設定軟體
Install and maintain

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設定軟體

為Cisco 9332D-GX2B 交換器設定軟體工作流程

若要安裝和設定Cisco 9332D-GX2B 交換器的軟體以及安裝或升級參考設定檔 (RCF)，請依照下列步驟操作：

1. **"配置 9332D-GX2B 交換機"**

設定Cisco 9332D-GX2B 交換器。

2. **"準備安裝 NX-OS 軟體和 RCF"**

在Cisco 9332D-GX2B 交換器上安裝Cisco NX-OS 軟體和參考設定檔 (RCF)。

3. **"安裝或升級 NX-OS 軟體"**

下載並安裝或升級Cisco 9332D-GX2B 交換器上的 NX-OS 軟體。

4. **"安裝或升級 RCF"**

首次設定Cisco 9332D-GX2B 交換器後安裝或升級 RCF。您也可以使用此程序升級您的 RCF 版本。

5. **"驗證Cisco 9332D-GX2B 交換器上是否啟用了 SSH"**

驗證Cisco 9332D-GX2B 交換器上是否啟用了 SSH，以便與乙太網路交換器健康監視器 (CSHM) 和日誌收集功能一起使用。

6. **"將交換器重設為出廠預設值"**

清除Cisco 9332D-GX2B 交換器設定。

交換器配置完成後，請前往"啟動 AFX 1K 儲存系統"。

配置 9332D-GX2B 交換機

請依照下列步驟設定Cisco Nexus 9332D-GX2B 交換器。

開始之前

確保您擁有：

- 已開啟交換器電源。
- 在安裝現場存取 HTTP、FTP 或 TFTP 伺服器，以下載適用的 NX-OS 和參考設定檔 (RCF) 版本。

- 適用的NX-OS版本，可從以下網址下載： "Cisco軟體下載"頁。

> - NX-OS 10.4.2 是ONTAP叢集中Cisco Nexus 9332D-GX2B 交換器唯一支援的版本。
> - 請勿將您的 NX-OS 版本升級或降級為不支援的版本；目前僅支援 10.4.2。

- 適用的許可證、網路和設定資訊以及線纜。
- 可從NetApp支援網站下載適用的NetApp共用網路和管理網路 RCF。 "mysupport.netapp.com" 。所有Cisco共享網路和管理網路交換器均採用標準Cisco出廠預設設定。這些交換器也具有目前版本的 NX-OS 軟體，但未載入 RCF。
- "所需的交換器和ONTAP文檔"。

步驟

1. 執行共用網路交換器的初始設定。

   首次啟動交換器時，請對以下初始設定問題提供相應的答案。您網站的安全性原則定義了要啟用的回應和服務。

迅速的	回覆
中止自動配置並繼續進行正常設定？（是/否）	請回答「是」。預設值為否。
您是否希望強制執行安全密碼標準？（是/否）	請回答「是」。預設值為“是”。
請輸入管理者密碼。	預設密碼為「admin」；您必須建立一個新的、強密碼。弱密碼可能會被拒絕。
您想進入基本設定對話框嗎？（是/否）	在交換器的初始設定階段，請回答「是」。
建立另一個登入帳戶？（是/否）	答案取決於您網站關於備用管理員的政策。預設值為*否*。
配置唯讀 SNMP 團體字串？（是/否）	回答“不”。預設值為否。
配置讀寫 SNMP 團體字串？（是/否）	回答“不”。預設值為否。
請輸入交換器名稱。	請輸入交換器名稱，字數限制為 63 個字母數字字元。
繼續進行帶外（mgmt0）管理配置？（是/否）	在該提示出現時，請回答「是」（預設值）。在 mgmt0 IPv4 位址提示字元處，輸入您的 IP 位址：ip_address。
配置預設網關？（是/否）	請回答「是」。在預設閘道的 IPv4 位址提示字元處，輸入您的預設閘道。

迅速的	回覆
配置進階 IP 選項？（是/否）	回答“不”。預設值為否。
啟用 Telnet 服務？（是/否）	回答“不”。預設值為否。
已啟用 SSH 服務？（是/否）	請回答「是」。預設值為“是”。 使用乙太網路交換器健康監視器 (CSHM) 時，建議使用 SSH 進行日誌收集。為了提高安全性，建議使用 SSHv2。
請輸入要產生的 SSH 金鑰類型（dsa/rsa/rsa1）。	預設值為 **rsa**。
請輸入密鑰位數（1024-2048）。	請輸入1024到2048之間的密鑰位數。
配置NTP伺服器？（是/否）	回答“不”。預設值為否。
配置預設介面層（L3/L2）	請用*L2*回覆。預設值為 L2。
配置交換器連接埠介面的預設狀態（關閉/不關閉）	回覆 **noshut**。預設為 noshut。
設定 CoPP 系統設定檔（嚴格/中/寬鬆/嚴格）	回覆時請使用 **strict**。預設為嚴格。
您想修改配置嗎？（是/否）	此時您應該可以看到新的配置。請檢查並對您剛剛輸入的配置進行必要的更改。如果對配置滿意，請在提示時回答「否」。如果要編輯配置設置，請回覆「是」。
使用此配置並儲存？（是/否）	回覆“是”以儲存配置。這會自動更新啟動鏡像和系統鏡像。 如果此時不儲存配置，下次重新啟動交換器時，所有變更都會失效。

2. 在設定結束時顯示的介面中，確認您所做的配置選擇，並確保儲存配置。
3. 檢查共用網路交換器上的軟體版本，如有必要，請從 NetApp 官網下載NetApp支援的軟體版本到交換器。"Cisco軟體下載"頁。

下一步是什麼？

配置好交換器之後，你 "準備安裝NX-OS軟體和RCF"。

準備安裝 NX-OS 軟體和 RCF

在安裝 NX-OS 軟體和參考設定檔 (RCF) 之前，請依照下列步驟操作。

關於範例

本流程中的範例使用以下開關和節點命名規則：

- 這兩個Cisco交換器的名稱分別是 cs1 和 cs2。
- 節點名稱為node1-01、node1-02、node1-03和node1-04。
- 集群 LIF 名稱為：
  - node1-01 的 node1-01_clus1 和 node1-01_clus2
  - node1-02 的 node1-02_clus1 和 node1-02_clus2
  - node1-03 的 node1-03_clus1 和 node1-03_clus2
  - node1-04 的 node1-04_clus1 和 node1-04_clus2
- 這 `cluster1::*>`prompt 指示叢集名稱。

關於此任務

流程需要同時使用ONTAP指令和Cisco Nexus 9000 系列交換器指令；除非另有說明，否則使用ONTAP指令。

步驟

1. 如果此叢集上啟用了AutoSupport ，則透過呼叫AutoSupport訊息來抑制自動建立案例： `system node autosupport invoke -node * -type all -message MAINT=x h`

   其中 x 為維護窗口的持續時間（小時）。

   AutoSupport訊息會通知技術支援此維護任務，以便在維護視窗期間抑制自動建立案例。

2. 將權限級別變更為高級，並在提示繼續時輸入 **y**：

   ```
   set -privilege advanced
   ```

   進階提示(`*>`出現。

3. 檢查各港口的行政及營運狀況。

   a. 集群連接埠

      i. 顯示每個節點為每個交換器配置了多少個叢集互連接口：

      ```
      network device-discovery show -protocol cdp
      ```

顯示範例

```
cluster1::*> network device-discovery show -protocol cdp
Node/       Local  Discovered
Protocol    Port   Device (LLDP: ChassisID) Interface
Platform
----------- ------ ----------------------- ----------------
----------------
node1-01/cdp
            e10a   cs1(FLMXXXXXXXX)         Ethernet1/16/3
N9K-C9332D-GX2B
            e10b   cs2(FDOXXXXXXXX)         Ethernet1/16/3
N9K-C9332D-GX2B
            e11a   cs1(FLMXXXXXXXX)         Ethernet1/16/4
N9K-C9332D-GX2B
            e11b   cs2(FDOXXXXXXXX)         Ethernet1/16/4
N9K-C9332D-GX2B
            e1a    cs1(FLMXXXXXXXX)         Ethernet1/16/1
N9K-C9332D-GX2B
            e1b    cs2(FDOXXXXXXXX)         Ethernet1/16/1
N9K-C9332D-GX2B
            .
            .
            .
            e7a    cs1(FLMXXXXXXXX)         Ethernet1/16/2
N9K-C9332D-GX2B
            e7b    cs2(FDOXXXXXXXX)         Ethernet1/16/2
N9K-C9332D-GX2B

node1-02/cdp
            e10a   cs1(FLMXXXXXXXX)         Ethernet1/16/3
N9K-C9332D-GX2B
            e10b   cs2(FDOXXXXXXXX)         Ethernet1/16/3
N9K-C9332D-GX2B
            e11a   cs1(FLMXXXXXXXX)         Ethernet1/16/4
N9K-C9332D-GX2B
            e11b   cs2(FDOXXXXXXXX)         Ethernet1/16/4
N9K-C9332D-GX2B
            e1a    cs1(FLMXXXXXXXX)         Ethernet1/16/1
N9K-C9332D-GX2B
            e1b    cs2(FDOXXXXXXXX)         Ethernet1/16/1
N9K-C9332D-GX2B
            .
            .
            .
```

```
            e7a    cs1(FLM284504N6)         Ethernet1/16/2
N9K-C9332D-GX2B
            e7b    cs1(FDO2846056X)         Ethernet1/16/2
N9K-C9332D-GX2B
.
.
.
```

ii. 顯示網路連接埠屬性：

```
network port show -ipspace Cluster
```

顯示範例

```
cluster1::*> network port show -ipspace Cluster

Node: node1-01

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false


Node: node1-02

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false


Node: node1-03

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
```

```
healthy false


Node: node1-04

Ignore
                                                            Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false

8 entries were displayed.
```

iii. 顯示有關集群 LIF 的資訊：

```
network interface show -vserver Cluster
```

顯示範例

```
cluster1::*> network interface show -vserver Cluster

            Logical       Status     Network
Current   Current Is
Vserver     Interface     Admin/Oper Address/Mask       Node
Port    Home
----------- ------------- ---------- ------------------
--------- ------- ----
Cluster
            node1-01_clus1 up/up     169.254.36.44/16   node1-
01  e7a     true
            node1-01_clus2 up/up     169.254.7.5/16     node1-
01  e7b     true
            node1-02_clus1 up/up     169.254.197.206/16 node1-
02  e7a     true
            node1-02_clus2 up/up     169.254.195.186/16 node1-
02  e7b     true
            node1-03_clus1 up/up     169.254.192.49/16  node1-
03  e7a     true
            node1-03_clus2 up/up     169.254.182.76/16  node1-
03  e7b     true
            node1-04_clus1 up/up     169.254.59.49/16   node1-
04  e7a     true
            node1-04_clus2 up/up     169.254.62.244/16  node1-
04  e7b     true

8 entries were displayed.
```

b. **HA** 連接埠

i. 顯示有關 HA 連接埠的資訊：

```
ha interconnect status show -node <node-name>
```

顯示範例

```
cluster1::*> ha interconnect status show -node node1-01
  (system ha interconnect status show)

                       Node: node1-01
               Link 0 Status: up
               Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                       Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                  Port Name: e1a-17
                        MTU: 4096
            Link Information: ACTIVE


Interconnect Port 1 :
                  Port Name: e1b-18
                        MTU: 4096
            Link Information: ACTIVE

cluster1::*> ha interconnect status show -node node1-02
  (system ha interconnect status show)

                       Node: node1-02
               Link 0 Status: up
               Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                       Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                  Port Name: e1a-17
                        MTU: 4096
            Link Information: ACTIVE


Interconnect Port 1 :
```

```
                  Port Name: e1b-18
                        MTU: 4096
           Link Information: ACTIVE
.
.
.
```

a. 儲存連接埠

i. 顯示儲存連接埠資訊：

```
storage port show -port-type ENET
```

顯示範例

```
cluster1::*> storage port show -port-type ENET

                                     Speed
Node                Port Type  Mode    (Gb/s) State    Status
------------------ ---- ----- ------- ------ --------
-----------
node1-01
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-02
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-03
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
node1-04
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
16 entries were displayed.
```

b. 儲存架連接埠

i. 驗證所有儲存架連接埠是否處於正常狀態：

```
storage shelf port show
```

顯示範例

```
cluster1::*> storage shelf port show

Shelf ID Module State        Internal?
-------- -- ------ ---------- ---------
1.1
         0 A      connected    false
         1 A      connected    false
         2 A      connected    false
         3 A      connected    false
         4 A      connected    false
         5 A      connected    false
         6 A      connected    false
         7 A      connected    false
         8 B      connected    false
         9 B      connected    false
        10 B      connected    false
        11 B      connected    false
        12 B      connected    false
        13 B      connected    false
        14 B      connected    false
        15 B      connected    false

16 entries were displayed.
```

ii. 驗證所有儲存架連接埠的連線狀態：

```
storage shelf port show -fields remote-device,remote-
port,connector-state
```

顯示範例

```
cluster1::*> storage shelf port show -fields remote-
device,remote-port,connector-state

shelf id connector-state remote-port    remote-device
----- -- -------------- -------------- -----------------
1.1   0  connected       Ethernet1/17/1 CX9332D-cs1
1.1   1  connected       Ethernet1/15/1 CX9364D-cs1
1.1   2  connected       Ethernet1/17/2 CX9332D-cs1
1.1   3  connected       Ethernet1/15/2 CX9364D-cs1
1.1   4  connected       Ethernet1/17/3 CX9332D-cs1
1.1   5  connected       Ethernet1/15/3 CX9364D-cs1
1.1   6  connected       Ethernet1/17/4 CX9332D-cs1
1.1   7  connected       Ethernet1/15/4 CX9364D-cs1
1.1   8  connected       Ethernet1/19/1 CX9332D-cs1
1.1   9  connected       Ethernet1/17/1 CX9364D-cs1
1.1   10 connected       Ethernet1/19/2 CX9332D-cs1
1.1   11 connected       Ethernet1/17/2 CX9364D-cs1
1.1   12 connected       Ethernet1/19/3 CX9332D-cs1
1.1   13 connected       Ethernet1/17/3 CX9364D-cs1
1.1   14 connected       Ethernet1/19/4 CX9332D-cs1
1.1   15 connected       Ethernet1/17/4 CX9364D-cs1

16 entries were displayed.
```

4. 驗證遠端集群介面的連接性。

   a. 你可以使用 `network interface check cluster-connectivity show`用於顯示叢集連接性可訪問性檢查詳細資訊的命令：

