Migrate Cisco UCS Fabric Interconnect 6248 to 6332-16UP

Contents

Introduction

Prerequisites

- Requirements
- Components Used
  - Hardware
  - Firmware

Background Information

Migration Pre-checks

Migration Procedure

Known Issues

Related Information

Introduction

This document describes how to migrate Cisco Unified Computing System (UCS) Fabric Interconnect (FI) Series 6248 to 6332-16UP.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Troubleshooting Cisco UCS Manager Initial Configuration

Components Used

Hardware

- UCS 6332-16UP 40-port Fabric Interconnect
- UCS 6248UP 48-port Fabric Interconnect

Firmware

- Infrastructure firmware 6248 FI 3.2(3d)
- 6332 FI 3.1(3b)
- Software/firmware bundle that is required for the 6332 FIs to match with the image version on the 6248 FIs

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Note: The firmware image can be downloaded from Software download. Use the UCS Hardware and Software Compatibility matrix to verify that the firmware is compatible with the hardware for your model.

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, ensure that you understand the potential impact of any command.

Background Information

The 6248 provides 32 SFP+ universal ports that can operate as 1/10-Gbps fixed Ethernet ports or as 1/2/4/8-Gbps Fibre Channel ports. However, the 6332 provides only 16 SFP+ ports. If you use more than 16 SFP+ ports on the 6248, you must use the breakout ports on the 6332 to meet your requirement for SFP+ ports.

Specifications for the UCS-FI-6332-16UP:

- **Ports 1 through 16** are SFP+ universal ports that can operate as 1/10-Gbps fixed Ethernet ports or as 4/8/16-Gbps Fibre Channel ports.
- **Ports 17 through 34** operate as 40-Gbps QSFP+ ports or as eighteen 4 x 10-Gbps SFP+ breakout ports. Alternatively, they can be outfitted with QSA adapters to provide 10-Gbps operation.
- **Ports 35 through 40** operate as fixed 40-Gbps QSFP+ ports.

Migration Pre-checks

- Confirm that the current setup consists of the two 6248 FIs in place, configured in a single cluster.
- Verify that the cluster high availability (HA) state is ready and that all processes are functioning correctly.

```
UCS-B# connect local-mgmt
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2009, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php

UCS-B(local-mgmt)# show cluster extended-state
Cluster Id: 0x573a0798c87511e9-0xab7c00defbdbe401

Start time: Tue May 19 20:11:15 2020
Last election time: Sun May 31 16:44:47 2020

B: UP, PRIMARY
A: UP, SUBORDINATE

B: memb state UP, lead state PRIMARY, mgmt services state: UP
A: memb state UP, lead state SUBORDINATE, mgmt services state: UP
   heartbeat state PRIMARY_OK

INTERNAL NETWORK INTERFACES:
eth1, UP
eth2, UP

HA READY
Detailed state of the device selected for HA storage:
Chassis 1, serial: FOX2204P7K8, state: active
Server 1, serial: WZP22080SEL, state: active
UCS-B(local-mgmt)#
```

HA should be in the READY state and management services for both FIs should be UP

Migration Procedure

Note: Verify the migration pre-checks before you begin the migration procedure.

1. Identify the subordinate 6248 FI in the cluster and evacuate it.
2. For the subordinate FI:
    - Remove the connections from the chassis.
    - Remove the L1-L2 with the other 6248 FI and prepare it for replacement with the new 6332 FI.
3. Plug in the first 6332 FI with power cables and connect a console cable in order to bring up the first

6332 FI in standalone mode.

> **Note**: You must bring up the first 6332 FI in standalone mode in order to upgrade its firmware to sync it with the current 6248 FI firmware. If you do not bring up the first 6332 FI in standalone mode, the units do not sync their firmware due to the difference in their image types.

4. Get the GUI up for the standalone FI 6332 and upgrade the infrastructure firmware if it is not already matched.
5. Connect the 6332 FI to the chassis to ensure that at least one device is connected. This connection provides access to the SEEPROM in order to establish HA between the current FI and the new FI.

> **Note**: This condition is necessary for HA. Without the connected device(s), you get errors about failed HA even if the L1-L2 connections are done and the firmware is matched.

6. Configure the ports on the 6332 FI as server and network to establish the connections.
7. Erase the configuration on the 6332 FI and use the console connection to prepare it to be added to the cluster. Also ensure that L1-L2 are connected.
8. Use the console to allow the FI to be added as an FI to the current cluster.
9. Use the console or GUI method for the configuration. Enter the mgmt IP address.
10. Wait for the FI to come up completely and for HA to be ready.
11. Verify the pmon state. After the status for both FIs is good, the second FI is ready for replacement.

```
UCS-B(local-mgmt)# show pmon state

SERVICE NAME             STATE     RETRY(MAX)    EXITCODE    SIGNAL    CORE
------------             -----     ----------    --------    ------    ----
svc_sam_controller     running           0(4)           0         0      no
svc_sam_dme            running           0(4)           0         0      no
svc_sam_dcosAG         running           0(4)           0         0      no
svc_sam_bladeAG        running           0(4)           0         0      no
svc_sam_portAG         running           0(4)           0         0      no
svc_sam_statsAG        running           0(4)           0         0      no
svc_sam_hostagentAG    running           0(4)           0         0      no
svc_sam_nicAG          running           0(4)           0         0      no
svc_sam_licenseAG      running           0(4)           0         0      no
svc_sam_extvmmAG       running           0(4)           0         0      no
httpd.sh               running           0(4)           0         0      no
httpd_cimc.sh          running           0(4)           0         0      no
svc_sam_sessionmgrAG   running           0(4)           0         0      no
svc_sam_pamProxy       running           0(4)           0         0      no
dhcpd                  running           0(4)           0         0      no
sam_core_mon           running           0(4)           0         0      no
svc_sam_rsdAG          running           0(4)           0         0      no
svc_sam_svcmonAG       running           0(4)           0         0      no
UCS-B(local-mgmt)#
```

All processes should be in running state

12. Proceed with cluster failover to 6332 FI as primary.

13. Replace the other 6248 FI in a similar manner.

> **Note**: You do not need to upgrade the second 6332 FI in standalone mode. The first 6332 FI can now sync the firmware since the images are the same type and there is not a large difference in the firmware on the two devices.

14. Make the connections to the second 6332 FI:
    - Replace the other 6248 FI with the second 6332 FI.
    - Add the second 6332 FI to the cluster and use the console connection to set it up.
15. Use the GUI to verify the cluster state.

Known Issues

If server ports on the 6332 FI go into SDP timeout/SFP mismatch error and the error occurs only for one of the two ports connected to each chassis: Leave the connections as they were after multiple unsuccessful attempts to clear the faults. After the 6332 FI is added to the cluster, the errors clear automatically when the connections are used for discovery.

Related Information

- **Using Fabric Evacaution in UCS during Firmware Upgrades**
- **Cisco UCS Manager GUI Configuration Guide**
- **Cisco UCS Manager Firmware Management Guide**
- **Technical Support & Documentation - Cisco Systems**