

Configuring a Global Service Profile (GSP) in UCS (Unified Computing System) Central and troubleshooting alerts along the way

Contents

[Introduction](#)

[Prerequisites](#)

[Requirements](#)

[Components Used](#)

[Background Information](#)

[Configure](#)

[UCS Central HTML GUI Layout](#)

[Assigning a UCS Domain to a Domain Group](#)

[Creating a Service Profile](#)

Introduction

This document describes how to configure a Global Service Profile (GSP) in UCS (Unified Computing System) Central and we also take a look at how to address some of the alerts that we may encounter while creating a GSP.

Prerequisites

Requirements

Familiarity with creating a service profile and service profile template in UCSM (Unified Computing Systems Manager)

Basic knowledge of UCS Central.

Components Used

The information in this document is based on these software and hardware versions:

Cisco UCSM 3.1(1h)

Cisco UCS Central 1.5(1a)

Cisco UCS Blade Servers

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Background Information

Global service profile centralizes the logical configuration deployed across the data center.

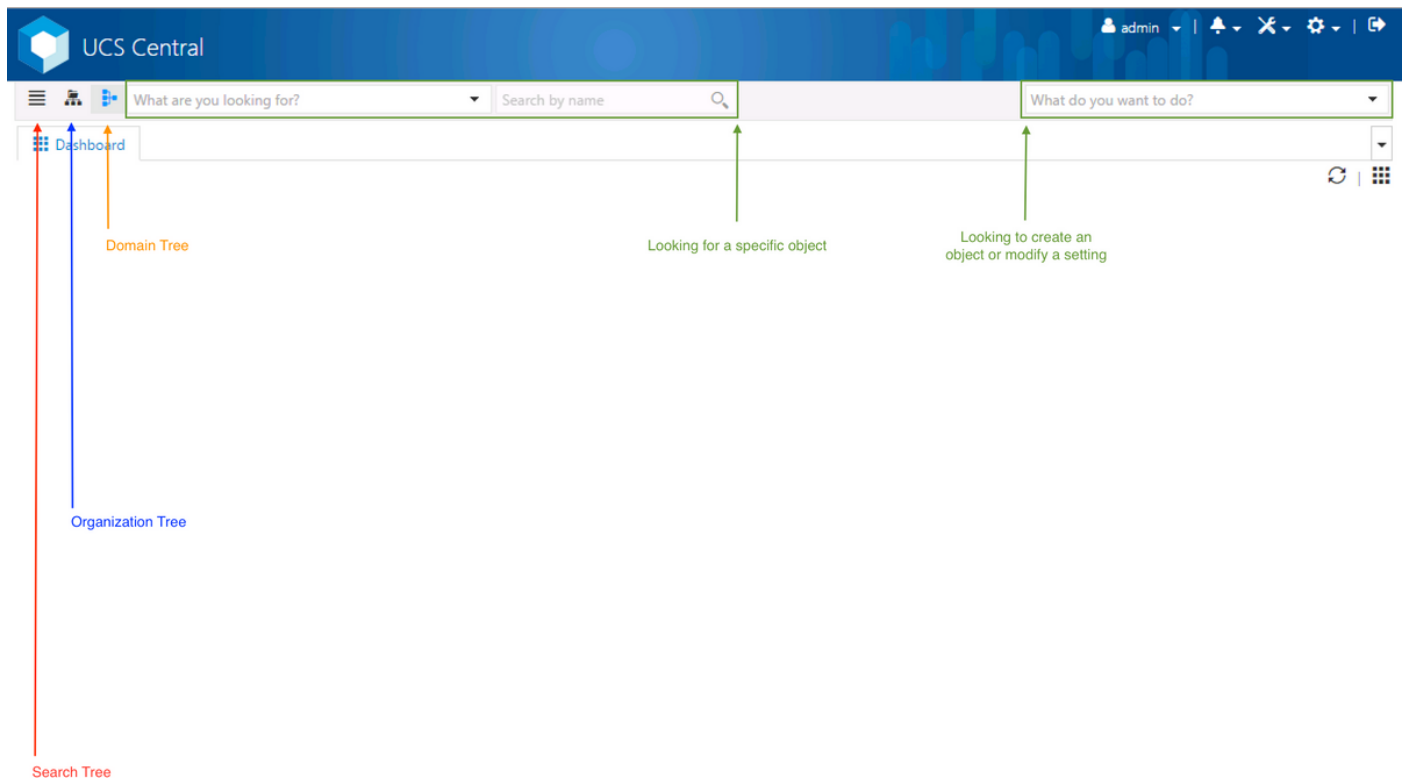
This centralization enables the maintenance of all service profiles in the Cisco UCS domains from one central location in Cisco UCS Central.

When you use a global service profile, you can do the these across the data center:

- Pick a compute element for the service profile from any of the Cisco UCS domains.
- Migrate the service profile from one element to another.
- Select servers from the available global server pools from any of the Cisco UCS domains.
- Associate global resources such as ID pools and policies.
- Reference to any of the global policies in the Cisco UCS domain

