



Cisco UCS Servers

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Server Management

With global policies, global server pools and firmware management in Cisco UCS Central, you can manage general and complex server deployments for the following servers in your registered UCS domains:

- Cisco UCS B-Series Blade Servers
- Cisco UCS C-Series Rack-Mount Servers
- Cisco UCS Mini

Equipment Policies

Equipment policies allow you to tune your servers and other equipment to suit your requirements. Equipment policies can only be set at the domain group level, and apply to all servers in that domain group.



Note Equipment policies are not included in service profiles.

Configuring the Chassis/FEX Discovery Policy

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect policy-mgr	Enters policy manager mode.

	Command or Action	Purpose
Step 2	UCSC(policy-mgr) # scope domain-group <i>domain-group</i>	Enters domain group root mode and (optionally) enters a sub-domain group under the domain group root. To enter the domain group root mode, type / as the <i>domain-group</i> .
Step 3	UCSC(policy-mgr) /domain-group # scope chassis-disc-policy	Enters organization chassis/FEX discovery policy mode.
Step 4	UCSC(policy-mgr) /domain-group/chassis-disc-policy # set action { 1-link 2-link 4-link 8-link platform-max }	Specifies the minimum threshold for the number of links between the chassis or FEX and the fabric interconnect.
Step 5	UCSC(policy-mgr) /domain-group/chassis-disc-policy # set link-aggregation-pref { none port-channel }	Specifies whether the links from the IOMs or FEXes to the fabric interconnects are grouped in a port channel. Note The link grouping preference only takes effect if both sides of the links between an IOM or FEX and the fabric interconnect support fabric port channels. If one side of the links does not support fabric port channels, this preference is ignored and the links are not grouped in a port channel.
Step 6	UCSC(policy-mgr) /domain-group/chassis-disc-policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to:

- Configure the chassis discovery policy to discovery chassis with four links to a fabric interconnect
- Set the link grouping preference to port channel

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope domain-group /
UCSC(policy-mgr) /domain-group # scope chassis-disc-policy
UCSC(policy-mgr) /domain-group/chassis-disc-policy # set action 4-link
UCSC(policy-mgr) /domain-group/chassis-disc-policy* # set link-aggregation-pref port-channel
UCSC(policy-mgr) /domain-group/chassis-disc-policy* # commit-buffer
UCSC(policy-mgr) /domain-group/chassis-disc-policy #
```

Configuring the Rack Server Discovery Policy

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect policy-mgr	Enters policy manager mode.
Step 2	UCSC(policy-mgr) # scope domain-group <i>domain-group</i>	Enters domain group root mode and (optionally) enters a sub-domain group under the domain group root. To enter the domain group root mode, type / as the <i>domain-group</i> .
Step 3	UCSC(policy-mgr) /domain-group # scope rackserver-disc-policy	Enters rack server discovery policy mode.
Step 4	UCSC(policy-mgr) /domain-group/rackserver-disc-policy # set action {immediate user-acknowledged}	Specifies the way the system reacts when you add a new rack server.
Step 5	UCSC(policy-mgr) /domain-group/rackserver-disc-policy # set scrub-policy policy-name	Specifies the scrub policy that should run on a newly discovered rack server.
Step 6	UCSC(policy-mgr) /domain-group/rackserver-disc-policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to:

- Set the rack server discovery policy to immediately discover new rack servers
- Specify the scrub policy ScrubPoll

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope domain-group
UCSC(policy-mgr) /domain-group # scope rackserver-disc-policy
UCSC(policy-mgr) /domain-group/rackserver-disc-policy # set action immediate
UCSC(policy-mgr) /domain-group/rackserver-disc-policy # set scrub-policy ScrubPoll
UCSC(policy-mgr) /domain-group/rackserver-disc-policy* # commit-buffer
UCSC(policy-mgr) /domain-group/rackserver-disc-policy #
```

Configuring the Rack Management Connection Policy

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect policy-mgr	Enters policy manager mode.

	Command or Action	Purpose
Step 2	UCSC(policy-mgr) # scope domain-group <i>domain-group</i>	Enters domain group root mode and (optionally) enters a sub-domain group under the domain group root. To enter the domain group root mode, type / as the <i>domain-group</i> .
Step 3	UCSC(policy-mgr) /domain-group # scope server-management-connectivity-policy	Enters server management connectivity policy mode.
Step 4	UCSC(policy-mgr) /domain-group/server-management-connectivity-policy # set action {auto-acknowledged user-acknowledged}	Select whether servers are automatically configured based on the available server connections.
Step 5	UCSC(policy-mgr) /domain-group/server-management-connectivity-policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to configure the rack management connection policy to wait for user acknowledgment.

