

Troubleshoot Common Issues during Migration of 6200 Series to 6454 Fabric Interconnect

Contents

[Introduction](#)

[Prerequisites](#)

[Most frequent issues encountered during migration](#)

[Related information and notable bugs](#)

Introduction

This document describes information to troubleshoot FI 6200 to 6400 series migration issues.

Prerequisites

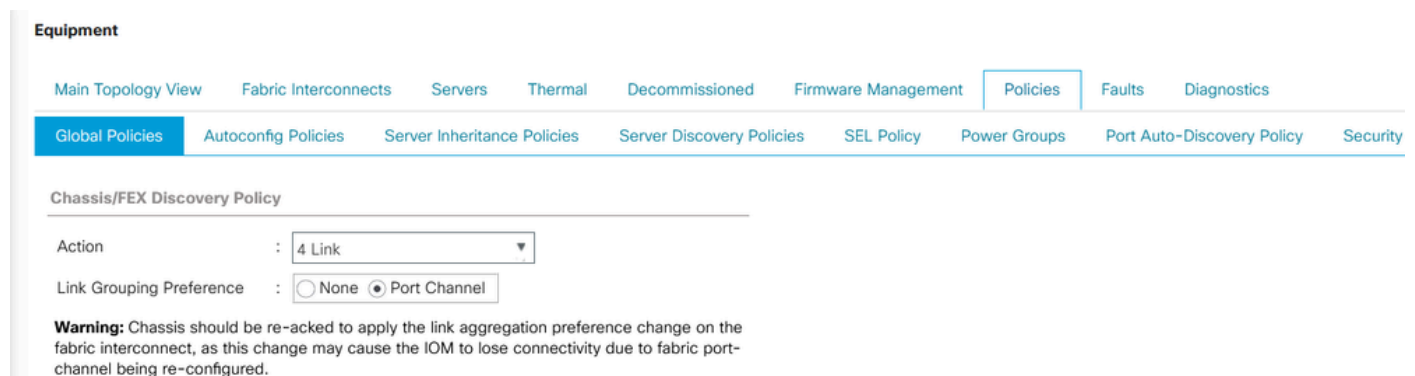
Cisco recommends knowledge of Cisco Unified Computing System (UCS) GUI, fabric interconnects, switch and Direct attached storage.

Please refer to the [Migration guide](#) for the steps on migration and also, verify that the system is compliant with the requirements before beginning the migration process.

Most frequent issues encountered during migration

- Migration fails due to UCS manager version not upgraded to 4.0(1) or above. Cisco UCS Manager Release 4.0 is the bare minimum version that provides support for Cisco UCS 6454 Fabric Interconnects.
- Migration Warnings page will report the incompatibility if the chassis discovery policy is not set to “port channel” mode. UCS 6200 Series Fabric Interconnects support blade server chassis discovery in Port Channel and non-Port Channel modes. Cisco UCS 6400 Series Fabric Interconnects support only Port Channel mode.

Change the chassis discovery policy > link grouping preference to “port-channel” and re-acknowledge the chassis to save the change. To avoid the re-discovery of entire chassis and to avoid taking a downtime, re-acknowledgment of one IOM at a time of given chassis can be done to re-discover the connectivity between IOM and fabric interconnect.



Equipment

Main Topology View Fabric Interconnects Servers Thermal Decommissioned Firmware Management **Policies** Faults Diagnostics

Global Policies Autoconfig Policies Server Inheritance Policies Server Discovery Policies SEL Policy Power Groups Port Auto-Discovery Policy Security

Chassis/FEX Discovery Policy

Action : 4 Link

Link Grouping Preference : None Port Channel

Warning: Chassis should be re-acked to apply the link aggregation preference change on the fabric interconnect, as this change may cause the IOM to lose connectivity due to fabric port-channel being re-configured.

Note: In chassis connectivity policy, the admin state is “global” by default. This setting signifies that chassis inherits this configuration from the chassis discovery policy.

The screenshot shows the configuration page for Chassis 1. The breadcrumb is 'Equipment / Chassis / Chassis 1'. The 'Connectivity Policy' tab is active. Below the breadcrumb, there are navigation tabs: '< ;', 'Installed Firmware', 'SEL Logs', 'Power Control Monitor', 'Connectivity Policy', 'Events', 'FSM', 'Statistics', 'Power', and 'Temperatures >'. The main content area is divided into two sections: 'Chassis Connection Policy, Chassis-1 Fabric-A' and 'Chassis Connection Policy, Chassis-1 Fabric-B'. Each section shows the following fields: 'Chassis ID : 1', 'Fabric ID : A' (for Fabric-A) or 'B' (for Fabric-B), and 'Admin State : None Port Channel Global'.