   ```
   network interface check cluster-connectivity show
   ```

顯示範例

```
cluster1::*> network interface check cluster-connectivity show

                                  Source           Destination
Packet
Node   Date                       LIF              LIF
Loss
------ -------------------------- ---------------
-------------- -----------
node1-01
       6/4/2025 03:13:33 -04:00   node1-01_clus2  node1-02_clus1
none
       6/4/2025 03:13:34 -04:00   node1-01_clus2  node1-02_clus1
none


node1-02
       6/4/2025 03:13:33 -04:00   node1-02_clus2  node1-01_clus1
none
       6/4/2025 03:13:34 -04:00   node1-02_clus2  node1-01_clus2
none
.
.
.
```

b. 或者，您可以使用 `cluster ping-cluster -node <node-name>`檢查連接性的命令：

```
cluster ping-cluster -node <node-name>
```

顯示範例

```
cluster1::*> cluster ping-cluster -node local
Host is node1-04
Getting addresses from network interface table...
Cluster node1-01_clus1 169.254.36.44 node1-01 e7a
Cluster node1-01_clus2 169.254.7.5   node1-01 e7b
Cluster node1-02_clus1 169.254.197.206 node1-02 e7a
Cluster node1-02_clus2 169.254.195.186 node1-02 e7b
Cluster node1-03_clus1 169.254.192.49 node1-03 e7a
Cluster node1-03_clus2 169.254.182.76 node1-03 e7b
Cluster node1-04_clus1 169.254.59.49 node1-04 e7a
Cluster node1-04_clus2 169.254.62.244 node1-04 e7b
Local = 169.254.59.49 169.254.62.244
Remote = 169.254.36.44 169.254.7.5 169.254.197.206 169.254.195.186
169.254.192.49 169.254.182.76
Cluster Vserver Id = 4294967293
Ping status:
............
Basic connectivity succeeds on 12 path(s)
Basic connectivity fails on 0 path(s)
................................................
Detected 9000 byte MTU on 12 path(s):
    Local 169.254.59.49 to Remote 169.254.182.76
    Local 169.254.59.49 to Remote 169.254.192.49
    Local 169.254.59.49 to Remote 169.254.195.186
    Local 169.254.59.49 to Remote 169.254.197.206
    Local 169.254.59.49 to Remote 169.254.36.44
    Local 169.254.59.49 to Remote 169.254.7.5
    Local 169.254.62.244 to Remote 169.254.182.76
    Local 169.254.62.244 to Remote 169.254.192.49
    Local 169.254.62.244 to Remote 169.254.195.186
    Local 169.254.62.244 to Remote 169.254.197.206
    Local 169.254.62.244 to Remote 169.254.36.44
    Local 169.254.62.244 to Remote 169.254.7.5
Larger than PMTU communication succeeds on 12 path(s)
RPC status:
6 paths up, 0 paths down (tcp check)
6 paths up, 0 paths down (udp check)
```

5. 驗證所有叢集 LIF 上是否啟用了自動復原命令：

```
network interface show -vserver Cluster -fields auto-revert
```

顯示範例

```
cluster1::*> network interface show -vserver Cluster -fields auto-
revert
        Logical
Vserver Interface          Auto-revert
------- ------------------ -----------
Cluster node1-01_clus1     true
Cluster node1-01_clus2     true
Cluster node1-02_clus1     true
Cluster node1-02_clus2     true
Cluster node1-03_clus1     true
Cluster node1-03_clus2     true
Cluster node1-04_clus1     true
Cluster node1-04_clus2     true

8 entries were displayed.
```

下一步是什麼？

準備好安裝 NX-OS 軟體和 RCF 後，您 "安裝或升級 NX-OS 軟體"。

安裝或升級 NX-OS 軟體

請依照下列步驟在 Nexus 9332D-GX2B 交換器上安裝或升級 NX-OS 軟體。

審查要求

開始之前

驗證以下內容：

- 完成該程式"準備安裝 NX-OS 和 RCF"。
- 交換器配置的目前備份。
- 一個功能齊全的群集（日誌中沒有錯誤或類似問題）。

建議的文檔

- "Cisco乙太網路交換器頁面"

  請查閱交換器相容性表格，以了解支援的ONTAP和 NX-OS 版本。

- "軟體升級與降級指南"

  有關Cisco交換器升級和降級程序的完整文檔，請參閱Cisco網站上提供的相應軟體和升級指南。

- "Cisco Nexus 9000 和 3000 升級和 ISSU 矩陣"

根據您目前和目標版本，提供有關 Nexus 9000 系列交換器上Cisco NX-OS 軟體的中斷式升級/降級的資訊。

在頁面上，選擇“中斷式升級”，然後從下拉清單中選擇目前版本和目標版本。

關於範例

本流程中的範例使用以下開關和節點命名規則：

- 這兩個Cisco交換器的名稱分別是 cs1 和 cs2。
- 節點名稱為node1-01、node1-02、node1-03和node1-04。
- 群集 LIF 名稱稱為 node1-01_clus1、node1-01_clus2、node1-02_clus1、node1-02_clus2、node1-03_clus1、node1-03_clus2、node1-04_clus1 和 node1-04_clus2。
- 這 `cluster1::*>`prompt 指示叢集名稱。

安裝軟體

流程需要同時使用ONTAP指令和Cisco Nexus 9000 系列交換器指令；除非另有說明，否則使用ONTAP指令。

- NX-OS 10.4.2 是ONTAP叢集中Cisco Nexus 9332D-GX2B 交換器唯一支援的版本。
- 請勿將您的 NX-OS 版本升級或降級為不支援的版本；目前僅支援 10.4.2。

步驟

1. 將交換器連接到管理網路。
2. 使用 ping 指令驗證與託管 NX-OS 軟體和 RCF 的伺服器的連接性。

   顯示範例

   此範例驗證交換器可以存取 IP 位址為 172.19.2.1 的伺服器：

   ```
   cs2# ping 172.19.2.1
   Pinging 172.19.2.1 with 0 bytes of data:

   Reply From 172.19.2.1: icmp_seq = 0. time= 5910 usec.
   ```

3. 顯示每個節點上連接到叢集交換器的叢集連接埠：

   ```
   network device-discovery show
   ```

顯示範例

```
cluster1::*> network device-discovery show

Node/       Local  Discovered
Protocol    Port   Device (LLDP: ChassisID) Interface
Platform
----------- ------ ----------------------- ----------------
----------------
node1-01/cdp
            e10a   cs1(FLMXXXXXXXX)         Ethernet1/16/3    N9K-
C9332D-GX2B
            e10b   cs2(FDOXXXXXXXX)         Ethernet1/16/3    N9K-
C9332D-GX2B
            e11a   cs1(FLMXXXXXXXX)         Ethernet1/16/4    N9K-
C9332D-GX2B
            e11b   cs2(FDOXXXXXXXX)         Ethernet1/16/4    N9K-
C9332D-GX2B
            e1a    cs1(FLMXXXXXXXX)         Ethernet1/16/1    N9K-
C9332D-GX2B
            e1b    cs2(FDOXXXXXXXX)         Ethernet1/16/1    N9K-
C9332D-GX2B
            .
            .
            .
            e7a    cs1(FLMXXXXXXXX)         Ethernet1/16/2    N9K-
C9332D-GX2B
            e7b    cs2(FDOXXXXXXXX)         Ethernet1/16/2    N9K-
C9332D-GX2B

node1-01/lldp
            e10a   cs1 (c8:60:8f:xx:xx:xx)  Ethernet1/16/3    -
            e10b   cs2 (04:e3:87:xx:xx:xx)  Ethernet1/16/3    -
            e11a   cs1 (c8:60:8f:xx:xx:xx)  Ethernet1/16/4    -
            e11b   cs2 (04:e3:87:xx:xx:xx)  Ethernet1/16/4    -
            e1a    cs1 (c8:60:8f:xx:xx:xx)  Ethernet1/16/1    -
            e1b    cs2 (04:e3:87:xx:xx:xx)  Ethernet1/16/1    -
            .
            .
            .
            e7a    cs1 (c8:60:8f:34:78:d3)  Ethernet1/16/2    -
            e7b    cs2 (04:e3:87:19:a2:59)  Ethernet1/16/2    -
.
.
.
```

4. 檢查各港口的行政及營運狀況。

    a. 集群連接埠

        i. 確認叢集所有連接埠均已啟動且狀態正常：

```
network port show -ipspace Cluster
```

顯示範例

```
cluster1::*> network port show -ipspace Cluster

Node: node1-01

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false

Node: node1-02

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false

Node: node1-03


Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/10000
healthy  false
e7b       Cluster      Cluster          up   9000  auto/10000
healthy  false
```

```
Node: node1-04

Ignore
                                                          Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/10000
healthy  false
e7b       Cluster      Cluster          up   9000  auto/10000
healthy  false
```

ii. 確認所有叢集介面（LIF）都位於主連接埠上：

```
network interface show -role cluster
```

顯示範例

```
cluster1::*> network interface show -role cluster

            Logical         Status     Network
Current   Current Is
Vserver     Interface       Admin/Oper Address/Mask       Node
Port    Home
----------- --------------- ---------- ------------------
--------- ------- ----
Cluster
            node1-01_clus1  up/up      169.254.36.44/16
node1-01  e7a     true
            node1-01_clus2  up/up      169.254.7.5/16
node1-01  e7b     true
            node1-02_clus1  up/up      169.254.197.206/16
node1-02  e7a     true
            node1-02_clus2  up/up      169.254.195.186/16
node1-02  e7b     true
            node1-03_clus1  up/up      169.254.192.49/16
node1-03  e7a     true
            node1-03_clus2  up/up      169.254.182.76/16
node1-03  e7b     true
            node1-04_clus1  up/up      169.254.59.49/16
node1-04  e7a     true
            node1-04_clus2  up/up      169.254.62.244/16
node1-04  e7b     true

8 entries were displayed.
```

iii. 確認集群顯示兩個集群交換器的資訊：

```
system cluster-switch show -is-monitoring-enabled-operational true
```

顯示範例

```
cluster1::*> system cluster-switch show -is-monitoring-enabled
-operational true

Switch                       Type               Address
Model
---------------------------- ------------------
---------------- ---------------
cs2(FDOXXXXXXXX)             cluster-network    10.228.137.233
N9K-C9332D-GX2B
     Serial Number: FDOXXXXXXXX
      Is Monitored: true
            Reason: None
  Software Version: Cisco Nexus Operating System (NX-OS)
Software, Version
                    10.4(2)
    Version Source: CDP/ISDP


cs1(FLMXXXXXXXX)              cluster-network   10.228.137.253
N9K-C9332D-GX2B
     Serial Number: FLMXXXXXXXX
      Is Monitored: true
            Reason: None
  Software Version: Cisco Nexus Operating System (NX-OS)
Software, Version
                    10.4(2)
    Version Source: CDP/ISDP

2 entries were displayed.
```

b. **HA** 連接埠

i. 驗證所有 HA 連接埠是否處於正常運作狀態：

```
ha interconnect status show -node <node-name>
```

顯示範例

```
cluster1::*> ha interconnect status show -node node1-01
  (system ha interconnect status show)

                       Node: node1-01
               Link 0 Status: up
               Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                       Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                  Port Name: e1a-17
                        MTU: 4096
            Link Information: ACTIVE


Interconnect Port 1 :
                  Port Name: e1b-18
                        MTU: 4096
            Link Information: ACTIVE

cluster1::*> ha interconnect status show -node node1-02
  (system ha interconnect status show)

                       Node: node1-02
               Link 0 Status: up
               Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                       Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                  Port Name: e1a-17
                        MTU: 4096
            Link Information: ACTIVE


Interconnect Port 1 :
```

```
                  Port Name: e1b-18
                        MTU: 4096
           Link Information: ACTIVE
.
.
.
```

a. 儲存連接埠

i. 驗證所有儲存連接埠均處於正常狀態：

```
storage port show -port-type ENET
```

顯示範例

```
cluster1::*> storage port show -port-type ENET


                                     Speed
Node                Port Type  Mode    (Gb/s) State    Status
------------------ ---- ----- ------- ------ --------
-----------
node1-01
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-02
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-03
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
node1-04
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
16 entries were displayed.
```

b. 儲存架連接埠

i. 驗證所有儲存架連接埠是否處於正常狀態：

```
storage shelf port show
```

顯示範例

```
cluster1::*> storage shelf port show

Shelf ID Module State        Internal?
-------- -- ------ ---------- ---------
1.1
         0 A      connected    false
         1 A      connected    false
         2 A      connected    false
         3 A      connected    false
         4 A      connected    false
         5 A      connected    false
         6 A      connected    false
         7 A      connected    false
         8 B      connected    false
         9 B      connected    false
        10 B      connected    false
        11 B      connected    false
        12 B      connected    false
        13 B      connected    false
        14 B      connected    false
        15 B      connected    false

16 entries were displayed.
```

ii. 驗證所有儲存架連接埠的連線狀態：

```
storage shelf port show -fields remote-device,remote-
port,connector-state
```

顯示範例

```
cluster1::*> storage shelf port show -fields remote-
device,remote-port,connector-state

shelf id connector-state remote-port    remote-device
----- -- -------------- -------------- -----------------
1.1   0  connected       Ethernet1/17/1 CX9332D-cs1
1.1   1  connected       Ethernet1/15/1 CX9364D-cs1
1.1   2  connected       Ethernet1/17/2 CX9332D-cs1
1.1   3  connected       Ethernet1/15/2 CX9364D-cs1
1.1   4  connected       Ethernet1/17/3 CX9332D-cs1
1.1   5  connected       Ethernet1/15/3 CX9364D-cs1
1.1   6  connected       Ethernet1/17/4 CX9332D-cs1
1.1   7  connected       Ethernet1/15/4 CX9364D-cs1
1.1   8  connected       Ethernet1/19/1 CX9332D-cs1
1.1   9  connected       Ethernet1/17/1 CX9364D-cs1
1.1   10 connected       Ethernet1/19/2 CX9332D-cs1
1.1   11 connected       Ethernet1/17/2 CX9364D-cs1
1.1   12 connected       Ethernet1/19/3 CX9332D-cs1
1.1   13 connected       Ethernet1/17/3 CX9364D-cs1
1.1   14 connected       Ethernet1/19/4 CX9332D-cs1
1.1   15 connected       Ethernet1/17/4 CX9364D-cs1

16 entries were displayed.
```