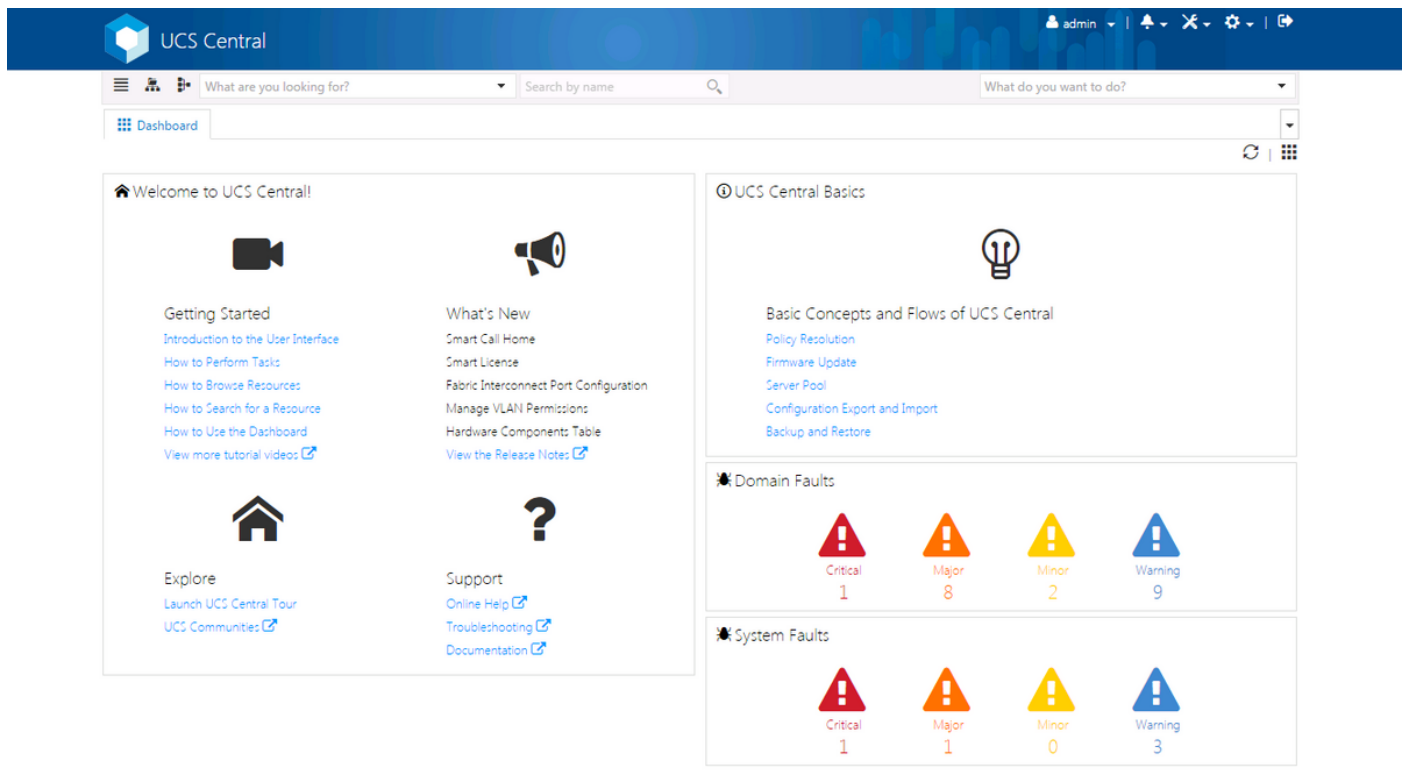
Configure

UCS Central HTML GUI Layout



These are the sections within the Central HTML GUI.

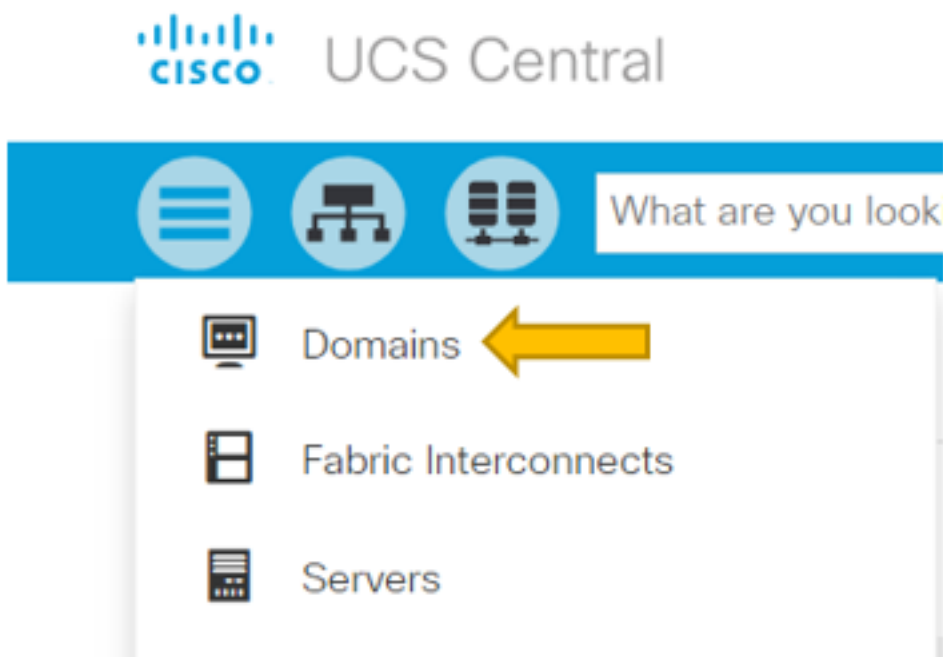
It also provides a brief idea of what each button/selection allows us to do within the HTML5 GUI.



This is the initial page that you will see after logging into the new UCS Central GUI (the Dashboard tab).