- Cisco UCS VIC 1455 and 1457 adapters support cables of 10G and 25G speed. However, the cables connecting Cisco UCS VIC 1455 or 1457 adapter ports to each 6454 fabric interconnect must be of uniform speed-either all 10G or all 25G cables. If you connect these adapter ports to a 6454 fabric interconnect through a mix of 10G and 25G cables, UCS rack-mount server discovery fails and ports may go to a suspended state.
- Possible reasons leading to connectivity issues with the storage:

1. Incorrect range of WWN pools

A WWN pool can include only WWNNs or WWPNS in the ranges from 20:00:00:00:00:00:00:00 to 20:FF:00:FF:FF:FF:FF:FF or from 50:00:00:00:00:00:00:00 to 5F:FF:00:FF:FF:FF:FF:FF.

To ensure the uniqueness of the Cisco UCS WWNNs and WWPNS in the SAN fabric, Cisco recommends using these WWN prefixes for all blocks in a pool: 20:00:00:25:B5:XX:XX:XX.

2. VLANs conflict with the reserved VLAN range

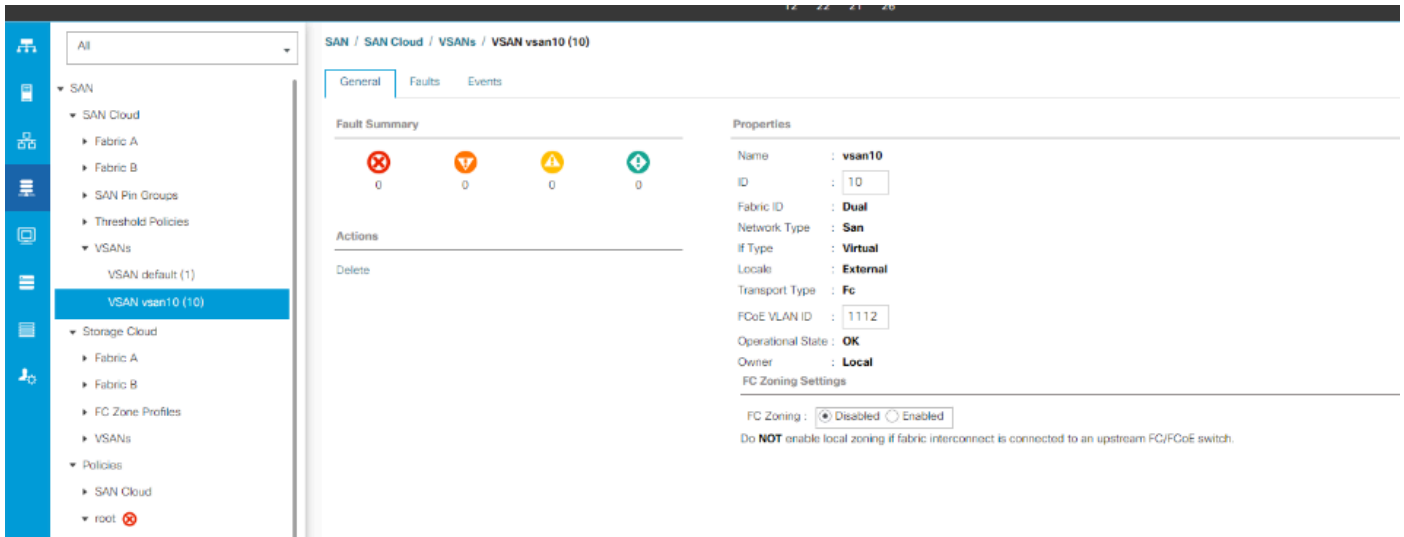
Cisco UCS 6400 Series Fabric Interconnects reserve more VLANs for internal use than UCS 6200 Series Fabric Interconnects. If there are conflicting VLANs, after migration the Reserved VLAN range will be configured but VLANs found in the conflicting range will not be configured.

Note : You cannot create VLANs with IDs from 3968 to 4047 and 4092 to 4096. These ranges of VLAN IDs are reserved.

For Cisco UCS 6400 and 6500 FI Series, VLAN IDs from 1002 to 1005 are reserved for VLAN Trunking Protocol (VTP).

The VLAN IDs you specify must also be supported on the switch that you are using.