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope domain-group /
UCSC(policy-mgr) /domain-group # scope scope server-management-connectivity-policy
UCSC(policy-mgr) /domain-group/server-management-connectivity-policy # set action
user-acknowledged
UCSC(policy-mgr) /domain-group/server-management-connectivity-policy* # commit-buffer
UCSC(policy-mgr) /domain-group/server-management-connectivity-policy #
```

Configure MAC Address Table Aging Policy

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect policy-mgr	Enters policy manager mode.
Step 2	UCSC(policy-mgr) # scope domain-group <i>domain-group</i>	Enters domain group root mode and (optionally) enters a sub-domain group under the domain group root. To enter the domain group root mode, type / as the <i>domain-group</i> .
Step 3	UCSC(policy-mgr) /domain-group # scope lan-cloud	Enters LAN cloud mode.

	Command or Action	Purpose
Step 4	UCSC(policy-mgr) /domain-group/lan-cloud # set mac-aging { <i>time</i> mode-default never }	Specify the length of time an idle MAC address remains in the MAC address table before it is removed. This can be one of the following: <ul style="list-style-type: none"> • <i>time</i>—Enter the number of days, hours, minutes, and seconds in the following format: dd hh mm ss. • mode-default—The system uses the default value. For end-host mode, the default is 14,500 seconds. For switching mode, the default is 300 seconds. • never—MAC addresses are never removed from the table.
Step 5	UCSC(policy-mgr) /domain-group/lan-cloud # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to set the MAC table aging to never.

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope domain-group /
UCSC(policy-mgr) /domain-group # scope lan-cloud
UCSC(policy-mgr) /domain-group/lan-cloud # set mac-aging never
UCSC(policy-mgr) /domain-group/lan-cloud* # commit-buffer
UCSC(policy-mgr) /domain-group/lan-cloud #
```

Setting VLAN Port Count Optimization

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect policy-mgr	Enters policy manager mode.
Step 2	UCSC(policy-mgr) # scope domain-group <i>domain-group</i>	Enters domain group root mode and (optionally) enters a sub-domain group under the domain group root. To enter the domain group root mode, type / as the <i>domain-group</i> .
Step 3	UCSC(policy-mgr) /domain-group # scope lan-cloud	Enters LAN cloud mode.
Step 4	UCSC(policy-mgr) /domain-group/lan-cloud # set vlan-compression { enabled disabled }	Select whether VLAN port count optimization is enabled or disabled.
Step 5	UCSC(policy-mgr) /domain-group/lan-cloud # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to enable VLAN port count optimization.

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope domain-group /
UCSC(policy-mgr) /domain-group # scope lan-cloud
UCSC(policy-mgr) /domain-group/lan-cloud # set vlan-compression enabled
UCSC(policy-mgr) /domain-group/lan-cloud* # commit-buffer
UCSC(policy-mgr) /domain-group/lan-cloud #
```

Configuring an Information Policy

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect policy-mgr	Enters policy manager mode.
Step 2	UCSC(policy-mgr) # scope domain-group <i>domain-group</i>	Enters domain group root mode and (optionally) enters a sub-domain group under the domain group root. To enter the domain group root mode, type / as the <i>domain-group</i> .
Step 3	UCSC(policy-mgr) /domain-group # scope info-policy	Enters information policy mode.
Step 4	UCSC(policy-mgr) /domain-group/info-policy # set state {enabled disabled}	Select whether the information policy will display the uplink switches that are connected to the Cisco UCS domain.
Step 5	UCSC(policy-mgr) /domain-group/info-policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to configure the information policy to display the uplink switches.

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope domain-group /
UCSC(policy-mgr) /domain-group # scope info-policy
UCSC(policy-mgr) /domain-group/info-policy # set state enabled
UCSC(policy-mgr) /domain-group/info-policy* # commit-buffer
UCSC(policy-mgr) /domain-group/info-policy #
```

Power Control Policy

Cisco UCS uses the priority set in the power control policy along with the blade type and configuration to calculate the initial power allocation for each blade within a chassis. During normal operation, the active blades within a chassis can borrow power from idle blades within the same chassis. If all blades are active

and reach the power cap, service profiles with higher priority power control policies take precedence over service profiles with lower priority power control policies.