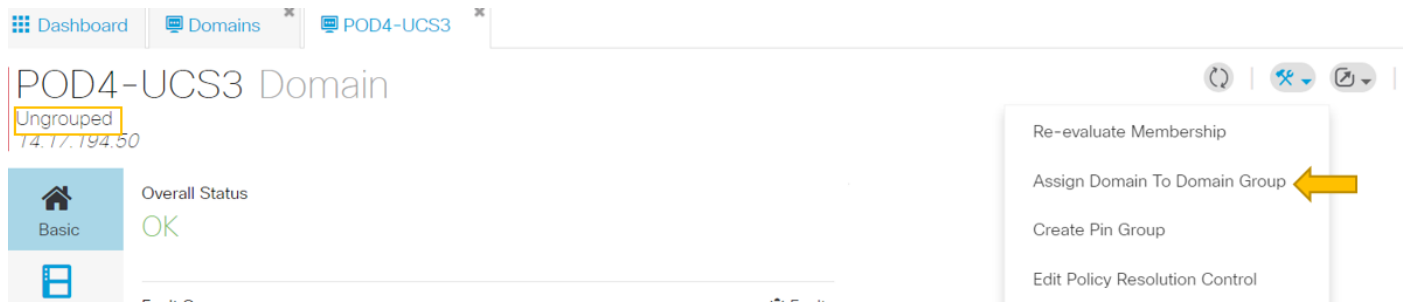
This can be customized for each individual user, however this an example of a default setup.

Assigning a UCS Domain to a Domain Group



Under the Search Tree, click on the Domains selection.

The Domains tab will allow us to select a domain to modify.



When a domain is registered with UCS Central it will be set as an Ungrouped domain.

You can see that in this instance, the selected domain is Ungrouped.

To move the domain into a domain group, select the tools icon and click on Assign Domain to Domain Group from the drop down.

POD4-UCS3 Assign

Domain

POD4-UCS3 ▼

Domain Group Location

Unassigned ▼

Once the Assign Domain to Domain Group option is selected you will see a pop-up like so.

POD4-UCS3 Assign

Domain

POD4-UCS3 ▼

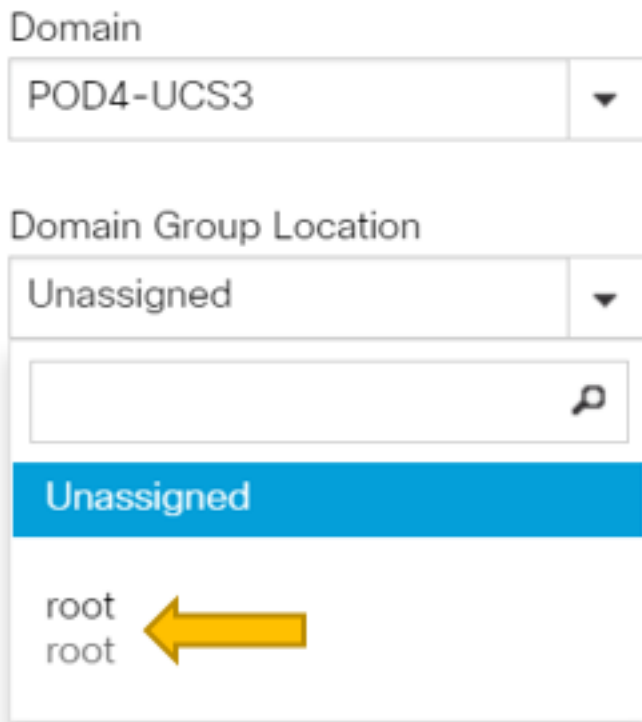
Domain Group Location

Unassigned ▼

Unassigned

root ←

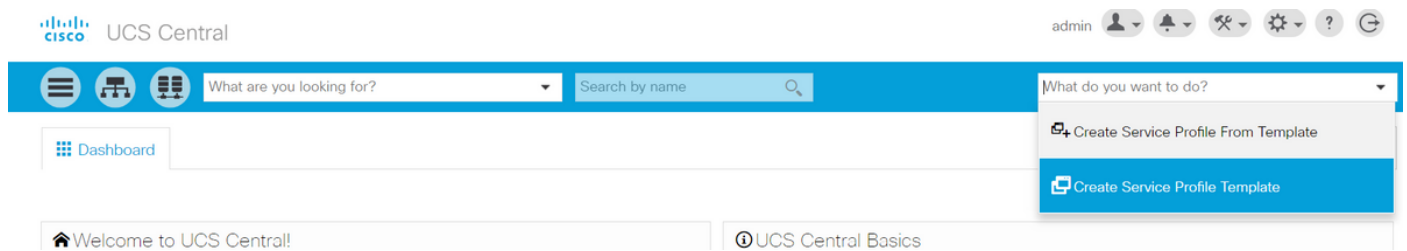
root



Select the Domain Group Location dropdown and then move the domain to the appropriate domain group.

In this example, the root domain group is used.