5. 停用群集 LIF 的自動回滾功能。叢集 LIF 會故障轉移到夥伴叢集交換機，並在您對目標交換器執行升級程序時保留在該交換器上：

```
network interface modify -vserver Cluster -lif * -auto-revert false
```

6. 將 NX-OS 軟體和 EPLD 映像複製到 Nexus 9332D-GX2B 交換器。

顯示範例

```
cs2# copy sftp: bootflash: vrf management
Enter source filename: /code/nxos.10.4.2.bin
Enter hostname for the sftp server: 172.19.2.1
Enter username: root

Outbound-ReKey for 172.19.2.1:22
Inbound-ReKey for 172.19.2.1:22
root@172.19.2.1's password:
sftp> progress
Progress meter enabled
sftp> get   /code/nxos.10.4.2.bin  /bootflash/nxos.10.4.2.bin
/code/nxos.10.4.2.bin  100% 1261MB   9.3MB/s   02:15
sftp> exit
Copy complete, now saving to disk (please wait)...
Copy complete.

cs2# copy sftp: bootflash: vrf management
Enter source filename: /code/n9000-epld.10.4.2.F.img
Enter hostname for the sftp server: 172.19.2.1
Enter username: user1

Outbound-ReKey for 172.19.2.1:22
Inbound-ReKey for 172.19.2.1:22
user1@172.19.2.1's password:
sftp> progress
Progress meter enabled
sftp> get   /code/n9000-epld.10.4.2.F.img  /bootflash/n9000-
epld.10.4.2.F.img
/code/n9000-epld.10.4.2.F.img  100%  161MB   9.5MB/s   00:16
sftp> exit
Copy complete, now saving to disk (please wait)...
Copy complete.
```

7. 請確認NX-OS軟體的運作版本：

   ```
   show version
   ```

顯示範例

```
cs2# show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (C) 2002-2025, Cisco and/or its affiliates.
All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under their
own
licenses, such as open source.  This software is provided "as is,"
and unless
otherwise stated, there is no warranty, express or implied,
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limited to warranties of merchantability and fitness for a
particular purpose.
Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or
GNU General Public License (GPL) version 3.0  or the GNU
Lesser General Public License (LGPL) Version 2.1 or
Lesser General Public License (LGPL) Version 2.0.
A copy of each such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://opensource.org/licenses/gpl-3.0.html and
http://www.opensource.org/licenses/lgpl-2.1.php and
http://www.gnu.org/licenses/old-licenses/library.txt.


Software
  BIOS: version 01.14
  NXOS: version 10.4(1) [Feature Release]
  Host NXOS: version 10.4(1)
  BIOS compile time:  11/25/2024
  NXOS image file is: bootflash:///nxos64-cs.10.4.1.F.bin
  NXOS compile time:  11/30/2023 12:00:00 [12/14/2023 05:25:50]
  NXOS boot mode: LXC


Hardware
  cisco Nexus9000 C9332D-GX2B Chassis
  Intel(R) Xeon(R) CPU D-1633N @ 2.50GHz with 32802156 kB of memory.
  Processor Board ID FLMXXXXXXXX
  Device name: cs2
  bootflash:  115802886 kB
```

```
Kernel uptime is 5 day(s), 2 hour(s), 13 minute(s), 21 second(s)


Last reset at 3580 usecs after Thu Jun  5 15:55:08 2025
  Reason: Reset Requested by CLI command reload
  System version: 10.4(1)
  Service:


plugin
  Core Plugin, Ethernet Plugin


Active Package(s):

cs2#
```

8. 安裝 NX-OS 鏡像。

   安裝鏡像檔案後，每次交換器重新啟動時都會載入該檔案。

顯示範例

```
cs2# install all nxos bootflash:nxos.10.4.2.bin

Installer will perform compatibility check first. Please wait.
Installer is forced disruptive

Verifying image bootflash:/nxos.10.4.2.bin for boot variable "nxos".
[] 100% -- SUCCESS

Verifying image type.
[] 100% -- SUCCESS

Preparing "nxos" version info using image
bootflash:/nxos.10.4.2.bin.
[] 100% -- SUCCESS

Preparing "bios" version info using image
bootflash:/nxos.10.4.2.bin.
[] 100% -- SUCCESS

Performing module support checks.
[] 100% -- SUCCESS

Notifying services about system upgrade.
[] 100% -- SUCCESS


Compatibility check is done:
Module  Bootable  Impact          Install-type  Reason
------  --------  --------------- ------------  ---------
  1     yes       Disruptive      Reset         Default upgrade is
not hitless



Images will be upgraded according to following table:

Module   Image    Running-Version(pri:alt)                 New-
Version         Upg-Required
------- --------- ----------------------------------------
------------------- ------------
  1      nxos     10.4(1)                                  10.4(2)
Yes
  1      bios     xx.xx.:xx.xx                             xxx
No
```

```
Switch will be reloaded for disruptive upgrade.

Do you want to continue with the installation (y/n)? [n] y

Install is in progress, please wait.

Performing runtime checks.
[] 100% -- SUCCESS

Setting boot variables.
[] 100% -- SUCCESS

Performing configuration copy.
[] 100% -- SUCCESS

Module 1: Refreshing compact flash and upgrading
bios/loader/bootrom.
Warning: please do not remove or power off the module at this time.
[] 100% -- SUCCESS

Finishing the upgrade, switch will reboot in 10 seconds.
```

9. 交換器重新啟動後，請先驗證NX-OS軟體的新版本：

   `show version`

顯示範例

```
cs2# show version
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (C) 2002-2025, Cisco and/or its affiliates.
All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under their
own
licenses, such as open source.  This software is provided "as is,"
and unless
otherwise stated, there is no warranty, express or implied,
including but not
limited to warranties of merchantability and fitness for a
particular purpose.
Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or
GNU General Public License (GPL) version 3.0  or the GNU
Lesser General Public License (LGPL) Version 2.1 or
Lesser General Public License (LGPL) Version 2.0.
A copy of each such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://opensource.org/licenses/gpl-3.0.html and
http://www.opensource.org/licenses/lgpl-2.1.php and
http://www.gnu.org/licenses/old-licenses/library.txt.


Software
  BIOS: version 01.14
  NXOS: version 10.4(2) [Feature Release]
  Host NXOS: version 10.4(2)
  BIOS compile time:  11/25/2024
  NXOS image file is: bootflash:///nxos64-cs.10.4.2.F.bin
  NXOS compile time:  11/30/2023 12:00:00 [12/14/2023 05:25:50]
  NXOS boot mode: LXC


Hardware
  cisco Nexus9000 C9332D-GX2B Chassis
  Intel(R) Xeon(R) CPU D-1633N @ 2.50GHz with 32802156 kB of memory.
  Processor Board ID FLMXXXXXXXX
  Device name: cs2
  bootflash:  115802886 kB
```

```
Kernel uptime is 5 day(s), 2 hour(s), 13 minute(s), 21 second(s)


Last reset at 3580 usecs after Thu Jun  5 15:55:08 2025
  Reason: Reset Requested by CLI command reload
  System version: 10.4(2)
  Service:


plugin
  Core Plugin, Ethernet Plugin


Active Package(s):

cs2#
```

10. 升級EPLD鏡像並重新啟動交換器。

顯示範例

```
cs2# show version module 1 epld

EPLD Device                          Version
---------------------------------------
MI   FPGA                             0x7
IO   FPGA                             0x17
MI   FPGA2                            0x2
GEM  FPGA                             0x2
GEM  FPGA                             0x2
GEM  FPGA                             0x2
GEM  FPGA                             0x2

cs2# install epld bootflash:n9000-epld.10.4.2.F.img module all
Compatibility check:
Module        Type         Upgradable        Impact    Reason
------  ------------------ ----------------- --------- -----------
     1         SUP         Yes       disruptive  Module Upgradable

Retrieving EPLD versions.... Please wait.
Images will be upgraded according to following table:
Module  Type   EPLD              Running-Version   New-Version  Upg-
Required
------- ------ ----------------- ----------------- ------------
------------
     1  SUP    MI FPGA           0x07              0x07         No
     1  SUP    IO FPGA           0x17              0x19         Yes
     1  SUP    MI FPGA2          0x02              0x02         No
The above modules require upgrade.
The switch will be reloaded at the end of the upgrade
Do you want to continue (y/n) ?  [n] y

Proceeding to upgrade Modules.

Starting Module 1 EPLD Upgrade

Module 1 : IO FPGA [Programming] : 100.00% (     64 of      64
sectors)
Module 1 EPLD upgrade is successful.
Module   Type  Upgrade-Result
-------- ----- --------------
     1   SUP   Success

EPLDs upgraded.

Module 1 EPLD upgrade is successful.
```

11. 交換器重新啟動後，再次登入並驗證新版本的 EPLD 是否已成功載入。

    顯示範例

```
cs2# show version module 1 epld

EPLD Device                          Version
---------------------------------------
MI   FPGA                             0x7
IO   FPGA                             0x19
MI   FPGA2                            0x2
GEM  FPGA                             0x2
GEM  FPGA                             0x2
GEM  FPGA                             0x2
GEM  FPGA                             0x2
```

12. 驗證叢集上所有連接埠的健康狀況。

    a. 集群連接埠

        i. 確認叢集中所有節點的叢集連接埠均已啟動且運作狀況良好：

```
network port show -ipspace Cluster
```

顯示範例

```
cluster1::*> network port show -ipspace Cluster

Node: node1-01

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/10000
healthy  false
e7b       Cluster      Cluster          up   9000  auto/10000
healthy  false

Node: node1-02

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/10000
healthy  false
e7b       Cluster      Cluster          up   9000  auto/10000
healthy  false

Node: node1-03

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false
```

```
Node: node1-04

Ignore
                                                          Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false
```

ii. 從叢集驗證交換器運作狀況：

```
network device-discovery show -protocol cdp
```

```
system cluster-switch show -is-monitoring-enabled-operational true
```

顯示範例

```
cluster1::*> network device-discovery show -protocol cdp

node1-02/cdp
            e10a   cs1(FLMXXXXXXXX)         Ethernet1/16/3
N9K-C9332D-GX2B
            e10b   cs2(FDOXXXXXXXX)         Ethernet1/16/3
N9K-C9332D-GX2B
            e11a   cs1(FLMXXXXXXXX)         Ethernet1/16/4
N9K-C9332D-GX2B
            e11b   cs2(FDOXXXXXXXX)         Ethernet1/16/4
N9K-C9332D-GX2B
            e1a    cs1(FLMXXXXXXXX)         Ethernet1/16/1
N9K-C9332D-GX2B
            e1b    cs2(FDOXXXXXXXX)         Ethernet1/16/1
N9K-C9332D-GX2B
            .
            .
            .
            e7a    cs1(FLM284504N6)         Ethernet1/16/2
N9K-C9332D-GX2B
            e7b    cs2(FDO2846056X)         Ethernet1/16/2
N9K-C9332D-GX2B

node1-01/cdp
            e10a   cs1(FLMXXXXXXXX)         Ethernet1/16/3
N9K-C9332D-GX2B
            e10b   cs2(FDOXXXXXXXX)         Ethernet1/16/3
N9K-C9332D-GX2B
            e11a   cs1(FLMXXXXXXXX)         Ethernet1/16/4
N9K-C9332D-GX2B
            e11b   cs2(FDOXXXXXXXX)         Ethernet1/16/4
N9K-C9332D-GX2B
            e1a    cs1(FLMXXXXXXXX)         Ethernet1/16/1
N9K-C9332D-GX2B
            e1b    cs2(FDOXXXXXXXX)         Ethernet1/16/1
N9K-C9332D-GX2B
           .
           .
           .
            e7a    cs1(FLMXXXXXXXX)         Ethernet1/16/2
N9K-C9332D-GX2B
            e7b    cs2(FDOXXXXXXXX)         Ethernet1/16/2
N9K-C9332D-GX2B
.
```

```
.
.

cluster1::*> system cluster-switch show -is-monitoring-enabled
-operational true
Switch                      Type               Address
Model
--------------------------- ------------------
--------------- ---------------
cs2(FDOXXXXXXXX)            cluster-network    10.228.137.233
N9K-C9332D-GX2B
     Serial Number: FDOXXXXXXXX
      Is Monitored: true
            Reason: None
  Software Version: Cisco Nexus Operating System (NX-OS)
Software, Version
                    10.4(2)
    Version Source: CDP/ISDP


cs1(FLMXXXXXXXX)             cluster-network   10.228.137.253
N9K-C9332D-GX2B
     Serial Number: FLMXXXXXXXX
      Is Monitored: true
            Reason: None
  Software Version: Cisco Nexus Operating System (NX-OS)
Software, Version
                    10.4(2)
    Version Source: CDP/ISDP
```

b. **HA** 連接埠

i. 驗證所有 HA 連接埠是否處於正常運作狀態：

```
ha interconnect status show -node <node-name>
```

顯示範例

```
cluster1::*> ha interconnect status show -node node1-01
  (system ha interconnect status show)

                        Node: node1-01
                Link 0 Status: up
                Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                        Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                   Port Name: e1a-17
                         MTU: 4096
             Link Information: ACTIVE


Interconnect Port 1 :
                   Port Name: e1b-18
                         MTU: 4096
             Link Information: ACTIVE

cluster1::*> ha interconnect status show -node node1-02
  (system ha interconnect status show)

                        Node: node1-02
                Link 0 Status: up
                Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                        Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                   Port Name: e1a-17
                         MTU: 4096
             Link Information: ACTIVE


Interconnect Port 1 :
```

```
                  Port Name: e1b-18
                        MTU: 4096
           Link Information: ACTIVE
.
.
.
```

a. 儲存連接埠

i. 驗證所有儲存連接埠均處於正常狀態：

```
storage port show -port-type ENET
```

顯示範例

```
cluster1::*> storage port show -port-type ENET


                                     Speed
Node                Port Type  Mode    (Gb/s) State    Status
------------------ ---- ----- ------- ------ --------
-----------
node1-01
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-02
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-03
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
node1-04
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
16 entries were displayed.
```

b. 儲存架連接埠

i. 驗證所有儲存架連接埠是否處於正常狀態：

```
storage shelf port show
```

顯示範例

```
cluster1::*> storage shelf port show

Shelf ID Module State        Internal?
-------- -- ------ ---------- ---------
1.1
         0 A      connected    false
         1 A      connected    false
         2 A      connected    false
         3 A      connected    false
         4 A      connected    false
         5 A      connected    false
         6 A      connected    false
         7 A      connected    false
         8 B      connected    false
         9 B      connected    false
        10 B      connected    false
        11 B      connected    false
        12 B      connected    false
        13 B      connected    false
        14 B      connected    false
        15 B      connected    false

16 entries were displayed.
```

ii. 驗證所有儲存架連接埠的連線狀態：

```
storage shelf port show -fields remote-device,remote-
port,connector-state
```