Check the FCOE VLAN ID set for VSAN configured on FC interfaces. If they are within the range of reserved VLAN, the ports will fail to come up.



Workarounds to fix the issue

- Use the VLAN ID outside the reserved VLAN range.
- Modify the Reserved VLAN through CLI or UCSM GUI (Changing the reserved VLAN requires a reload of the Cisco UCS 6400 Series Fabric Interconnect for the new values to take effect). Refer to the network guide to execute the change.

Through [CLI](#)

Through [UCSM GUI](#)

3. FC ports has connectivity problem (FC ports are down/in errdisabled state/ lose SYNC intermittently, or receive errors or bad packets) with the upstream device (DAS or switch).

1. Check the FC ports/port-channel link speed set on both ends are same. 8gbps/16gbps/32gbps.
- ii. Check the issues on L1 level. Make sure the transceiver aren't faulty and cable connections are intact between FI and upstream device FC ports.
- iii. Check the compatibility of the transceiver in use on FC ports of FI 6454.

[FI-6454 spec sheet](#)

iv. Port Configuration Mismatch - On Cisco UCS 6400 Series Fabric Interconnects, the Unified Port capability is restricted to first 16 ports. Only ports 1/1-1/16 can be configured as FC. The FC ports must be contiguous, followed by contiguous Ethernet ports.

v. In case of switch N5K or MDS, check its firmware. If older version, suggest upgrading its firmware version to higher one.

vi. Check the fibre channel forwarding mode -

For FC, it must be set to End host mode.

In case of Direct attached storage, Fabric forwarding mode must be set to Switch mode.

Keep in mind, changing the forwarding mode, will reboot the fabric interconnects one by one.

https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/sw/gui/config/guide/141/UCSM_GUI_Configuration

vii. Check the below configuration if 8gbps connectivity is used -

verify that the FC ports fill pattern should be set to “idle” at both ends (FI and corresponding device)

Properties for: FC Interface 1/27



General | Faults | Events

Actions Enable Interface Disable Interface	Properties ID : 27 Fabric ID : A User Label : <input type="text"/> Port Type : Physical Transport Type : Fc Locale : External VSAN : Fabric Dual/vsan default (1) Negotiated Speed : Indeterminate	Slot ID : 1 Network Type : San Role : Network Port : sys/switch-A/slot-1/switch-fc/port-27 Fill Pattern : <input checked="" type="radio"/> Idle <input type="radio"/> Arbff
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OK Apply Cancel Help

If Fabric interconnect is connected to a Direct attached storage and there's no option to manually change the fill-pattern to “idle” on it (for example, in DELL EMC, the speed and fill pattern are auto negotiated with its peer device and cannot change manually), suggest the following options to continue –

Using higher link speed (16gbps, 32gbps) between FI and DAS. change the transceivers on FC ports that support higher speed.

Adding a switch, in between FI and DAS. Configure the fill pattern to idle on the switch at 8gbps speed.

Cisco Bug ID [CSCvr81863](#) FI 6454 - Direct Attached Storage is not supported at 8GB

Changing the fill pattern to “idle” for 8gbps speed on upstream switch:

By default, the MDS, N5K/N6K, and UCS FI 6300 series devices use ARBFF. N9K and UCS FI 6400 series only support IDLE as the 8G fill pattern.

```
switch# configure terminal
switch(config)# interface fc x/y
switch(config-if)# switchport fill-pattern IDLE speed 8000
```

Note: This command causes traffic disruption on the specified interface.

Related information and notable bugs

1. DAS configuration

<https://www.cisco.com/c/en/us/support/docs/servers-unified-computing/ucs-infrastructure-ucs-manager-software/116082-config-ucs-das-00.html>

2. UCS-FI 6454,64108 and 6536 port at 8G gets error disabled. [Cisco bug ID CSCvj31676](#)
3. VLAN compression group count exceeds the limit alert when migrating from 6200 to 6400. [Cisco bug ID CSCvt10269](#)
4. Uplink switch connected to the FI interface interface-id is not configured in STP portfast/edge mode. [Cisco bug ID CSCwh32564](#)
5. Check the chassis discovery policy has link grouping preference as “ port-channel” enabled. [Cisco bug ID CSCwh84645](#)
6. During 6200 to 6400 FI migration, after bringing up the 6400, IOMs are offline (evac is ON). [Cisco bug ID CSCvs04425](#)
7. UCS 6454 won't establish port channel to upstream N5k on FCoE configuration. [Cisco bug ID CSCwi07580](#)