Creating a Service Profile

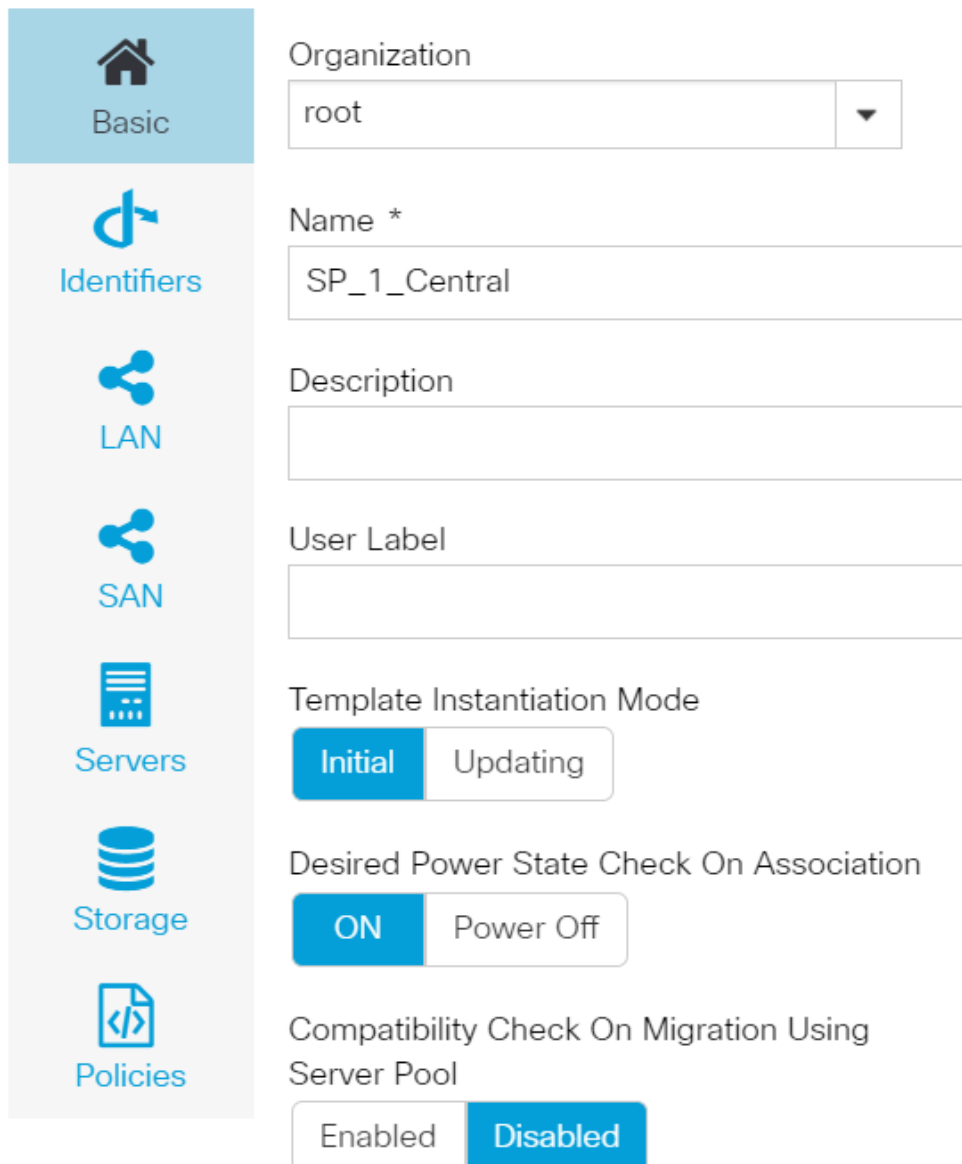


To create a GSP, you must first create a GSP Template.

Since you are looking to create (or modify) an object, which in this example is a GSP template, you go to the top right section and look for Create Service Profile.

From the dropdown, click on Create Service Profile Template

Service Profile Template Create



Organization
root

Name *
SP_1_Central

Description

User Label

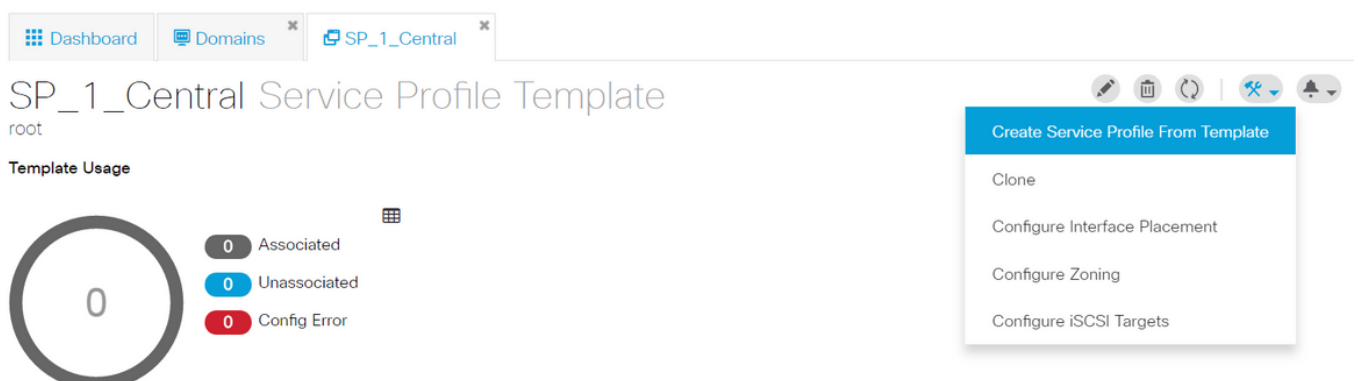
Template Instantiation Mode
Initial Updating

Desired Power State Check On Association
ON Power Off

Compatibility Check On Migration Using Server Pool
Enabled Disabled

This shows the basic information you will see from a GSP Template (or just GSP) tab.

Choose the appropriate settings, just like you would while creating a service profile template in UCSM.



Dashboard Domains SP_1_Central

SP_1_Central Service Profile Template

root

Template Usage

0 Associated
0 Unassociated
0 Config Error

- Create Service Profile From Template
- Clone
- Configure Interface Placement
- Configure Zoning
- Configure iSCSI Targets

Once a service profile template is created, you can now move towards creating a service profile in

UCS Central.

Select the tools option and then click on Create Service Profile From Template from the dropdown to create a GSP.