顯示範例

```
cluster1::*> storage shelf port show -fields remote-
device,remote-port,connector-state

shelf id connector-state remote-port    remote-device
----- -- -------------- -------------- -----------------
1.1   0  connected       Ethernet1/17/1 CX9332D-cs1
1.1   1  connected       Ethernet1/15/1 CX9364D-cs1
1.1   2  connected       Ethernet1/17/2 CX9332D-cs1
1.1   3  connected       Ethernet1/15/2 CX9364D-cs1
1.1   4  connected       Ethernet1/17/3 CX9332D-cs1
1.1   5  connected       Ethernet1/15/3 CX9364D-cs1
1.1   6  connected       Ethernet1/17/4 CX9332D-cs1
1.1   7  connected       Ethernet1/15/4 CX9364D-cs1
1.1   8  connected       Ethernet1/19/1 CX9332D-cs1
1.1   9  connected       Ethernet1/17/1 CX9364D-cs1
1.1   10 connected       Ethernet1/19/2 CX9332D-cs1
1.1   11 connected       Ethernet1/17/2 CX9364D-cs1
1.1   12 connected       Ethernet1/19/3 CX9332D-cs1
1.1   13 connected       Ethernet1/17/3 CX9364D-cs1
1.1   14 connected       Ethernet1/19/4 CX9332D-cs1
1.1   15 connected       Ethernet1/17/4 CX9364D-cs1

16 entries were displayed.
```

13. 驗證叢集是否運作正常：

```
cluster show
```

顯示範例

```
cluster1::*> cluster show


Node                  Health  Eligibility   Epsilon
--------------------- ------- ------------  ------------
node1-01              true    true          false
node1-02              true    true          false
node1-03              true    true          false
node1-04              true    true          true

4 entries were displayed.
```

14. 重複步驟 6 至 13，在交換器 cs1 上安裝 NX-OS 軟體和 EPLD 映像。
15. 啟用叢集 LIF 的自動回滾功能。

    ```
    network interface modify -vserver Cluster -lif * -auto-revert true
    ```

16. 確認叢集 LIF 已恢復到其原始連接埠：

    ```
    network interface show -role cluster
    ```

顯示範例

```
cluster1::*> network interface show -role cluster

            Logical         Status     Network             Current
Current Is
Vserver     Interface       Admin/Oper Address/Mask        Node
Port    Home
----------- --------------- ---------- ------------------
----------- ------- ----
Cluster
            node1-01_clus1  up/up      169.254.36.44/16    node1-01
e7a     true
            node1-01_clus2  up/up      169.254.7.5/16      node1-01
e7b     true
            node1-02_clus1  up/up      169.254.197.206/16 node1-02
e7a     true
            node1-02_clus2  up/up      169.254.195.186/16 node1-02
e7b     true
            node1-03_clus1  up/up      169.254.192.49/16   node1-03
e7a     true
            node1-03_clus2  up/up      169.254.182.76/16   node1-03
e7b     true
            node1-04_clus1  up/up      169.254.59.49/16    node1-04
e7a     true
            node1-04_clus2  up/up      169.254.62.244/16   node1-04
e7b     true
```

如果任何叢集 LIF 尚未返回其來源端口，請從本機節點手動將其還原：

```
network interface revert -vserver Cluster -lif <lif-name>
```

下一步是什麼？

安裝或升級 NX-OS 軟體後，您"安裝或升級參考設定檔（RCF）"。

安裝或升級 RCF

安裝或升級參考設定檔 (RCF) 概述

首次設定 Nexus 9332D-GX2B 交換器後，安裝參考設定檔 (RCF)。當您的交換器上安裝了現有版本的 RCF 檔案時，您可以升級您的 RCF 版本。

請參閱知識庫文章"如何在保持遠端連線的情況下清除Cisco互連交換器上的配置"安裝或升級 RCF 時，有關更多信息，請參閱以下內容。

可用的 **RCF** 配置

- 叢集**-HA-**儲存 **AFX** - 所有連接埠均配置為 4x100GbE 分線模式，普遍支援 AFX 節點叢集、HA、儲存連接埠和 NX224 儲存架連接埠。交換器之間採用 400GbE ISL 連線。 （*Cluster-HA-Storage AFX RCF_vxx.x* ）。

有關具體連接埠和 VLAN 使用詳情，請參閱 RCF 中的橫幅和重要說明部分。看"Cisco乙太網路交換機"了解更多。

建議的文檔

- "Cisco乙太網路交換器（NSS）"

  請參閱NetApp支援網站上的交換器相容性表格，以了解支援的ONTAP和 RCF 版本。請注意，RCF 中的命令語法與特定版本的 NX-OS 中的語法之間可能存在命令依賴關係。

- "CiscoNexus 9000 系列交換機"

  有關Cisco交換器升級和降級程序的完整文檔，請參閱Cisco網站上提供的相應軟體和升級指南。

關於範例

本流程中的範例使用以下開關和節點命名規則：

- 這兩個Cisco交換器的名稱分別是 cs1 和 cs2。
- 節點名稱為node1-01、node1-02、node1-03和node1-04。
- 群集 LIF 名稱稱為 node1-01_clus1、node1-01_clus2、node1-02_clus1、node1-02_clus2、node1-03_clus1、node1-03_clus2、node1-04_clus1 和 node1-04_clus2。
- 這 `cluster1::*>`prompt 指示叢集名稱。

參見 "Hardware Universe"驗證平台上的連接埠是否正確。

命令輸出可能因ONTAP版本不同而有所差異。

使用的命令

流程需要同時使用ONTAP指令和Cisco Nexus 9000 系列交換器指令；除非另有說明，否則使用ONTAP指令。

下一步是什麼？

在您查看安裝 RCF 或升級 RCF 程式後，您"安裝 RCF"或者"升級您的 RCF"按要求。

安裝參考設定檔（**RCF**）

首次設定 Nexus 9332D-GX2B 交換器後，安裝參考設定檔 (RCF)。

開始之前

請核實以下安裝和連接：

- 控制台與交換器的連接。如果您可以遠端存取交換機，則控制台連線是可選的。
- 交換器 cs1 和交換器 cs2 已通電，交換器初始設定已完成（管理 IP 位址和 SSH 已設定）。
- 已安裝所需的 NX-OS 版本。

- 交換器之間的ISL連線已連線。

步驟 **1**：在交換器上安裝 **RCF**

1. 使用 SSH 或序列控制台登入 switch cs1。
2. 使用下列傳輸協定之一將 RCF 複製到交換器 cs1 的 bootflash：FTP、TFTP、SFTP 或 SCP。

   有關Cisco命令的更多信息，請參閱 "Cisco Nexus 9000 系列 NX-OS 指令參考"指南。

   顯示範例

   此範例展示如何使用 TFTP 將 RCF 檔案複製到交換器 cs1 的啟動快閃記憶體中：

   ```
   cs1# copy tftp: bootflash: vrf management
   Enter source filename: NX9332D-GX2B-RCF-v10.0-Shared.txt
   Enter hostname for the tftp server: 172.22.201.50
   Trying to connect to tftp server......Connection to Server
   Established.
   TFTP get operation was successful
   Copy complete, now saving to disk (please wait)...
   ```

3. 將先前下載的 RCF 檔案套用到啟動快閃記憶體。

   有關Cisco命令的更多信息，請參閱 "Cisco Nexus 9000 系列 NX-OS 指令參考"指南。

   此範例展示了 RCF 文件 `NX9332D-GX2B-RCF-v10.0-Shared.txt`正在交換器 cs1 上安裝：

   ```
   cs1# copy NX9332D-GX2B-RCF-v10.0-Shared.txt running-config echo-commands
   ```

4. 檢查橫幅輸出 `show banner motd`命令。您必須閱讀並遵循這些說明以確保交換器的正確配置和操作。

顯示範例

```
cs1# show banner motd

**********************************************************************
**********
* NetApp Reference Configuration File (RCF)
*
* Switch   : NX9332D-GX2B
* Filename : NX9332D-GX2B-RCF-v10.0-Shared.txt
* Date     : 05-09-2025
* Version  : v10.0
* Port Usage:
* Ports  1-30: 100GbE Intra-Cluster/HA/Storage Ports, int e1/{1-
30}/1-4
* Ports 31-32: Intra-Cluster ISL Ports, int e1/31-32
*
* IMPORTANT NOTES
* Interface port-channel999 is reserved to identify the version of
this file.
**********************************************************************
**********
```

5. 請確認 RCF 檔案是否為最新版本：

   `show running-config`

   檢查輸出結果以驗證是否擁有正確的 RCF 時，請確保以下資訊正確：

   - RCF橫幅
   - 節點和連接埠設置
   - 客製化

     輸出結果會根據您的網站配置而有所不同。檢查連接埠設置，並參考發行說明，以了解您安裝的 RCF 版本是否有任何特定變更。

6. 儲存基本配置詳細信息 `write_erase.cfg`啟動閃存上的檔案。

   確保配置以下內容：

   - 使用者名稱和密碼
   - 管理 IP 位址
   - 預設網關
   - 交換器名稱

```
cs1# show run | i "username admin password" > bootflash:write_erase.cfg

cs1# show run | section "vrf context management" >> bootflash:write_erase.cfg

cs1# show run | section "interface mgmt0" >> bootflash:write_erase.cfg

cs1# show run | section "switchname" >> bootflash:write_erase.cfg

cs1# echo "hardware access-list tcam region ing-racl 1024" >>
bootflash:write_erase.cfg

cs1# echo "hardware access-list tcam region egr-racl 1024" >>
bootflash:write_erase.cfg

cs1# echo "hardware access-list tcam region ing-l2-qos 1536" >>
bootflash:write_erase.cfg
```

請參閱知識庫文章"如何在保持遠端連線的情況下清除Cisco互連交換器上的配置"更多詳情請見下文。

7. 確認 `write_erase.cfg`文件已如預期填入：

```
show file bootflash:write_erase.cfg
```

8. 問題 `write erase`清除目前已儲存配置的命令：

```
cs1# write erase

Warning: This command will erase the startup-configuration.

Do you wish to proceed anyway? (y/n) [n] y
```

9. 將先前儲存的基本配置複製到啟動配置中。

```
cs1# copy bootflash:write_erase.cfg startup-config
```

10. 重啟交換器：

```
cs1# reload

This command will reboot the system. (y/n)? [n] y
```

11. 在交換器 cs2 上重複步驟 1 至 10。
12. 將ONTAP叢集中所有節點的連接埠連接到交換器 cs1 和 cs2。

步驟 **2**：驗證交換器連接

1. 驗證連接到叢集連接埠的交換器連接埠是否已啟動：

```
show interface brief
```

顯示範例

```
cs1# show interface brief | grep up
.
.
Eth1/9/3        1       eth  trunk  up      none
100G(D) --
Eth1/9/4        1       eth  trunk  up      none
100G(D) --
Eth1/15/1       1       eth  trunk  up      none
100G(D) --
Eth1/15/2       1       eth  trunk  up      none
100G(D) --
Eth1/15/3       1       eth  trunk  up      none
100G(D) --
Eth1/15/4       1       eth  trunk  up      none
100G(D) --
Eth1/16/1       1       eth  trunk  up      none
100G(D) --
Eth1/16/2       1       eth  trunk  up      none
100G(D) --
Eth1/16/3       1       eth  trunk  up      none
100G(D) --
Eth1/16/4       1       eth  trunk  up      none
100G(D) --
Eth1/17/1       1       eth  trunk  up      none
100G(D) --
Eth1/17/2       1       eth  trunk  up      none
100G(D) --
Eth1/17/3       1       eth  trunk  up      none
100G(D) --
Eth1/17/4       1       eth  trunk  up      none
100G(D) --
.
.
```

