a pool, Cisco UCS Manager does not reallocate any addresses from that pool that were assigned to vNICs or vHBAs. All assigned addresses from a deleted pool remain with the vNIC or vHBA to which they are assigned until one of the following occurs:

- The associated service profiles are deleted.

- The vNIC or vHBA to which the address is assigned is deleted.

- The vNIC or vHBA is assigned to a different pool.

Procedure

	Command or Action	Purpose
Step 1	UCS-A# **scope org** *org-name*	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the *org-name*.
Step 2	UCS-A /org # **delete uuid-suffix-pool** *pool-name*	Deletes the specified UUID suffix pool.

	Command or Action	Purpose
Step 3	UCS-A /org # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to delete the UUID suffix pool named pool4 and commit the transaction:

```
UCS-A# scope org /
UCS-A /org # delete uuid-suffix-pool pool4
UCS-A /org* # commit-buffer
UCS-A /org #
```

IP Pool Configuration

IP Pools

IP pools are collections of IP addresses that do not have a default purpose. You can create IPv4 or IPv6 address pools in Cisco UCS Manager to do the following:

•

- Replace the default management IP pool **ext-mgmt** for servers that have an associated service profile. Cisco UCS Manager reserves each block of IP addresses in the IP pool for external access that terminates in the Cisco Integrated Management Controller (CIMC) on a server. If there is no associated service profile, you must use the **ext-mgmt** IP pool for the CIMC to get an IP address.

- Replace the management inband or out-of-band IP addresses for the CIMC.

> **Note** You cannot create iSCSI boot IPv6 pools in Cisco UCS Manager.

You can create IPv4 address pools in Cisco UCS Manager to do the following:

- Replace the default iSCSI boot IP pool **iscsi-initiator-pool**. Cisco UCS Manager reserves each block of IP addresses in the IP pool that you specify.

- Replace both the management IP address and iSCSI boot IP addresses.

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

Creating an Inband IP Pool

You can configure an inband IP pool with blocks of IPv4 and IPv6 addresses.

Procedure

	Command or Action	**Purpose**
Step 1	UCS-A# **scope org** *org-name*	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the *org-name*.
Step 2	UCS-A /org # **create ip-pool** *pool-name*	Creates an IP pool with the specified name, and enters organization IP pool mode. This name can be between 1 and 32 alphanumeric characters. You cannot use spaces or any special characters other than - (hyphen), _ (underscore), : (colon), and . (period), and you cannot change this name after the object is saved.
Step 3	UCS-A /org/ip-pool # **set descr** *description*	(Optional) Provides a description for the 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.
Step 5	UCS-A /org/ip-pool/block # **commit-buffer**	Commits the transaction to the system configuration.
Step 6	UCS-A /org/ip-pool/block # **exit**	Exits organization IP pool block mode.
Step 7	UCS-A /org/ip-pool # **create ip6block** *first-ip6-addr last-ip6-addr gateway-ip6-addr prefix*	Creates a block of IPv6 addresses, and enters organization IPv6 pool block mode. You must specify the first and last IPv6 addresses in the address range, the gateway IPv6 address, and network prefix.
Step 8	UCS-A/org/ip-pool/ipv6-block # **commit-buffer**	Commits the transaction to the system configuration.

The example below creates an inband IP pool named inband-default, creates a block of IPv4 addresses, creates a block of IPv6 addresses, and commits the transaction:

```
UCS-A# scope org
UCS-A /org # create ip-pool inband_default
UCS-A /org/ip-pool* # create block 192.168.100.10 192.168.100.100 192.168.100.1 255.255.255.0
UCS-A /org/ip-pool/block* # commit-buffer
UCS-A /org/ip-pool/block # exit
UCS-A /org/ip-pool # create ipv6-block 2001:888::10 2001:888::100 2001:888::1 64
UCS-A /org/ip-pool/ipv6-block* # commit-buffer
UCS-A /org/ip-pool/ipv6-block #
```

What to Do Next

Include the IP pool in a service profile and template.