SP_1_Central Create

root

Basic

Servers

Service Profile Template to Instantiate *

SP_1_Central

Organization *

root

Service Profile Naming Convention

Simple Advanced Manual Entry

No. Of Service Profiles *

2

Service Profile Naming Prefix *

Test

SP_1_Central
root

Template Usage

0 Associated

0 Unassociated

0 Config Error

Settings Status

User Label

A pop up like this one will be seen, similar to what is seen in UCSM.

In this example, two service profiles with a prefix of Test are being created.

If you want to create a GSP with a specific name select the Manual Entry option instead.

Service Profile

Name	Location
Test1	root
Test2	root

1-2 of 2

Advanced Search

SP_1_Central
root

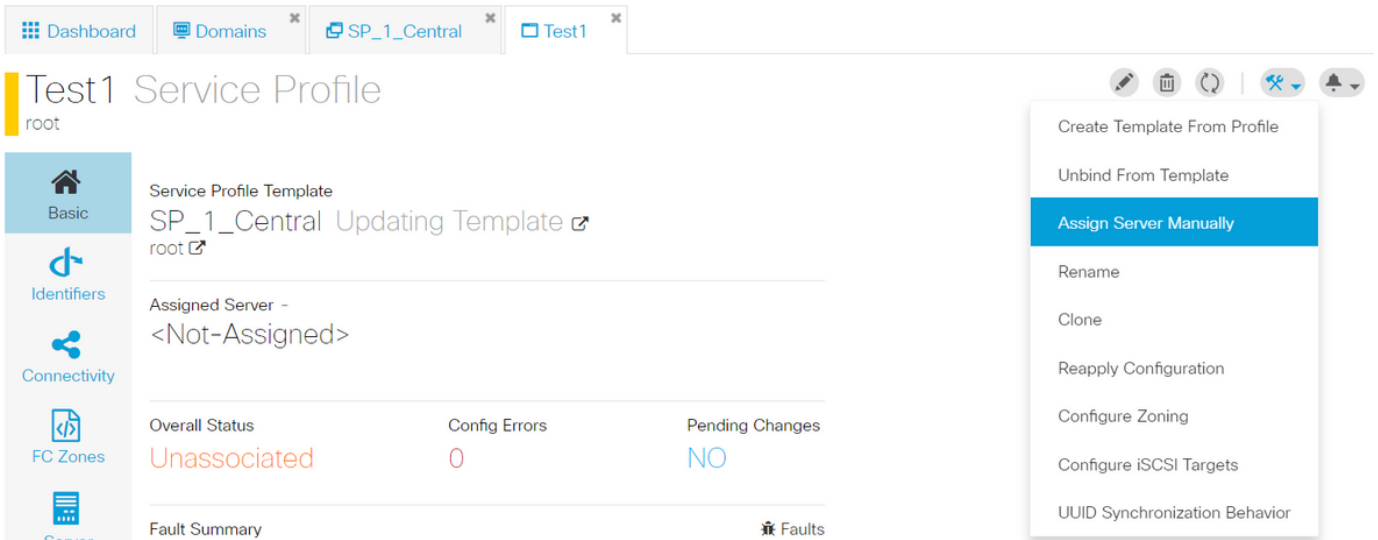
Template Usage

2

You can see that two Service Profile instances have been created.

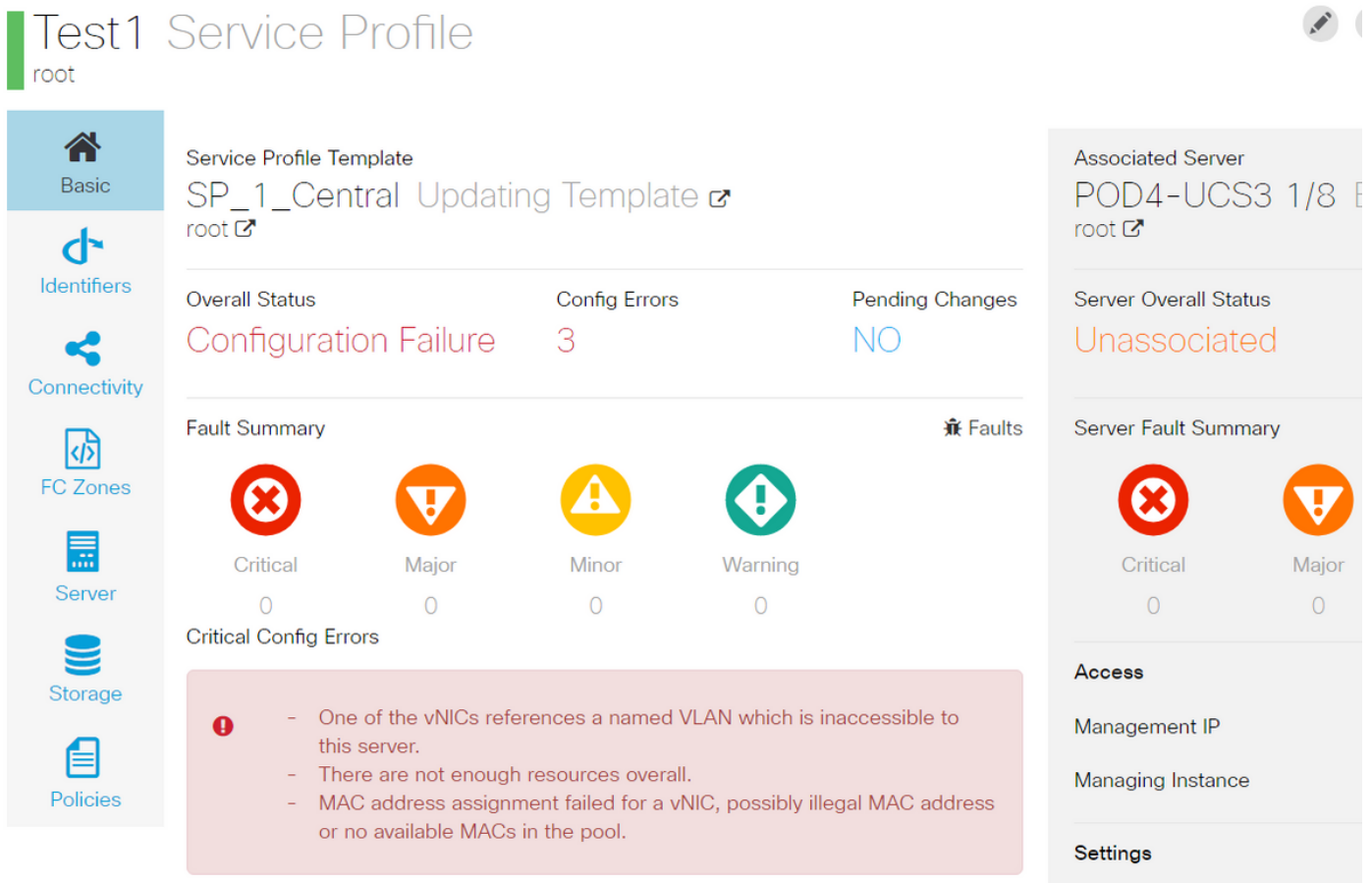
You look for these from the search bar, however you could use the Search Tree on the left as well.