2. 使用下列命令驗證叢集節點是否位於正確的叢集 VLAN 中：

   `show vlan brief`

   `show interface trunk`

顯示範例

```
cs1# show vlan brief
VLAN Name                              Status    Ports
---- --------------------------------- ---------
-------------------------------
1    default                           active    Po1, Po999, Eth1/31,
Eth1/32
                                                 Eth1/33, Eth1/34,
Eth1/1/1
                                                 Eth1/1/2, Eth1/1/3,
Eth1/1/4
                                                 Eth1/2/1, Eth1/2/2,
Eth1/2/3
                                                 Eth1/2/4, Eth1/3/1,
Eth1/3/2
                                                 Eth1/3/3, Eth1/3/4,
Eth1/4/1
                                                 Eth1/4/2, Eth1/4/3,
Eth1/4/4
                                                 Eth1/5/1, Eth1/5/2,
Eth1/5/3
                                                 Eth1/5/4, Eth1/6/1,
Eth1/6/2
                                                 Eth1/6/3, Eth1/6/4,
Eth1/7/1
                                                 Eth1/7/2, Eth1/7/3,
Eth1/7/4
                                                 Eth1/8/1, Eth1/8/2,
Eth1/8/3
                                                 Eth1/8/4, Eth1/9/1,
Eth1/9/2
                                                 Eth1/9/3, Eth1/9/4,
Eth1/10/1
                                                 Eth1/10/2,
Eth1/10/3, Eth1/10/4
                                                 Eth1/11/1,
Eth1/11/2, Eth1/11/3
                                                 Eth1/11/4,
Eth1/12/1, Eth1/12/2
                                                 Eth1/12/3,
Eth1/12/4, Eth1/13/1
                                                 Eth1/13/2,
Eth1/13/3, Eth1/13/4
                                                 Eth1/14/1,
```

```
Eth1/14/2, Eth1/14/3
                                                    Eth1/14/4,
Eth1/15/1, Eth1/15/2
                                                    Eth1/15/3,
Eth1/15/4, Eth1/16/1
                                                    Eth1/16/2,
Eth1/16/3, Eth1/16/4
                                                    Eth1/17/1,
Eth1/17/2, Eth1/17/3
                                                    Eth1/17/4,
Eth1/18/1, Eth1/18/2
                                                    Eth1/18/3,
Eth1/18/4, Eth1/19/1
                                                    Eth1/19/2,
Eth1/19/3, Eth1/19/4
                                                    Eth1/20/1,
Eth1/20/2, Eth1/20/3
                                                    Eth1/20/4,
Eth1/21/1, Eth1/21/2
                                                    Eth1/21/3,
Eth1/21/4, Eth1/22/1
                                                    Eth1/22/2,
Eth1/22/3, Eth1/22/4
                                                    Eth1/23/1,
Eth1/23/2, Eth1/23/3
                                                    Eth1/23/4,
Eth1/24/1, Eth1/24/2
                                                    Eth1/24/3,
Eth1/24/4, Eth1/25/1
                                                    Eth1/25/2,
Eth1/25/3, Eth1/25/4
                                                    Eth1/26/1,
Eth1/26/2, Eth1/26/3
                                                    Eth1/26/4,
Eth1/27/1, Eth1/27/2
                                                    Eth1/27/3,
Eth1/27/4, Eth1/28/1
                                                    Eth1/28/2,
Eth1/28/3, Eth1/28/4
                                                    Eth1/29/1,
Eth1/29/2, Eth1/29/3
                                                    Eth1/29/4,
Eth1/30/1, Eth1/30/2
                                                    Eth1/30/3, Eth1/30/4
17   VLAN0017                         active    Eth1/1/1, Eth1/1/2,
Eth1/1/3
```

```
                                                    Eth1/1/4, Eth1/2/1,
Eth1/2/2
                                                    Eth1/2/3, Eth1/2/4,
Eth1/3/1
                                                    Eth1/3/2, Eth1/3/3,
Eth1/3/4
                                                    Eth1/4/1, Eth1/4/2,
Eth1/4/3
                                                    Eth1/4/4, Eth1/5/1,
Eth1/5/2
                                                    Eth1/5/3, Eth1/5/4,
Eth1/6/1
                                                    Eth1/6/2, Eth1/6/3,
Eth1/6/4
                                                    Eth1/7/1, Eth1/7/2,
Eth1/7/3
                                                    Eth1/7/4, Eth1/8/1,
Eth1/8/2
                                                    Eth1/8/3, Eth1/8/4,
Eth1/9/1
                                                    Eth1/9/2, Eth1/9/3,
Eth1/9/4
                                                    Eth1/10/1,
Eth1/10/2, Eth1/10/3
                                                    Eth1/10/4,
Eth1/11/1, Eth1/11/2
                                                    Eth1/11/3,
Eth1/11/4, Eth1/12/1
                                                    Eth1/12/2,
Eth1/12/3, Eth1/12/4
                                                    Eth1/13/1,
Eth1/13/2, Eth1/13/3
                                                    Eth1/13/4,
Eth1/14/1, Eth1/14/2
                                                    Eth1/14/3,
Eth1/14/4, Eth1/15/1
                                                    Eth1/15/2,
Eth1/15/3, Eth1/15/4
                                                    Eth1/16/1,
Eth1/16/2, Eth1/16/3
                                                    Eth1/16/4,
Eth1/17/1, Eth1/17/2
                                                    Eth1/17/3,
Eth1/17/4, Eth1/18/1
                                                    Eth1/18/2,
Eth1/18/3, Eth1/18/4
```

```
                                                  Eth1/19/1,
Eth1/19/2, Eth1/19/3
                                                  Eth1/19/4,
Eth1/20/1, Eth1/20/2
                                                  Eth1/20/3,
Eth1/20/4, Eth1/21/1
                                                  Eth1/21/2,
Eth1/21/3, Eth1/21/4
                                                  Eth1/22/1,
Eth1/22/2, Eth1/22/3
                                                  Eth1/22/4,
Eth1/23/1, Eth1/23/2
                                                  Eth1/23/3,
Eth1/23/4, Eth1/24/1
                                                  Eth1/24/2,
Eth1/24/3, Eth1/24/4
                                                  Eth1/25/1,
Eth1/25/2, Eth1/25/3
                                                  Eth1/25/4,
Eth1/26/1, Eth1/26/2
                                                  Eth1/26/3,
Eth1/26/4, Eth1/27/1
                                                  Eth1/27/2,
Eth1/27/3, Eth1/27/4
                                                  Eth1/28/1,
Eth1/28/2, Eth1/28/3
                                                  Eth1/28/4,
Eth1/29/1, Eth1/29/2
                                                  Eth1/29/3,
Eth1/29/4, Eth1/30/1
                                                  Eth1/30/2,
Eth1/30/3, Eth1/30/4
18   VLAN0018                         active    Eth1/1/1, Eth1/1/2,
Eth1/1/3
                                                  Eth1/1/4, Eth1/2/1,
Eth1/2/2
                                                  Eth1/2/3, Eth1/2/4,
Eth1/3/1
                                                  Eth1/3/2, Eth1/3/3,
Eth1/3/4
                                                  Eth1/4/1, Eth1/4/2,
Eth1/4/3
                                                  Eth1/4/4, Eth1/5/1,
Eth1/5/2
                                                  Eth1/5/3, Eth1/5/4,
Eth1/6/1
```

```
                                                    Eth1/6/2, Eth1/6/3,
Eth1/6/4
                                                    Eth1/7/1, Eth1/7/2,
Eth1/7/3
                                                    Eth1/7/4, Eth1/8/1,
Eth1/8/2
                                                    Eth1/8/3, Eth1/8/4,
Eth1/9/1
                                                    Eth1/9/2, Eth1/9/3,
Eth1/9/4
                                                    Eth1/10/1,
Eth1/10/2, Eth1/10/3
                                                    Eth1/10/4,
Eth1/11/1, Eth1/11/2
                                                    Eth1/11/3,
Eth1/11/4, Eth1/12/1
                                                    Eth1/12/2,
Eth1/12/3, Eth1/12/4
                                                    Eth1/13/1,
Eth1/13/2, Eth1/13/3
                                                    Eth1/13/4,
Eth1/14/1, Eth1/14/2
                                                    Eth1/14/3,
Eth1/14/4, Eth1/15/1
                                                    Eth1/15/2,
Eth1/15/3, Eth1/15/4
                                                    Eth1/16/1,
Eth1/16/2, Eth1/16/3
                                                    Eth1/16/4,
Eth1/17/1, Eth1/17/2
                                                    Eth1/17/3,
Eth1/17/4, Eth1/18/1
                                                    Eth1/18/2,
Eth1/18/3, Eth1/18/4
                                                    Eth1/19/1,
Eth1/19/2, Eth1/19/3
                                                    Eth1/19/4,
Eth1/20/1, Eth1/20/2
                                                    Eth1/20/3,
Eth1/20/4, Eth1/21/1
                                                    Eth1/21/2,
Eth1/21/3, Eth1/21/4
                                                    Eth1/22/1,
Eth1/22/2, Eth1/22/3
                                                    Eth1/22/4,
Eth1/23/1, Eth1/23/2
```

```
                                                  Eth1/23/3,
Eth1/23/4, Eth1/24/1
                                                  Eth1/24/2,
Eth1/24/3, Eth1/24/4
                                                  Eth1/25/1,
Eth1/25/2, Eth1/25/3
                                                  Eth1/25/4,
Eth1/26/1, Eth1/26/2
                                                  Eth1/26/3,
Eth1/26/4, Eth1/27/1
                                                  Eth1/27/2,
Eth1/27/3, Eth1/27/4
                                                  Eth1/28/1,
Eth1/28/2, Eth1/28/3
                                                  Eth1/28/4,
Eth1/29/1, Eth1/29/2
                                                  Eth1/29/3,
Eth1/29/4, Eth1/30/1
                                                  Eth1/30/2,
Eth1/30/3, Eth1/30/4
30   VLAN0030                         active    Eth1/1/1, Eth1/1/2,
Eth1/1/3
                                                  Eth1/1/4, Eth1/2/1,
Eth1/2/2
                                                  Eth1/2/3, Eth1/2/4,
Eth1/3/1
                                                  Eth1/3/2, Eth1/3/3,
Eth1/3/4
                                                  Eth1/4/1, Eth1/4/2,
Eth1/4/3
                                                  Eth1/4/4, Eth1/5/1,
Eth1/5/2
                                                  Eth1/5/3, Eth1/5/4,
Eth1/6/1
                                                  Eth1/6/2, Eth1/6/3,
Eth1/6/4
                                                  Eth1/7/1, Eth1/7/2,
Eth1/7/3
                                                  Eth1/7/4, Eth1/8/1,
Eth1/8/2
                                                  Eth1/8/3, Eth1/8/4,
Eth1/9/1
                                                  Eth1/9/2, Eth1/9/3,
Eth1/9/4
                                                  Eth1/10/1,
Eth1/10/2, Eth1/10/3
```

```
                                                    Eth1/10/4,
Eth1/11/1, Eth1/11/2
                                                    Eth1/11/3,
Eth1/11/4, Eth1/12/1
                                                    Eth1/12/2,
Eth1/12/3, Eth1/12/4
                                                    Eth1/13/1,
Eth1/13/2, Eth1/13/3
                                                    Eth1/13/4,
Eth1/14/1, Eth1/14/2
                                                    Eth1/14/3,
Eth1/14/4, Eth1/15/1
                                                    Eth1/15/2,
Eth1/15/3, Eth1/15/4
                                                    Eth1/16/1,
Eth1/16/2, Eth1/16/3
                                                    Eth1/16/4,
Eth1/17/1, Eth1/17/2
                                                    Eth1/17/3,
Eth1/17/4, Eth1/18/1
                                                    Eth1/18/2,
Eth1/18/3, Eth1/18/4
                                                    Eth1/19/1,
Eth1/19/2, Eth1/19/3
                                                    Eth1/19/4,
Eth1/20/1, Eth1/20/2
                                                    Eth1/20/3,
Eth1/20/4, Eth1/21/1
                                                    Eth1/21/2,
Eth1/21/3, Eth1/21/4
                                                    Eth1/22/1,
Eth1/22/2, Eth1/22/3
                                                    Eth1/22/4,
Eth1/23/1, Eth1/23/2
                                                    Eth1/23/3,
Eth1/23/4, Eth1/24/1
                                                    Eth1/24/2,
Eth1/24/3, Eth1/24/4
                                                    Eth1/25/1,
Eth1/25/2, Eth1/25/3
                                                    Eth1/25/4,
Eth1/26/1, Eth1/26/2
                                                    Eth1/26/3,
Eth1/26/4, Eth1/27/1
                                                    Eth1/27/2,
Eth1/27/3, Eth1/27/4
```

```
                                                  Eth1/28/1,
Eth1/28/2, Eth1/28/3
                                                  Eth1/28/4,
Eth1/29/1, Eth1/29/2
                                                  Eth1/29/3,
Eth1/29/4, Eth1/30/1
                                                  Eth1/30/2,
Eth1/30/3, Eth1/30/4
40   VLAN0040                           active    Eth1/1/1, Eth1/1/2,
Eth1/1/3
                                                  Eth1/1/4, Eth1/2/1,
Eth1/2/2
                                                  Eth1/2/3, Eth1/2/4,
Eth1/3/1
                                                  Eth1/3/2, Eth1/3/3,
Eth1/3/4
                                                  Eth1/4/1, Eth1/4/2,
Eth1/4/3
                                                  Eth1/4/4, Eth1/5/1,
Eth1/5/2
                                                  Eth1/5/3, Eth1/5/4,
Eth1/6/1
                                                  Eth1/6/2, Eth1/6/3,
Eth1/6/4
                                                  Eth1/7/1, Eth1/7/2,
Eth1/7/3
                                                  Eth1/7/4, Eth1/8/1,
Eth1/8/2
                                                  Eth1/8/3, Eth1/8/4,
Eth1/9/1
                                                  Eth1/9/2, Eth1/9/3,
Eth1/9/4
                                                  Eth1/10/1,
Eth1/10/2, Eth1/10/3
                                                  Eth1/10/4,
Eth1/11/1, Eth1/11/2
                                                  Eth1/11/3,
Eth1/11/4, Eth1/12/1
                                                  Eth1/12/2,
Eth1/12/3, Eth1/12/4
                                                  Eth1/13/1,
Eth1/13/2, Eth1/13/3
                                                  Eth1/13/4,
Eth1/14/1, Eth1/14/2
                                                  Eth1/14/3,
Eth1/14/4, Eth1/15/1
```

```
                                                    Eth1/15/2,
Eth1/15/3, Eth1/15/4
                                                    Eth1/16/1,
Eth1/16/2, Eth1/16/3
                                                    Eth1/16/4,
Eth1/17/1, Eth1/17/2
                                                    Eth1/17/3,
Eth1/17/4, Eth1/18/1
                                                    Eth1/18/2,
Eth1/18/3, Eth1/18/4
                                                    Eth1/19/1,
Eth1/19/2, Eth1/19/3
                                                    Eth1/19/4,
Eth1/20/1, Eth1/20/2
                                                    Eth1/20/3,
Eth1/20/4, Eth1/21/1
                                                    Eth1/21/2,
Eth1/21/3, Eth1/21/4
                                                    Eth1/22/1,
Eth1/22/2, Eth1/22/3
                                                    Eth1/22/4,
Eth1/23/1, Eth1/23/2
                                                    Eth1/23/3,
Eth1/23/4, Eth1/24/1
                                                    Eth1/24/2,
Eth1/24/3, Eth1/24/4
                                                    Eth1/25/1,
Eth1/25/2, Eth1/25/3
                                                    Eth1/25/4,
Eth1/26/1, Eth1/26/2
                                                    Eth1/26/3,
Eth1/26/4, Eth1/27/1
                                                    Eth1/27/2,
Eth1/27/3, Eth1/27/4
                                                    Eth1/28/1,
Eth1/28/2, Eth1/28/3
                                                    Eth1/28/4,
Eth1/29/1, Eth1/29/2
                                                    Eth1/29/3,
Eth1/29/4, Eth1/30/1
                                                    Eth1/30/2,
Eth1/30/3, Eth1/30/4

cs1# show interface trunk
--------------------------------------------------------------------------
------------
```

```
Port          Native  Status        Port
              Vlan                  Channel
--------------------------------------------------------------------------------
------------
Eth1/1/1      1       trunking      --
Eth1/1/2      1       trunking      --
Eth1/1/3      1       trunking      --
Eth1/1/4      1       trunking      --
Eth1/2/1      1       trunking      --
Eth1/2/2      1       trunking      --
Eth1/2/3      1       trunking      --
Eth1/2/4      1       trunking      --
.
.
.
Eth1/30/1     none
Eth1/30/2     none
Eth1/30/3     none
Eth1/30/4     none
Eth1/31       none
Eth1/32       none
Po1           1
```