Adding Blocks to an IP Pool

Procedure

	Command or Action	**Purpose**
Step 1	UCS-A# **scope org** *org-name*	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the *org-name*.
Step 2	UCS-A /org # **scope ip-pool** *pool-name*	Enters organization IP pool mode for the specified pool.
Step 3	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.
		Note An IP pool can contain more than one IP block. To create multiple blocks, enter multiple **create block** commands from organization IP pool mode.
Step 4	UCS-A /org/ip-pool/block # **commit-buffer**	Commits the transaction.
Step 5	UCS-A /org/ip-pool/block # **exit**	Exits IPv4 block configuration mode.
Step 6	UCS-A /org/ip-pool # **create ipv6-block** *first-ip6-addr last-ip6-addr gateway-ip6-addr prefix*	Creates a block (range) of IPv6 addresses, and enters organization IP pool IPv6 block mode. You must specify the first and last IPv6 addresses in the address range, the gateway IPv6 address, and network prefix.
		Note An IP pool can contain more than one IPv6 block. To create multiple IPv6 blocks, enter multiple **create ipv6-block** commands from organization IP pool mode.
Step 7	UCS-A /org/ip-pool/ ipv6-block # **commit-buffer**	Commits the transaction to the system configuration.

This example shows how to add blocks of IPv4 and IPv6 addresses to an IP pool named pool4 and commit the transaction:

```
UCS-A# scope org /
UCS-A /org # scope ip-pool pool4
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 #exit
UCS-A /org/ip-pool* # create ipv6-block 2001:888::10 2001:888::100 2001:888::1 64
UCS-A /org/ip-pool/ipv6-block* commit-buffer
```

Deleting a Block from an IP Pool

If you delete an address block from a pool, Cisco UCS Manager does not reallocate any addresses in that block that were assigned to vNICs or vHBAs. All assigned addresses from a deleted block remain with the vNIC or vHBA to which they are assigned until one of the following occurs:

- The associated service profiles are deleted.

- The vNIC or vHBA to which the address is assigned is deleted.

- The vNIC or vHBA is assigned to a different pool.

Note   IPv6 address blocks are not applicable to vNICs or vHBAs.

Procedure

	Command or Action	**Purpose**
Step 1	UCS-A# **scope org** *org-name*	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the *org-name*.
Step 2	UCS-A /org # **scope ip-pool***pool-name*	Enters organization IP pool mode for the specified pool.
Step 3	UCS-A /org/ip-pool # **delete** {*ip-block|ipv6-block*} {*first-ip-addr|first-ip6-addr*} {*last-ip-addr|last-ip6-addr*}	Deletes the specified block (range) of IPv4 or IPv6 addresses.
Step 4	UCS-A /org/ip-pool # **commit-buffer**	Commits the transaction to the system configuration.

This example shows how to delete an IP address block from an IP pool named pool4 and commit the transaction:

```
UCS-A# scope org /
UCS-A /org # scope ip-pool pool4
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 #
```

This example shows how to delete an IPv6 address block from an IP pool named pool4 and commit the transaction:

```
UCS-A# scope org /
UCS-A /org # scope ip-pool pool4
UCS-A /org/ip-pool # delete ipv6-block 2001::1 2001::10
UCS-A /org/ip-pool* # commit-buffer
UCS-A /org/ip-pool #
```

Deleting an IP Pool

If you delete a pool, Cisco UCS Manager does not reallocate any addresses from that pool that were assigned to vNICs or vHBAs. All assigned addresses from a deleted pool remain with the vNIC or vHBA to which they are assigned until one of the following occurs:

- The associated service profiles are deleted.

- The vNIC or vHBA to which the address is assigned is deleted.

- The vNIC or vHBA is assigned to a different pool.

Procedure

	Command or Action	**Purpose**
Step 1	UCS-A# **scope org** *org-name*	Enters the organization mode for the specified organization. To enter the root organization mode, enter / as the *org-name*.
Step 2	UCS-A /org # **delete ip-pool** *pool-name*	Deletes the specified IP pool.
Step 3	UCS-A /org # **commit-buffer**	Commits the transaction to the system configuration.

The following example shows how to delete the IP pool named pool4 and commit the transaction:

```
UCS-A# scope org /
UCS-A /org # delete ip-pool pool4
UCS-A /org* # commit-buffer
UCS-A /org #
```