Assigning a GSP



In this example, the option of Assign Server Manually was chosen.

This will bring up a pop up where you can manually assign the profile to a server of our choosing (similar to UCSM).



By default, two vnic's are created even though you never configured vnic's in our service profile creation.

Remember, a vnic is associated with a mac address and has vlan(s) on it, neither of which were defined when you created the service profile.

This gives you an idea as to how you can address these alerts.

The screenshot displays the UCSM configuration interface for a vNIC. On the left, a navigation tree shows 'Test1' expanded to 'vNICs', with 'vNIC 1-fabric-A' selected. The main area is divided into 'Actions' and 'Properties'.

Actions:

- Change MAC Address
- Modify VLANs
- Bind to a Template
- Unbind from a Template
- Reset MAC Address

Properties:


- Name : **1-fabric-A**
- MAC Address : **Derived**
- MAC Pool : **default**
- MAC Pool Instance :
- Fabric ID : Fabric A Fabric B Enable Failover


Additional text at the top right: "a service profile template. To modify this vNIC, please unbind the service profile from its template."


A GSP even with configuration errors, once created should be seen in UCSM as shown.


A Service Profile that is pushed from Central to UCSM, would have green globe beside it.

VLAN Create


Basic


Private VLAN



Access Control


Aliased VLANs

Type

LAN Appliance

Domain Group Location

Please Select 

Name *

Fabric Visibility

Same on A & B (Dual Fabric)

ID *

VLAN Name Overlap Check

Enabled Disabled

VLAN ID Overlap Check





Enabled Disabled

Multicast Policy

Let's now move towards creating a vlan

Vlan-Central-215 Edit

root

 Basic	Fabric Visibility <input type="text" value="Same on A & B (Dual Fabric)"/>
 Private VLAN	ID * <input type="text" value="215"/>
 Access Control	VLAN ID Overlap Check <input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
 Aliased VLANs	Multicast Policy <input type="text"/>

Specify the vlan ID and name the vlan.

Vlan-Central-215 Edit

root

The screenshot shows the Cisco ICM configuration page for 'Vlan-Central-215'. The left sidebar has four tabs: 'Basic' (selected), 'Private VLAN', 'Access Control', and 'Aliased VLANs'. A modal dialog is open, showing a search filter 'Type to Filter...' and a list of records. The first record is 'root', which is checked. The dialog also shows 'Records: 1' and buttons for 'Cancel' and 'Select'.

You have to specify the domain group this vlan would use, until which the vlan won't show up in UCSM.

The next task is to create mac addresses and vnic(s). (Recall, the configuration alert the GSP was throwing)

The screenshot shows the Cisco ICM navigation bar. It includes a search icon and a dropdown menu labeled 'Create MAC Pool'.

MAC Pool Create

The screenshot shows the 'MAC Pool Create' form. The 'Organization' dropdown is set to 'root'. The 'Name' field contains 'Central-MAC'. The 'Description' field is empty.

Begin populating the details for the mac pool as shown.

MAC Pool Create

Basic

MAC Blocks

+ -

MAC Block Start

MAC Block Start	Size
00:25:B5:C0:C1:C2	20

MAC Addresses

Access Controls

Block Utilization

20

■ Available ■ In Use ■ Duplicate

MAC Address	Status
00:25:B5:C0:C1:C2	Available
00:25:B5:C0:C1:C3	Available
00:25:B5:C0:C1:C4	Available
00:25:B5:C0:C1:C5	Available
00:25:B5:C0:C1:C6	Available
00:25:B5:C0:C1:C7	Available
00:25:B5:C0:C1:C8	Available
00:25:B5:C0:C1:C9	Available
00:25:B5:C0:C1:CA	Available
00:25:B5:C0:C1:CB	Available
00:25:B5:C0:C1:CC	Available

Create a block of mac-address as shown

Test1 Edit

root

Basic

Identifiers

LAN

SAN

Servers

Storage

LAN Settings

Policy Advanced

vNICs iSCSI vNICs Connectivity

+ -

vNIC Name

vNIC0

Properties

Manual Template Redundancy Pair

Basic MAC Address VLANs Policies

MAC Address Pool

No selection has been made, hardware default will apply.