Priority is ranked on a scale of 1-10, where 1 indicates the highest priority and 10 indicates lowest priority. The default priority is 5.

For mission-critical application a special priority called no-cap is also available. Setting the priority to no-cap prevents Cisco UCS from leveraging unused power from a particular server. With this setting, the server is allocated the maximum amount of power possible for that type of server.



Note You must include the power control policy in a service profile and that service profile must be associated with a server for it to take effect.

Creating a Power Control Policy

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect policy-mgr	Enters policy manager mode.
Step 2	UCSC(policy-mgr) # scope org <i>org-name</i>	Enters organization mode for the specified organization. To enter the root organization mode, type / as the <i>org-name</i> .
Step 3	UCSC(policy-mgr) /org # create power-control-policy <i>policy-name</i>	Creates a power control policy and enters power control policy mode.
Step 4	Required: UCSC(policy-mgr) /org/power-control-policy # set priority { <i>priority-num</i> no-cap }	Specifies the priority for the power control policy.
Step 5	Required: UCSC(policy-mgr) /org/power-control-policy # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to create a power control policy and commits the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope org /
UCSC(policy-mgr) /org # create power-control-policy PCP-1
UCSC(policy-mgr) /org/power-control-policy* # set priority 1
UCSC(policy-mgr) /org/power-control-policy* # commit-buffer
UCSC(policy-mgr) /org/power-control-policy #
```

Deleting a Power-Control-Policy

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect policy-mgr	Enters policy manager mode.
Step 2	UCSC(policy-mgr) # scope org org-name	Enters organization mode for the specified organization. To enter the root organization mode, type / as the <i>org-name</i> .
Step 3	UCSC(policy-mgr) /org # delete power-control-policy policy-name	Deletes the specified power control policy.
Step 4	Required: UCSC(policy-mgr) /org # commit-buffer	Commits the transaction to the system configuration.

Example

The following example shows how to delete a power control policy and commits the transaction:

```
UCSC# connect policy-mgr
UCSC(policy-mgr) # scope org /
UCSC(policy-mgr) /org # delete power-control-policy PCP-1
UCSC(policy-mgr) /org* # commit-buffer
UCSC(policy-mgr) /org #
```

Inventory Management

Cisco UCS Central collects the inventory details from all registered Cisco UCS domains. You can view and monitor the components in the registered Cisco UCS domains from the domain management panel.

When a Cisco UCS domain is successfully registered, Cisco UCS Central starts collecting the following details:

- Physical Inventory
- Service profiles and service profile templates
- Fault information

Physical Inventory

The physical inventory details of the components in Cisco UCS domains are organized under domains. The Cisco UCS domains that do not belong to any domain groups are placed under ungrouped domains. You can view detailed equipment status, and the following physical details of components in the domain management panel:

- Fabric interconnects - switch card modules
- Servers - blades/rack mount servers

- Chassis - io modules
- Fabric extenders

Service Profiles and Templates

You can view a complete list of service profiles and service profile templates available in the registered Cisco UCS domains from the **Servers** tab. The **Service Profile** panel displays a aggregated list of the service profiles. Service profiles with the same name are grouped under the organizations they are assigned to. Instance count next to the service profile name will provide the number of times that particular service profile is used in Cisco UCS domains.

From the **Service Profile Template** panel, you can view the available service profile templates, organization and the number of times each service profile template is used in the Cisco UCS Domain.

Viewing Inventory Details for a UCS Domain

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.
Step 2	UCSC(resource-mgr) # scope domain-mgmt	Enters the UCS domains.
Step 3	UCSC(resource-mgr) /domain-mgmt # scope ucs-domain name	Enters the specified UCS domain.
Step 4	UCSC(resource-mgr)/domain-mgmt/UCS domain # show detail .	Displays a list of all equipments in the specified UCS domain.

Example

The following example shows how to view the details of a registered Cisco UCS Domain from Cisco UCS Central:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resource-mgr) /domain-mgmt # scope ucs-domain 1006
UCSC(resource-mgr) /domain-mgmt/ucs-domain # show detail
UCS System:
  ID: 1006
  Name: doc-mammoth96
  Total Servers: 6
  Free Servers: 0
  Owner:
  Site:
  Description:
  Fault Status: 1407460783489057
  Current Task:
UCSC(resource-mgr) /domain-mgmt/ucs-domain #
```