有關具體連接埠和 VLAN 使用詳情，請參閱 RCF 中的橫幅和重要說明部分。

3. 驗證 cs1 和 cs2 之間的 ISL 連線是否正常：

```
show port-channel summary
```

顯示範例

```
cs1# show port-channel summary
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        b - BFD Session Wait
        S - Switched    R - Routed
        U - Up (port-channel)
        p - Up in delay-lacp mode (member)
        M - Not in use. Min-links not met
--------------------------------------------------------------------------
------------
Group Port-       Type     Protocol  Member Ports
      Channel
--------------------------------------------------------------------------
------------
1     Po1(SU)     Eth      LACP      Eth1/31(P)   Eth1/32(P)
999   Po999(SD)   Eth      NONE      --
cs1#
```

步驟 **3**：設定**ONTAP**集群

NetApp建議您使用系統管理員來設定新的叢集。

系統管理器為叢集設定和配置提供了簡單易用的工作流程，包括分配節點管理 IP 位址、初始化叢集、建立本機層、設定協定和配置初始儲存。

前往 "使用 System Manager 在新叢集上設定ONTAP"有關設定說明，請參閱相關文件。

下一步是什麼？

安裝 RCF 後，你 "驗證 SSH 配置"。

升級您的參考設定檔 (RCF)

當您的運行交換器上已安裝了現有版本的 RCF 檔案時，您需要升級 RCF 版本。

開始之前

請確保您擁有以下物品：

- 交換器配置的目前備份。
- 一個功能齊全的群集（日誌中沒有錯誤或類似問題）。
- 當前的RCF。
- 如果您要更新 RCF 版本，則需要在 RCF 中進行啟動配置，以反映所需的啟動映像。

如果需要更改啟動配置以反映目前的啟動映像，則必須在重新套用 RCF 之前進行更改，以便在以後的重新啟動中實例化正確的版本。

在此過程中不需要任何可操作的交換器間連結 (ISL)。這是設計使然，因為 RCF 版本的變更可能會暫時影響 ISL 連線。為確保叢集運作不會中斷，以下步驟將所有叢集 LIF 遷移到運作夥伴交換機，同時在目標交換器上執行對應步驟。

在安裝新的交換器軟體版本和 RCF 之前，必須清除交換器設定並執行基本設定。您必須使用序列控制台連接到交換機，或在擦除交換器設定之前保留基本設定資訊。

第一步：準備升級

1. 如果此叢集上啟用了AutoSupport ，則透過呼叫AutoSupport訊息來抑制自動建立案例：

   ```
   system node autosupport invoke -node * -type all -message MAINT=xh
   ```

   其中 *x* 為維護視窗的持續時間（小時）。

2. 將權限級別變更為高級，並在提示繼續時輸入 **y**：

   ```
   set -privilege advanced
   ```

   出現高階提示符號（*>）。

3. 顯示每個節點上連接到交換器的連接埠：

   ```
   network device-discovery show
   ```

顯示範例

```
cluster1::*> network device-discovery show

Node/       Local  Discovered
Protocol    Port   Device (LLDP: ChassisID)  Interface
Platform
----------- ------ ------------------------- ----------------
----------------
node1-01/cdp
            e10a   cs1(FLMXXXXXXXX)          Ethernet1/16/3    N9K-
C9332D-GX2B
            e10b   cs2(FDOXXXXXXXX)          Ethernet1/16/3    N9K-
C9332D-GX2B
            e11a   cs1(FLMXXXXXXXX)          Ethernet1/16/4    N9K-
C9332D-GX2B
            e11b   cs2(FDOXXXXXXXX)          Ethernet1/16/4    N9K-
C9332D-GX2B
            e1a    cs1(FLMXXXXXXXX)          Ethernet1/16/1    N9K-
C9332D-GX2B
            e1b    cs2(FDOXXXXXXXX)          Ethernet1/16/1    N9K-
C9332D-GX2B
            .
            .
            .
            e7a    cs1(FLMXXXXXXXX)          Ethernet1/16/2    N9K-
C9332D-GX2B
            e7b    cs2(FDOXXXXXXXX)          Ethernet1/16/2    N9K-
C9332D-GX2B

node1-01/lldp
            e10a   cs1 (c8:60:8f:xx:xx:xx)   Ethernet1/16/3    -
            e10b   cs2 (04:e3:87:xx:xx:xx)   Ethernet1/16/3    -
            e11a   cs1 (c8:60:8f:xx:xx:xx)   Ethernet1/16/4    -
            e11b   cs2 (04:e3:87:xx:xx:xx)   Ethernet1/16/4    -
            e1a    cs1 (c8:60:8f:xx:xx:xx)   Ethernet1/16/1    -
            e1b    cs2 (04:e3:87:xx:xx:xx)   Ethernet1/16/1    -
            .
            .
            .
            e7a    cs1 (c8:60:8f:xx:xx:xx)   Ethernet1/16/2    -
            e7b    cs2 (04:e3:87:xx:xx:xx)   Ethernet1/16/2    -
```

4. 檢查各港口的行政及營運狀況。

a. 集群連接埠

i. 確認叢集所有連接埠均已啟動且狀態正常：

```
network port show -ipspace Cluster
```

顯示範例

```
cluster1::*> network port show -ipspace Cluster

Node: node1-01

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false

Node: node1-02

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false

Node: node1-03


Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/10000
healthy  false
e7b       Cluster      Cluster          up   9000  auto/10000
healthy  false
```

```
Node: node1-04

Ignore
                                                          Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/10000
healthy  false
e7b       Cluster      Cluster          up   9000  auto/10000
healthy  false
```

ii. 確認所有叢集介面（LIF）都位於主連接埠上：

```
network interface show -role cluster
```

顯示範例

```
cluster1::*> network interface show -role cluster
            Logical            Status     Network
Current      Current Is
Vserver     Interface          Admin/Oper Address/Mask
Node         Port    Home
----------- ------------------ ---------- ------------------
------------ ------- ----
Cluster
            node1-01_clus1     up/up      169.254.3.4/23
node1-01    e7a     true
            node1-01_clus2     up/up      169.254.3.5/23
node1-01    e7b     true
            node1-02_clus1     up/up      169.254.3.8/23
node1-02    e7a     true
            node1-02_clus2     up/up      169.254.3.9/23
node1-02    e7b     true
            node1-03_clus1     up/up      169.254.1.3/23
node1-03    e7a     true
            node1-03_clus2     up/up      169.254.1.1/23
node1-03    e7b     true
            node1-04_clus1     up/up      169.254.1.6/23
node1-04    e7a     true
            node1-04_clus2     up/up      169.254.1.7/23
node1-04    e7b     true
8 entries were displayed.
```

iii. 驗證叢集是否顯示兩台交換器的資訊：

```
system cluster-switch show -is-monitoring-enabled-operational true
```

顯示範例

```
cluster1::*> system cluster-switch show -is-monitoring-enabled
-operational true

Switch                       Type               Address
Model
---------------------------- ------------------
---------------- ---------------
cs2(FDOXXXXXXXX)             cluster-network    10.228.137.233
N9K-C9332D-GX2B
     Serial Number: FDOXXXXXXXX
      Is Monitored: true
            Reason: None
  Software Version: Cisco Nexus Operating System (NX-OS)
Software, Version
                    10.4(2)
    Version Source: CDP/ISDP


cs2(FLMXXXXXXXX)             cluster-network    10.228.137.234
N9K-C9332D-GX2B
     Serial Number: FLMXXXXXXXX
      Is Monitored: true
            Reason: None
  Software Version: Cisco Nexus Operating System (NX-OS)
Software, Version
                    10.4(2)
    Version Source: CDP/ISDP

2 entries were displayed.
```

b. **HA** 連接埠

i. 驗證所有 HA 連接埠是否處於正常運作狀態：

```
ha interconnect status show -node <node-name>
```

顯示範例

```
cluster1::*> ha interconnect status show -node node1-01
  (system ha interconnect status show)

                       Node: node1-01
               Link 0 Status: up
               Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                       Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                  Port Name: e1a-17
                        MTU: 4096
            Link Information: ACTIVE


Interconnect Port 1 :
                  Port Name: e1b-18
                        MTU: 4096
            Link Information: ACTIVE

cluster1::*> ha interconnect status show -node node1-01
  (system ha interconnect status show)

                       Node: node1-01
               Link 0 Status: up
               Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                       Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                  Port Name: e1a-17
                        MTU: 4096
            Link Information: ACTIVE


Interconnect Port 1 :
```

```
                  Port Name: e1b-18
                        MTU: 4096
           Link Information: ACTIVE
.
.
.
```

a. 儲存連接埠

i. 驗證所有儲存連接埠均處於正常狀態：

```
storage port show -port-type ENET
```

顯示範例

```
cluster1::*> storage port show -port-type ENET


                                     Speed
Node                Port Type  Mode    (Gb/s) State    Status
------------------ ---- ----- ------- ------ --------
-----------
node1-01
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-02
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-03
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
node1-04
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
16 entries were displayed.
```

b. 儲存架連接埠

i. 驗證所有儲存架連接埠是否處於正常狀態：

```
storage shelf port show
```

顯示範例

```
cluster1::*> storage shelf port show

Shelf ID Module State        Internal?
-------- -- ------ ---------- ---------
1.1
         0 A      connected    false
         1 A      connected    false
         2 A      connected    false
         3 A      connected    false
         4 A      connected    false
         5 A      connected    false
         6 A      connected    false
         7 A      connected    false
         8 B      connected    false
         9 B      connected    false
        10 B      connected    false
        11 B      connected    false
        12 B      connected    false
        13 B      connected    false
        14 B      connected    false
        15 B      connected    false

16 entries were displayed.
```

ii. 驗證所有儲存架連接埠是否處於正常狀態：

```
storage shelf port show -fields remote-device,remote-
port,connector-state
```

顯示範例

```
cluster1::*> storage shelf port show -fields remote-
device,remote-port,connector-state

shelf id connector-state remote-port    remote-device
----- -- -------------- -------------- -----------------
1.1   0  connected       Ethernet1/17/1 CX9332D-cs1
1.1   1  connected       Ethernet1/15/1 CX9364D-cs1
1.1   2  connected       Ethernet1/17/2 CX9332D-cs1
1.1   3  connected       Ethernet1/15/2 CX9364D-cs1
1.1   4  connected       Ethernet1/17/3 CX9332D-cs1
1.1   5  connected       Ethernet1/15/3 CX9364D-cs1
1.1   6  connected       Ethernet1/17/4 CX9332D-cs1
1.1   7  connected       Ethernet1/15/4 CX9364D-cs1
1.1   8  connected       Ethernet1/19/1 CX9332D-cs1
1.1   9  connected       Ethernet1/17/1 CX9364D-cs1
1.1   10 connected       Ethernet1/19/2 CX9332D-cs1
1.1   11 connected       Ethernet1/17/2 CX9364D-cs1
1.1   12 connected       Ethernet1/19/3 CX9332D-cs1
1.1   13 connected       Ethernet1/17/3 CX9364D-cs1
1.1   14 connected       Ethernet1/19/4 CX9332D-cs1
1.1   15 connected       Ethernet1/17/4 CX9364D-cs1

16 entries were displayed.
```

5. 停用群集 LIF 的自動回滾功能。

```
network interface modify -vserver Cluster -lif * -auto-revert false
```

步驟 **2**：設定埠

1. 在交換器cs1上，關閉與節點所有連接埠連接的連接埠。

```
cs1# config
cs1(config)# interface e1/1/1-4,e1/2/1-4,e1/3/1-4,e1/4/1-4,e1/5/1-
4,e1/6/1-4,e1/7/1-4,e1/8/1-4
cs1(config-if-range)# shutdown
cs1(config)# interface e1/9/1-4,e1/10/1-4,e1/11/1-4,e1/12/1-4,e1/13/1-
4,e1/14/1-4,e1/15/1-4,e1/16/1-4
cs1(config-if-range)# shutdown
cs1(config)# interface e1/17/1-4,e1/18/1-4,e1/19/1-4,e1/20/1-4,e1/21/1-
4,e1/22/1-44,e1/23/1-4
cs1(config-if-range)# shutdown
cs1(config)# interface e1/24/1-,e1/25/1-4,e1/26/1-4,e1/27/1-4,e1/28/1-
4,e1/29/1-4,e1/30/1-44
cs1(config-if-range)# shutdown
cs1(config-if-range)# exit
cs1(config)# exit
```

確保關閉所有連接的連接埠以避免任何網路連線問題。請參閱知識庫文章 "在切換作業系統升級期間遷移叢集 LIF 時，節點脫離仲裁。"更多詳情請見下文。

2. 驗證叢集 LIF 是否已故障轉移到交換器 cs1 上託管的連接埠。這可能需要幾秒鐘。

```
network interface show -role cluster
```

顯示範例

```
cluster1::*> network interface show -role cluster

            Logical         Status     Network             Current
Current Is
Vserver     Interface       Admin/Oper Address/Mask        Node
Port    Home
----------- --------------- ---------- ------------------
----------- ------- ----
Cluster
            node1-01_clus1  up/up      169.254.36.44/16    node1-01
e7a     true
            node1-01_clus2  up/up      169.254.7.5/16      node1-01
e7b     true
            node1-02_clus1  up/up      169.254.197.206/16 node1-02
e7a     true
            node1-02_clus2  up/up      169.254.195.186/16 node1-02
e7b     true
            node1-03_clus1  up/up      169.254.192.49/16   node1-03
e7a     true
            node1-03_clus2  up/up      169.254.182.76/16   node1-03
e7b     true
            node1-04_clus1  up/up      169.254.59.49/16    node1-04
e7a     true
            node1-04_clus2  up/up      169.254.62.244/16   node1-04
e7b     true

8 entries were displayed.
```

3. 驗證叢集是否運作正常：

   `cluster show`

顯示範例

```
cluster1::*> cluster show
Node                 Health  Eligibility   Epsilon
-------------------- ------- ------------  -------
node1-01             true    true          false
node1-02             true    true          false
node1-03             true    true          true
node1-04             true    true          false

4 entries were displayed.
```

4. 如果您尚未儲存目前交換器配置，請將以下命令的輸出複製到文字檔案中：

```
show running-config
```

   a. 記錄目前版本與目前版本之間的任何自訂新增內容。 `running-config`以及正在使用的 RCF 檔案（例如貴組織的 SNMP 配置）。

   b. 對於 NX-OS 10.2 及更高版本，請使用 `show diff running-config`用於與 bootflash 中儲存的 RCF 檔案進行比較的命令。否則，請使用第三方差異/比較工具。