<Not-Assigned> derived

Not-Assigned

global-default

Central-MAC

Create vNIC(s) and assign the mac pool (Central-MAC in this example) to it.

Test1 Edit

root

The screenshot shows the 'LAN Settings' interface for 'Test1 Edit' in 'root' mode. The left sidebar contains navigation icons for Basic, Identifiers, LAN, SAN, Servers, Storage, and Policies. The main area is titled 'LAN Settings' and has tabs for 'vNICs', 'iSCSI vNICs', and 'Connectivity'. Under 'vNICs', there is a '+ vNIC Name' section with a list containing 'vNIC0'. A 'Properties' window is open, showing tabs for 'Basic', 'MAC Address', 'VLANs', and 'Policies'. The 'VLANs' tab is active, showing a search box 'Type to Filter...' and a list with 'Vlan-Central-215' checked. A 'Set as Native' checkbox is also visible. A yellow callout box on the right contains the text: 'This is only a reference of a VLAN name. The VLANs will not get resolved until the Service Profile referencing this policy or template is deployed. Once the Service Profile is deployed, the VLANs will resolve by name on the Domain of the associated server.'

Associate the vNIC with the vlan that was created earlier (Vlan-Central-215) in this case.

The screenshot shows the 'Test1 Service Profile' configuration page in 'root' mode. The left sidebar has icons for Basic, Identifiers, Connectivity, FC Zones, Server, and Storage. The main area shows 'Service Profile Template <Not-Bound>'. It displays 'Overall Status' as 'Configuration Failure', 'Config Errors' as '2', and 'Pending Changes' as 'NO'. A 'Fault Summary' section shows four categories: Critical (0), Major (0), Minor (0), and Warning (0). Below this, 'Critical Config Errors' are listed: '- There are not enough resources overall.' and '- Resource ownership conflict.' On the right, the 'Associated Server' is 'POD4-UCS3 1/8 E root'. The 'Server Overall Status' is 'Unassociated'. A 'Server Fault Summary' shows Critical (1), Major (1), Minor (0), and Warning (5). A table at the bottom shows 'Access' and 'Value' for 'Management IP' (14.17.194.68) and 'Manacina Instance' (A). A context menu is open over the 'Error Details' link, with 'Error Details' highlighted by a yellow arrow.

Once done, the service profile still has these configuration failures.

The information is vague in the Critical Config Errors section, to get more details on how to address the alarms, click on Error Details as shown

Test1 Error Details

root

Errors

Resource Ownership Conflict

Resource Ownership Conflict

Error Message



Found a candidate **Adapter Policy** in **org-root/eth-profile-global-default** of registered UCS domain: **14.17.194.50**, whose ownership is local. This conflicts with global policy **org-root/eth-profile-global-default** used in Service Profile.