Viewing Inventory Details of a Server

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.
Step 2	UCSC(resource-mgr) # scope domain-mgmt	Enters the UCS domains.
Step 3	UCSC(resource-mgr) /domain-mgmt # scope ucs-domain name	Enters the specified UCS domain.
Step 4	UCS(resource-mgr) /domain-mgmt/ucs-domain # chassis 1	Enters the chassis mode
Step 5	UCS(resource-mgr) /domain-mgmt/ucs-domain /chassis # server 1	Enters the server mode
Step 6	UCS(resource-mgr) /domain-mgmt/ucs-domain /chassis /server # show inventory	Displays inventory details of a server.

Example

The following example shows how to view inventory details of a server within a chassis:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resource-mgr) /domain-mgmt # scope ucs-domain 1007
UCSC(resource-mgr) /domain-mgmt/ucs-domain # scope chassis 1
UCSC(resource-mgr) /domain-mgmt/ucs-domain/chassis # scope server 1
UCSC(resource-mgr) /domain-mgmt/ucs-domain/chassis/server # show inventory
Server 1/1:
  Name:
  User Defined Description:
  Acknowledged Product Name: Cisco UCS B200 M1
  Acknowledged PID: N20-B6620-1
  Acknowledged VID: V01
  Acknowledged Serial (SN): QCI1415A3Q7
  Acknowledged Memory (MB): 8192
  Acknowledged Effective Memory (MB): 8192
  Acknowledged Cores: 8
  Acknowledged Adapters: 1
UCSC(resource-mgr) /domain-mgmt/ucs-domain/chassis/server #
```

Viewing Local Service Profile

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.

	Command or Action	Purpose
Step 2	UCSC(resource-mgr) # scope org org-name	Enters the organizations mode for the specified organization. To enter the root mode type/ as the <i>org-name</i> .
Step 3	UCSC(resource-mgr) /org # scope local-service-profile local-service-profile_name	Enters the specified local service profile.
Step 4	UCSC(resource-mgr) /org /local-service-profile # show instance	Displays information of the instance in the specified local service profile.

Example

The following example shows how to view local service profile named localSP2:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope org /
UCSC(resource-mgr) /org# scope local-service-profile localSP2
UCSC(resource-mgr) /org/local-service-profile# show instance
Compute Instance:
  ID      Name      Status      Assoc State  Config State  Physical Ref
  ----      -
  1007    samc02    Config Failure  Unassociated  Failed        localSP2/1007
UCSC(resource-mgr) /org/local-service-profile #
```

Viewing Organization Details

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.
Step 2	UCSC(resource-mgr) # scope org org-name	Enters the organization mode for the specified organization. To enter the root organization mode type/ as the <i>org-name</i> .
Step 3	UCSC(resource-mgr) /org # show org	Displays details of an organization.

Example

The following example shows how to view root organization details:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope org /
UCSC(resource-mgr) /org # show org
Organizations:
  Name
  ----
  /org1
UCSC(resource-mgr) /org #
```

Viewing Chassis Information

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.
Step 2	UCSC(resource-mgr) # scope domain-mgmt	Enters the UCS domains.
Step 3	UCSC(resource-mgr) /domain-mgmt # scope ucs-domain name	Enters the specified UCS domain.
Step 4	UCSC(resource-mgr)/domain-mgmt/UCS domain # show chassis .	Displays a list of chassis in the specified UCS domain.

Example

The following example shows how to view the chassis information in a registered Cisco UCS Domain from Cisco UCS Central:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resource-mgr) /domain-mgmt # scope ucs-domain 1006
UCSC(resource-mgr) /domain-mgmt/ucs-domain # show chassis
UCS System chassis:
  Chassis Id Model          Status          Operability
  -----
          1 N20-C6508 Inoperable          Operable
UCSC(resource-mgr) /domain-mgmt/ucs-domain #
```

Viewing Fabric Interconnects

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.
Step 2	UCSC(resource-mgr) # scope domain-mgmt	Enters the UCS domains.
Step 3	UCSC(resource-mgr) /domain-mgmt # scope ucs-domain name	Enters the specified UCS domain.
Step 4	UCSC(resource-mgr)/domain-mgmt/UCS domain # show fabric-interconnect .	Displays a list of fabric-interconnect in the specified UCS domain.