5. 儲存基本配置詳細信息 `write_erase.cfg`啟動閃存上的檔案。

   確保配置以下內容：

   - 使用者名稱和密碼
   - 管理 IP 位址
   - 預設網關
   - 交換器名稱

```
cs1# show run | i "username admin password" > bootflash:write_erase.cfg

cs1# show run | section "vrf context management" >> bootflash:write_erase.cfg

cs1# show run | section "interface mgmt0" >> bootflash:write_erase.cfg

cs1# show run | section "switchname" >> bootflash:write_erase.cfg

cs1# echo "hardware access-list tcam region ing-racl 1024" >>
bootflash:write_erase.cfg

cs1# echo "hardware access-list tcam region egr-racl 1024" >>
bootflash:write_erase.cfg

cs1# echo "hardware access-list tcam region ing-l2-qos 1536" >>
bootflash:write_erase.cfg
```

請參閱知識庫文章"如何在保持遠端連線的情況下清除Cisco互連交換器上的配置"更多詳情請見下文。

6. 確認 `write_erase.cfg`文件已如預期填入：

   ```
   show file bootflash:write_erase.cfg
   ```

7. 問題 `write erase`清除目前已儲存配置的命令：

   ```
   cs1# write erase

   Warning: This command will erase the startup-configuration.

   Do you wish to proceed anyway? (y/n) [n] y
   ```

8. 將先前儲存的基本配置複製到啟動配置中。

   ```
   cs1# copy bootflash:write_erase.cfg startup-config
   ```

9. 重啟交換器：

   ```
   cs1# reload

   This command will reboot the system. (y/n)? [n] y
   ```

10. 管理 IP 位址恢復正常後，透過 SSH 登入交換器。

    您可能需要更新與 SSH 金鑰相關的 hosts 檔案項目。

11. 使用下列傳輸協定之一將 RCF 複製到交換器 cs1 的 bootflash：FTP、TFTP、SFTP 或 SCP。

    有關Cisco命令的更多信息，請參閱 "Cisco Nexus 9000 系列 NX-OS 指令參考"指南。

    顯示範例

    此範例展示如何使用 TFTP 將 RCF 檔案複製到交換器 cs1 的啟動快閃記憶體中：

    ```
    cs1# copy tftp: bootflash: vrf management
    Enter source filename: NX9332D-GX2B-RCF-v10.0-Shared.txt
    Enter hostname for the tftp server: 172.22.201.50
    Trying to connect to tftp server......Connection to Server
    Established.
    TFTP get operation was successful
    Copy complete, now saving to disk (please wait)...
    ```

12. 將先前下載的 RCF 檔案套用到啟動快閃記憶體。

    有關Cisco命令的更多信息，請參閱 "Cisco Nexus 9000 系列 NX-OS 指令參考"指南。

    此範例展示了 RCF 文件 `NX9332D-GX2B-RCF-v10.0-Shared.txt`正在交換器 cs1 上安裝：

```
cs1# copy NX9332D-GX2B-RCF-v10.0-Shared.txt running-config echo-commands
```

確保仔細閱讀 RCF 的 安裝說明、重要說明 和 橫幅 部分。您必須閱讀並遵循這些說明以確保交換器的正確配置和操作。

13. 請確認 RCF 檔案是否為最新版本：

    ```
    show running-config
    ```

    檢查輸出結果以驗證是否擁有正確的 RCF 時，請確保以下資訊正確：

    - RCF橫幅
    - 節點和連接埠設置
    - 客製化

      輸出結果會根據您的網站配置而有所不同。檢查連接埠設置，並參考發行說明，以了解您安裝的 RCF 版本是否有任何特定變更。

14. 將先前對交換器配置所做的任何自訂設定重新套用。
15. 確認 RCF 版本、自訂新增項目和交換器設定正確後，複製以下內容： `running-config`文件到 `startup-config`文件。

    有關Cisco命令的更多信息，請參閱 "Cisco Nexus 9000 系列 NX-OS 指令參考"指南。

    ```
    cs1# copy running-config startup-config

    [] 100% Copy complete
    ```

16. 重啟交換器cs1。在交換器重新啟動期間，您可以忽略節點上報告的「叢集交換器健康監視器」警報和「叢集連接埠關閉」事件。

    ```
    cs1# reload

    This command will reboot the system. (y/n)? [n] y
    ```

17. 驗證叢集上所有連接埠的健康狀況。

    a. 集群連接埠

       i. 確認叢集中所有節點的叢集連接埠均已啟動且運作狀況良好：

       ```
       network port show -ipspace cluster
       ```

顯示範例

```
cluster1::*> network port show -ipspace Cluster

Node: node1

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/10000
healthy  false
e7b       Cluster      Cluster          up   9000  auto/10000
healthy  false

Node: node1-02

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/10000
healthy  false
e7b       Cluster      Cluster          up   9000  auto/10000
healthy  false

Node: node1-03

Ignore
                                                  Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false
```

```
Node: node1-04

Ignore
                                                          Speed(Mbps)
Health   Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper
Status   Status
--------- ------------ ---------------- ---- ---- -----------
-------- ------
e7a       Cluster      Cluster          up   9000  auto/100000
healthy false
e7b       Cluster      Cluster          up   9000  auto/100000
healthy false
8 entries were displayed.
```

ii. 從叢集中驗證交換器的運作狀況。

```
network device-discovery show -protocol cdp
```

```
system cluster-switch show -is-monitoring-enabled-operational true
```

顯示範例

```
cluster1::*> network device-discovery show -protocol cdp

Node/       Local  Discovered
Protocol    Port   Device (LLDP: ChassisID)  Interface
Platform
----------- ------ ------------------------- ----------------
----------------
node1-01/cdp
            e10a   cs1(FLMXXXXXXXX)          Ethernet1/16/3
N9K-C9332D-GX2B
            e10b   cs2(FDOXXXXXXXX)          Ethernet1/16/3
N9K-C9332D-GX2B
            e11a   cs1(FLMXXXXXXXX)          Ethernet1/16/4
N9K-C9332D-GX2B
            e11b   cs2(FDOXXXXXXXX)          Ethernet1/16/4
N9K-C9332D-GX2B
            e1a    cs1(FLMXXXXXXXX)          Ethernet1/16/1
N9K-C9332D-GX2B
            e1b    cs2(FDOXXXXXXXX)          Ethernet1/16/1
N9K-C9332D-GX2B
            .
            .
            .
            e7a    cs1(FLMXXXXXXXX)          Ethernet1/16/2
N9K-C9332D-GX2B
            e7b    cs2(FDOXXXXXXXX)          Ethernet1/16/2
N9K-C9332D-GX2B


cluster1::*> system cluster-switch show -is-monitoring-enabled
-operational true

Switch                      Type               Address
Model
--------------------------- ------------------
--------------- ---------------
cs2(FDOXXXXXXXX)            cluster-network    10.228.137.233
N9K-C9332D-GX2B
     Serial Number: FDOXXXXXXXX
      Is Monitored: true
            Reason: None
  Software Version: Cisco Nexus Operating System (NX-OS)
Software, Version
                    10.4(2)
```

```
    Version Source: CDP/ISDP

cs1(FLMXXXXXXXX)            cluster-network    10.228.137.234
N9K-C9332D-GX2B
     Serial Number: FLMXXXXXXXX
      Is Monitored: true
            Reason: None
  Software Version: Cisco Nexus Operating System (NX-OS)
Software, Version
                    10.4(2)
    Version Source: CDP/ISDP

2 entries were displayed.
```

b. **HA** 連接埠

   i. 驗證所有 HA 連接埠是否處於正常運作狀態：

   ```
   ha interconnect status show -node <node-name>
   ```

顯示範例

```
cluster1::*> ha interconnect status show -node node1-01
  (system ha interconnect status show)

                        Node: node1-01
                Link 0 Status: up
                Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                        Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                   Port Name: e1a-17
                         MTU: 4096
             Link Information: ACTIVE


Interconnect Port 1 :
                   Port Name: e1b-18
                         MTU: 4096
             Link Information: ACTIVE

cluster1::*> ha interconnect status show -node node1-02
  (system ha interconnect status show)

                        Node: node1-02
                Link 0 Status: up
                Link 1 Status: up
            Is Link 0 Active: true
            Is Link 1 Active: true
          IC RDMA Connection: up
                        Slot: 0
              Debug Firmware: no


Interconnect Port 0 :
                   Port Name: e1a-17
                         MTU: 4096
             Link Information: ACTIVE


Interconnect Port 1 :
```

```
                  Port Name: e1b-18
                        MTU: 4096
            Link Information: ACTIVE
.
.
.
```

a. 儲存連接埠

i. 驗證所有儲存連接埠均處於正常狀態：

```
storage port show -port-type ENET
```

顯示範例

```
cluster1::*> storage port show -port-type ENET


                                     Speed
Node                Port Type  Mode    (Gb/s) State    Status
------------------ ---- ----- ------- ------ --------
-----------
node1-01
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-02
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
node1-03
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
node1-04
                    e10a ENET  -          100 enabled  online
                    e10b ENET  -          100 enabled  online
                    e11a ENET  -          100 enabled  online
                    e11b ENET  -          100 enabled  online
16 entries were displayed.
```

b. 儲存架連接埠

i. 驗證所有儲存架連接埠是否處於正常狀態：

```
storage shelf port show
```

顯示範例

```
cluster1::*> storage shelf port show

Shelf ID Module State        Internal?
-------- -- ------ ---------- ---------
1.1
         0 A      connected    false
         1 A      connected    false
         2 A      connected    false
         3 A      connected    false
         4 A      connected    false
         5 A      connected    false
         6 A      connected    false
         7 A      connected    false
         8 B      connected    false
         9 B      connected    false
        10 B      connected    false
        11 B      connected    false
        12 B      connected    false
        13 B      connected    false
        14 B      connected    false
        15 B      connected    false

16 entries were displayed.
```

ii. 驗證所有儲存架連接埠的連線狀態：

```
storage shelf port show -fields remote-device,remote-
port,connector-state
```

顯示範例

```
cluster1::*> storage shelf port show -fields remote-
device,remote-port,connector-state

shelf id connector-state remote-port    remote-device
----- -- -------------- -------------- -----------------
1.1   0  connected       Ethernet1/17/1 CX9332D-cs1
1.1   1  connected       Ethernet1/15/1 CX9364D-cs1
1.1   2  connected       Ethernet1/17/2 CX9332D-cs1
1.1   3  connected       Ethernet1/15/2 CX9364D-cs1
1.1   4  connected       Ethernet1/17/3 CX9332D-cs1
1.1   5  connected       Ethernet1/15/3 CX9364D-cs1
1.1   6  connected       Ethernet1/17/4 CX9332D-cs1
1.1   7  connected       Ethernet1/15/4 CX9364D-cs1
1.1   8  connected       Ethernet1/19/1 CX9332D-cs1
1.1   9  connected       Ethernet1/17/1 CX9364D-cs1
1.1   10 connected       Ethernet1/19/2 CX9332D-cs1
1.1   11 connected       Ethernet1/17/2 CX9364D-cs1
1.1   12 connected       Ethernet1/19/3 CX9332D-cs1
1.1   13 connected       Ethernet1/17/3 CX9364D-cs1
1.1   14 connected       Ethernet1/19/4 CX9332D-cs1
1.1   15 connected       Ethernet1/17/4 CX9364D-cs1

16 entries were displayed.
```

18. 驗證叢集是否運作正常：

    `cluster show`

    顯示範例

```
cluster1::*> cluster show
Node                 Health   Eligibility   Epsilon
-------------------- -------- ------------- -------
node1-01             true     true          false
node1-02             true     true          false
node1-03             true     true          true
node1-04             true     true          false

4 entries were displayed.
```

19. 在交換器 cs2 上重複步驟 4 至 18。

20. 啟用叢集 LIF 的自動回滾功能。

```
network interface modify -vserver Cluster -lif * -auto-revert true
```

步驟 **3**：驗證叢集網路配置和叢集健康狀況

1. 確認連接到叢集連接埠的交換器連接埠已啟用。

```
show interface brief
```

顯示範例

```
cs1# show interface brief | grep up
.
.
Eth1/9/3        1       eth  trunk  up      none
100G(D) --
Eth1/9/4        1       eth  trunk  up      none
100G(D) --
Eth1/15/1       1       eth  trunk  up      none
100G(D) --
Eth1/15/2       1       eth  trunk  up      none
100G(D) --
Eth1/15/3       1       eth  trunk  up      none
100G(D) --
Eth1/15/4       1       eth  trunk  up      none
100G(D) --
Eth1/16/1       1       eth  trunk  up      none
100G(D) --
Eth1/16/2       1       eth  trunk  up      none
100G(D) --
Eth1/16/3       1       eth  trunk  up      none
100G(D) --
Eth1/16/4       1       eth  trunk  up      none
100G(D) --
Eth1/17/1       1       eth  trunk  up      none
100G(D) --
Eth1/17/2       1       eth  trunk  up      none
100G(D) --
Eth1/17/3       1       eth  trunk  up      none
100G(D) --
Eth1/17/4       1       eth  trunk  up      none
100G(D) --
.
.
.
```

2. 確認預期節點仍然連接：

```
show cdp neighbors
```

顯示範例

```
cs1# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-
Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute

Device-ID          Local Intrfce  Hldtme Capability  Platform
Port ID
cs2(FDOXXXXXXXX)    Eth1/31        179    R S I s   N9K-C9364D-GX2A
Eth1/63
cs2(FDOXXXXXXXX)    Eth1/32        179    R S I s   N9K-C9364D-GX2A
Eth1/64
node1-01            Eth1/4/1       123    H         AFX-1K
e1a
node1-01            Eth1/4/2       123    H         AFX-1K
e7a
node1-01            Eth1/4/3       123    H         AFX-1K
e10a
node1-01            Eth1/4/4       123    H         AFX-1K
e11a
node1-02            Eth1/9/1       138    H         AFX-1K
e1a
node1-02            Eth1/9/2       138    H         AFX-1K
e7a
node1-02            Eth1/9/3       138    H         AFX-1K
e10a
node1-02            Eth1/9/4       138    H         AFX-1K
e11a
node1-03            Eth1/15/1      138    H         AFX-1K
e1a
node1-03            Eth1/15/2      138    H         AFX-1K
e7a
node1-03            Eth1/15/3      138    H         AFX-1K
e10a
node1-03            Eth1/15/4      138    H         AFX-1K
e11a
node1-04            Eth1/16/1      173    H         AFX-1K
e1a
node1-04            Eth1/16/2      173    H         AFX-1K
e7a
node1-04            Eth1/16/3      173    H         AFX-1K
e10a
```

```
node1-04            Eth1/16/4      173    H          AFX-1K
e11a

Total entries displayed: 18
```