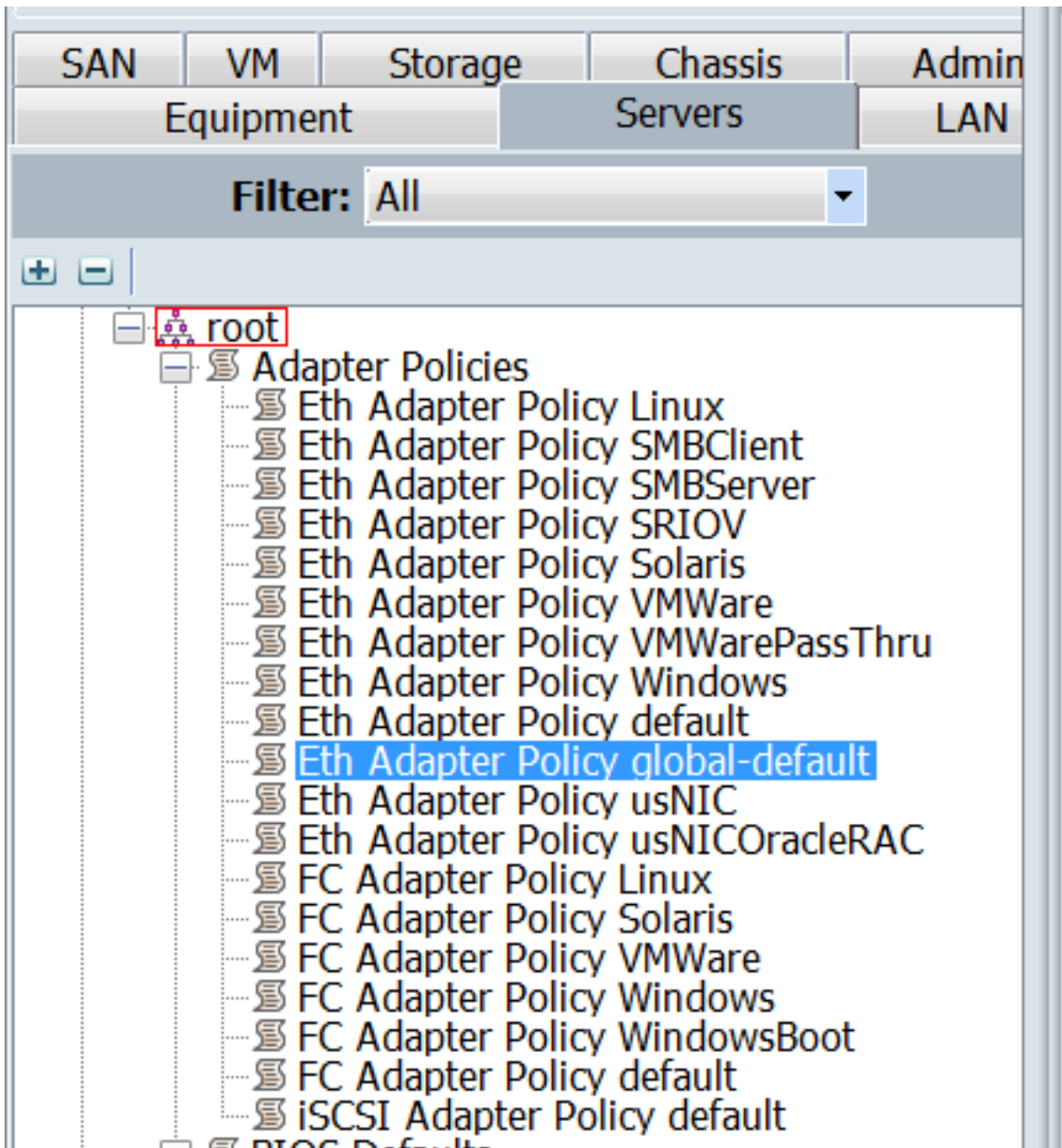
Recommendation



Modify the global Service Profile to reference a different policy, or delete the local policy in the UCS Domain, which might cause other side effect.

This particular domain had an earlier instance of central that was deleted before this one was created, hence leaving duplicate objects, which would have the same repercussions if you were to unregister central from UCSM.

It's highly suggested that you don't ever unregister Central from UCSM to troubleshoot a problem. It's not a troubleshooting step.



One such duplicate object caused by the consequences as explained has been listed, which was the cause of the alarm.

The key take ways from this are:

- If the error messages are vague, look at the Error details section to get more of an insight.
- Never unregister Central from UCSM as a troubleshooting step.

Dashboard | Test1 | Central-MAC

Test1 Service Profile

root

Service Profile Template: <Not-Bound>

Overall Status	Config Errors	Pending Changes
Configuration Failure	1	NO

Fault Summary ⚠️ Faults

Context Menu:

- Create Template From Profile
- Bind To Template
- Assign Server Manually
- Unassign Server
- Rename
- Clone
- Reapply Configuration ←

After taking necessary actions to address the alert, hit Reapply Configuration for the service profile to detect the changes that were made.

Dashboard | Test1

Test1 Service Profile

root

Service Profile Template: <Not-Bound>

Overall Status	Config Errors	Pending Changes
OK	0	NO

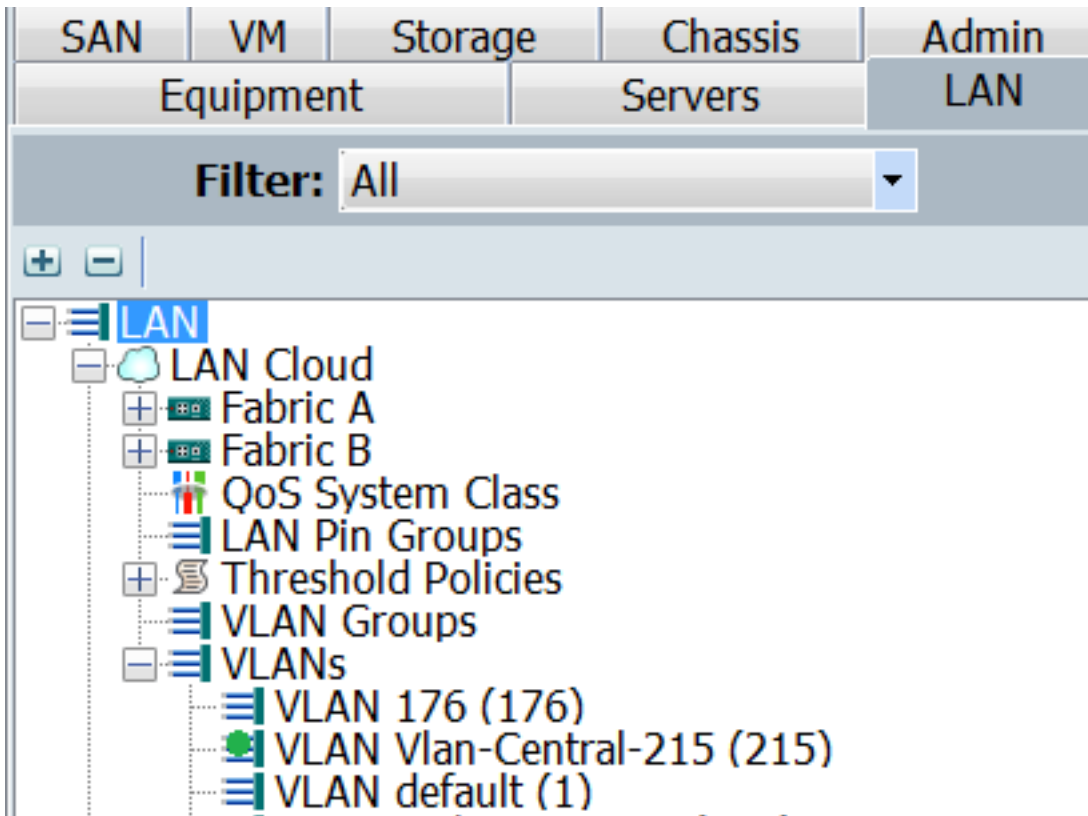
Fault Summary ⚠️ Faults

Fault Summary Legend:

- Critical (Red X icon)
- Major (Orange exclamation mark icon)
- Minor (Yellow exclamation mark icon)
- Warning (Green exclamation mark icon)

Once you are able to address the alerts, the service profile should display an overall status of OK.

This would mean you have successfully addressed the alerts and the service profile has bound itself to the server.



The Vlan created in Central would only show up in UCSM, only when it is active in Central (meaning it is associated with a vNIC)