Example

The following example shows how to view the fabric interconnects in a registered Cisco UCS Domain from Cisco UCS Central:

```

UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resource-mgr) /domain-mgmt # scope ucs-domain 1006
UCSC(resource-mgr) /domain-mgmt/ucs-domain # show fabric-interconnect
ID Operability IP Address      Model      Serial
-----
A Operable      10.193.66.180 UCS-FI-6296UP FOX1512G07K
UCSC(resource-mgr) /domain-mgmt/ucs-domain #

```

Viewing Fabric Extenders

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.
Step 2	UCSC(resource-mgr) # scope domain-mgmt	Enters the UCS domains.
Step 3	UCSC(resource-mgr) /domain-mgmt # scope ucs-domain name	Enters the specified UCS domain.
Step 4	UCSC(resource-mgr)/domain-mgmt/UCS domain # show fe .	Displays a list of fabric extenders in the specified UCS domain.

Example

The following example shows how to view the fabric extenders in a registered Cisco UCS domain from Cisco UCS Central:

```

UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resource-mgr) /domain-mgmt # scope ucs-domain 1006
UCSC(resource-mgr) /domain-mgmt/ucs-domain # show fe
UCS System Fabric-extender:
      Fex Id      Model      Status      Operability
-----
          2 N2K-C2232PP-10GE
                    Accessibility Problem      N/A
UCSC(resource-mgr) /domain-mgmt/ucs-domain #

```

Viewing Servers

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.
Step 2	UCSC(resource-mgr) # scope domain-mgmt	Enters the UCS domains.

	Command or Action	Purpose
Step 3	UCSC(resource-mgr) /domain-mgmt # scope ucs-domain name	Enters the specified UCS domain.
Step 4	UCSC(resource-mgr)/domain-mgmt/UCS domain # show server .	Displays a list of servers in the specified UCS domain.

Example

The following example shows how to view the rack servers in a registered Cisco UCS Domain from Cisco UCS Central:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resource-mgr) /domain-mgmt # scope ucs-domain 1006
UCSC(resource-mgr) /domain-mgmt/ucs-domain # show server
UCSC(resource-mgr) /domain-mgmt/ucs-domain #
```

To view the blade servers, you have to scope into the chassis:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resource-mgr) /domain-mgmt # scope ucs-domain 1006
UCSC(resource-mgr) /domain-mgmt/ucs-domain # scope chassis 1
UCSC(resource-mgr) /domain-mgmt/ucs-domain/chassis # show server
Blade Server in a UCS Chassis:
  Chassis Id Slot Id Status Cores   Memory (MB)   LS Ref
  -----
  1           1 Inoperable
                12           131072
  1           2 Ok           8           6144
org-root/req-BIOS-2/inst-100
6
  1           3 Discovery
                0           0
  1           5 Ok           8           24576
org-root/req-BIOS-5/inst-100
6
  1           6 Ok           8           12288
org-root/req-BIOS-6/inst-100
6
  1           7 Ok           32          32768
org-root/org-LisasOrg/req-Li
sasOrg_SPClone/inst-1006
UCSC(resource-mgr) /domain-mgmt/ucs-domain/chassis #
```

Viewing FSM Operation Status

Procedure

	Command or Action	Purpose
Step 1	UCSC# connect resource-mgr	Enters resource manager mode.
Step 2	UCSC(resource-mgr) # scope domain-mgmt	Enters the UCS domains.
Step 3	UCSC(resource-mgr) /domain-mgmt # scope ucs-domain name	Enters the specified UCS domain.
Step 4	UCSC(resource-mgr)/domain-mgmt/UCS domain # show fsm status .	Displays the fsm operation status for the specified UCS domain.

Example

The following example shows how to view the FSM operation status in a registered Cisco UCS Domain from Cisco UCS Central:

```
UCSC# connect resource-mgr
UCSC(resource-mgr) # scope domain-mgmt
UCSC(resource-mgr) /domain-mgmt # scope ucs-domain 1006
UCSC(resource-mgr) /domain-mgmt/ucs-domain # show fsm status
```

```
ID: 1006
  FSM 1:
    Status: 0
    Previous Status: 0
    Timestamp: Never
    Try: 0
    Progress (%): 100
    Current Task:
UCSC(resource-mgr) /domain-mgmt/ucs-domain #
```