3. 使用下列命令驗證叢集節點是否位於正確的叢集 VLAN 中：

```
show vlan brief
```

```
show interface trunk
```

顯示範例

```
cs1# show vlan brief

VLAN Name                              Status    Ports
---- --------------------------------- ---------
-------------------------------
1    default                           active    Po1, Po999, Eth1/31,
Eth1/32
                                                 Eth1/33, Eth1/34,
Eth1/1/1
                                                 Eth1/1/2, Eth1/1/3,
Eth1/1/4
                                                 Eth1/2/1, Eth1/2/2,
Eth1/2/3
                                                 Eth1/2/4, Eth1/3/1,
Eth1/3/2
                                                 Eth1/3/3, Eth1/3/4,
Eth1/4/1
                                                 Eth1/4/2, Eth1/4/3,
Eth1/4/4
                                                 Eth1/5/1, Eth1/5/2,
Eth1/5/3
                                                 Eth1/5/4, Eth1/6/1,
Eth1/6/2
                                                 Eth1/6/3, Eth1/6/4,
Eth1/7/1
                                                 Eth1/7/2, Eth1/7/3,
Eth1/7/4
                                                 Eth1/8/1, Eth1/8/2,
Eth1/8/3
                                                 Eth1/8/4, Eth1/9/1,
Eth1/9/2
                                                 Eth1/9/3, Eth1/9/4,
Eth1/10/1
                                                 Eth1/10/2,
Eth1/10/3, Eth1/10/4
                                                 Eth1/11/1,
Eth1/11/2, Eth1/11/3
                                                 Eth1/11/4,
Eth1/12/1, Eth1/12/2
                                                 Eth1/12/3,
Eth1/12/4, Eth1/13/1
                                                 Eth1/13/2,
Eth1/13/3, Eth1/13/4
```

```
                                                    Eth1/14/1,
Eth1/14/2, Eth1/14/3
                                                    Eth1/14/4,
Eth1/15/1, Eth1/15/2
                                                    Eth1/15/3,
Eth1/15/4, Eth1/16/1
                                                    Eth1/16/2,
Eth1/16/3, Eth1/16/4
                                                    Eth1/17/1,
Eth1/17/2, Eth1/17/3
                                                    Eth1/17/4,
Eth1/18/1, Eth1/18/2
                                                    Eth1/18/3,
Eth1/18/4, Eth1/19/1
                                                    Eth1/19/2,
Eth1/19/3, Eth1/19/4
                                                    Eth1/20/1,
Eth1/20/2, Eth1/20/3
                                                    Eth1/20/4,
Eth1/21/1, Eth1/21/2
                                                    Eth1/21/3,
Eth1/21/4, Eth1/22/1
                                                    Eth1/22/2,
Eth1/22/3, Eth1/22/4
                                                    Eth1/23/1,
Eth1/23/2, Eth1/23/3
                                                    Eth1/23/4,
Eth1/24/1, Eth1/24/2
                                                    Eth1/24/3,
Eth1/24/4, Eth1/25/1
                                                    Eth1/25/2,
Eth1/25/3, Eth1/25/4
                                                    Eth1/26/1,
Eth1/26/2, Eth1/26/3
                                                    Eth1/26/4,
Eth1/27/1, Eth1/27/2
                                                    Eth1/27/3,
Eth1/27/4, Eth1/28/1
                                                    Eth1/28/2,
Eth1/28/3, Eth1/28/4
                                                    Eth1/29/1,
Eth1/29/2, Eth1/29/3
                                                    Eth1/29/4,
Eth1/30/1, Eth1/30/2
                                                    Eth1/30/3, Eth1/30/4
17   VLAN0017                         active    Eth1/1/1, Eth1/1/2,
```

```
Eth1/1/3
                                                    Eth1/1/4, Eth1/2/1,
Eth1/2/2
                                                    Eth1/2/3, Eth1/2/4,
Eth1/3/1
                                                    Eth1/3/2, Eth1/3/3,
Eth1/3/4
                                                    Eth1/4/1, Eth1/4/2,
Eth1/4/3
                                                    Eth1/4/4, Eth1/5/1,
Eth1/5/2
                                                    Eth1/5/3, Eth1/5/4,
Eth1/6/1
                                                    Eth1/6/2, Eth1/6/3,
Eth1/6/4
                                                    Eth1/7/1, Eth1/7/2,
Eth1/7/3
                                                    Eth1/7/4, Eth1/8/1,
Eth1/8/2
                                                    Eth1/8/3, Eth1/8/4,
Eth1/9/1
                                                    Eth1/9/2, Eth1/9/3,
Eth1/9/4
                                                    Eth1/10/1,
Eth1/10/2, Eth1/10/3
                                                    Eth1/10/4,
Eth1/11/1, Eth1/11/2
                                                    Eth1/11/3,
Eth1/11/4, Eth1/12/1
                                                    Eth1/12/2,
Eth1/12/3, Eth1/12/4
                                                    Eth1/13/1,
Eth1/13/2, Eth1/13/3
                                                    Eth1/13/4,
Eth1/14/1, Eth1/14/2
                                                    Eth1/14/3,
Eth1/14/4, Eth1/15/1
                                                    Eth1/15/2,
Eth1/15/3, Eth1/15/4
                                                    Eth1/16/1,
Eth1/16/2, Eth1/16/3
                                                    Eth1/16/4,
Eth1/17/1, Eth1/17/2
                                                    Eth1/17/3,
Eth1/17/4, Eth1/18/1
                                                    Eth1/18/2,
```

```
Eth1/18/3, Eth1/18/4
                                                    Eth1/19/1,
Eth1/19/2, Eth1/19/3
                                                    Eth1/19/4,
Eth1/20/1, Eth1/20/2
                                                    Eth1/20/3,
Eth1/20/4, Eth1/21/1
                                                    Eth1/21/2,
Eth1/21/3, Eth1/21/4
                                                    Eth1/22/1,
Eth1/22/2, Eth1/22/3
                                                    Eth1/22/4,
Eth1/23/1, Eth1/23/2
                                                    Eth1/23/3,
Eth1/23/4, Eth1/24/1
                                                    Eth1/24/2,
Eth1/24/3, Eth1/24/4
                                                    Eth1/25/1,
Eth1/25/2, Eth1/25/3
                                                    Eth1/25/4,
Eth1/26/1, Eth1/26/2
                                                    Eth1/26/3,
Eth1/26/4, Eth1/27/1
                                                    Eth1/27/2,
Eth1/27/3, Eth1/27/4
                                                    Eth1/28/1,
Eth1/28/2, Eth1/28/3
                                                    Eth1/28/4,
Eth1/29/1, Eth1/29/2
                                                    Eth1/29/3,
Eth1/29/4, Eth1/30/1
                                                    Eth1/30/2,
Eth1/30/3, Eth1/30/4
18   VLAN0018                          active    Eth1/1/1, Eth1/1/2,
Eth1/1/3
                                                    Eth1/1/4, Eth1/2/1,
Eth1/2/2
                                                    Eth1/2/3, Eth1/2/4,
Eth1/3/1
                                                    Eth1/3/2, Eth1/3/3,
Eth1/3/4
                                                    Eth1/4/1, Eth1/4/2,
Eth1/4/3
                                                    Eth1/4/4, Eth1/5/1,
Eth1/5/2
                                                    Eth1/5/3, Eth1/5/4,
```

```
Eth1/6/1
                                                    Eth1/6/2, Eth1/6/3,
Eth1/6/4
                                                    Eth1/7/1, Eth1/7/2,
Eth1/7/3
                                                    Eth1/7/4, Eth1/8/1,
Eth1/8/2
                                                    Eth1/8/3, Eth1/8/4,
Eth1/9/1
                                                    Eth1/9/2, Eth1/9/3,
Eth1/9/4
                                                    Eth1/10/1,
Eth1/10/2, Eth1/10/3
                                                    Eth1/10/4,
Eth1/11/1, Eth1/11/2
                                                    Eth1/11/3,
Eth1/11/4, Eth1/12/1
                                                    Eth1/12/2,
Eth1/12/3, Eth1/12/4
                                                    Eth1/13/1,
Eth1/13/2, Eth1/13/3
                                                    Eth1/13/4,
Eth1/14/1, Eth1/14/2
                                                    Eth1/14/3,
Eth1/14/4, Eth1/15/1
                                                    Eth1/15/2,
Eth1/15/3, Eth1/15/4
                                                    Eth1/16/1,
Eth1/16/2, Eth1/16/3
                                                    Eth1/16/4,
Eth1/17/1, Eth1/17/2
                                                    Eth1/17/3,
Eth1/17/4, Eth1/18/1
                                                    Eth1/18/2,
Eth1/18/3, Eth1/18/4
                                                    Eth1/19/1,
Eth1/19/2, Eth1/19/3
                                                    Eth1/19/4,
Eth1/20/1, Eth1/20/2
                                                    Eth1/20/3,
Eth1/20/4, Eth1/21/1
                                                    Eth1/21/2,
Eth1/21/3, Eth1/21/4
                                                    Eth1/22/1,
Eth1/22/2, Eth1/22/3
                                                    Eth1/22/4,
```

```
Eth1/23/1, Eth1/23/2
                                                    Eth1/23/3,
Eth1/23/4, Eth1/24/1
                                                    Eth1/24/2,
Eth1/24/3, Eth1/24/4
                                                    Eth1/25/1,
Eth1/25/2, Eth1/25/3
                                                    Eth1/25/4,
Eth1/26/1, Eth1/26/2
                                                    Eth1/26/3,
Eth1/26/4, Eth1/27/1
                                                    Eth1/27/2,
Eth1/27/3, Eth1/27/4
                                                    Eth1/28/1,
Eth1/28/2, Eth1/28/3
                                                    Eth1/28/4,
Eth1/29/1, Eth1/29/2
                                                    Eth1/29/3,
Eth1/29/4, Eth1/30/1
                                                    Eth1/30/2,
Eth1/30/3, Eth1/30/4
30   VLAN0030                           active    Eth1/1/1, Eth1/1/2,
Eth1/1/3
                                                    Eth1/1/4, Eth1/2/1,
Eth1/2/2
                                                    Eth1/2/3, Eth1/2/4,
Eth1/3/1
                                                    Eth1/3/2, Eth1/3/3,
Eth1/3/4
                                                    Eth1/4/1, Eth1/4/2,
Eth1/4/3
                                                    Eth1/4/4, Eth1/5/1,
Eth1/5/2
                                                    Eth1/5/3, Eth1/5/4,
Eth1/6/1
                                                    Eth1/6/2, Eth1/6/3,
Eth1/6/4
                                                    Eth1/7/1, Eth1/7/2,
Eth1/7/3
                                                    Eth1/7/4, Eth1/8/1,
Eth1/8/2
                                                    Eth1/8/3, Eth1/8/4,
Eth1/9/1
                                                    Eth1/9/2, Eth1/9/3,
Eth1/9/4
                                                    Eth1/10/1,
```

```
Eth1/10/2, Eth1/10/3
                                                    Eth1/10/4,
Eth1/11/1, Eth1/11/2
                                                    Eth1/11/3,
Eth1/11/4, Eth1/12/1
                                                    Eth1/12/2,
Eth1/12/3, Eth1/12/4
                                                    Eth1/13/1,
Eth1/13/2, Eth1/13/3
                                                    Eth1/13/4,
Eth1/14/1, Eth1/14/2
                                                    Eth1/14/3,
Eth1/14/4, Eth1/15/1
                                                    Eth1/15/2,
Eth1/15/3, Eth1/15/4
                                                    Eth1/16/1,
Eth1/16/2, Eth1/16/3
                                                    Eth1/16/4,
Eth1/17/1, Eth1/17/2
                                                    Eth1/17/3,
Eth1/17/4, Eth1/18/1
                                                    Eth1/18/2,
Eth1/18/3, Eth1/18/4
                                                    Eth1/19/1,
Eth1/19/2, Eth1/19/3
                                                    Eth1/19/4,
Eth1/20/1, Eth1/20/2
                                                    Eth1/20/3,
Eth1/20/4, Eth1/21/1
                                                    Eth1/21/2,
Eth1/21/3, Eth1/21/4
                                                    Eth1/22/1,
Eth1/22/2, Eth1/22/3
                                                    Eth1/22/4,
Eth1/23/1, Eth1/23/2
                                                    Eth1/23/3,
Eth1/23/4, Eth1/24/1
                                                    Eth1/24/2,
Eth1/24/3, Eth1/24/4
                                                    Eth1/25/1,
Eth1/25/2, Eth1/25/3
                                                    Eth1/25/4,
Eth1/26/1, Eth1/26/2
                                                    Eth1/26/3,
Eth1/26/4, Eth1/27/1
                                                    Eth1/27/2,
```

```
Eth1/27/3, Eth1/27/4
                                                    Eth1/28/1,
Eth1/28/2, Eth1/28/3
                                                    Eth1/28/4,
Eth1/29/1, Eth1/29/2
                                                    Eth1/29/3,
Eth1/29/4, Eth1/30/1
                                                    Eth1/30/2,
Eth1/30/3, Eth1/30/4
40   VLAN0040                           active    Eth1/1/1, Eth1/1/2,
Eth1/1/3
                                                    Eth1/1/4, Eth1/2/1,
Eth1/2/2
                                                    Eth1/2/3, Eth1/2/4,
Eth1/3/1
                                                    Eth1/3/2, Eth1/3/3,
Eth1/3/4
                                                    Eth1/4/1, Eth1/4/2,
Eth1/4/3
                                                    Eth1/4/4, Eth1/5/1,
Eth1/5/2
                                                    Eth1/5/3, Eth1/5/4,
Eth1/6/1
                                                    Eth1/6/2, Eth1/6/3,
Eth1/6/4
                                                    Eth1/7/1, Eth1/7/2,
Eth1/7/3
                                                    Eth1/7/4, Eth1/8/1,
Eth1/8/2
                                                    Eth1/8/3, Eth1/8/4,
Eth1/9/1
                                                    Eth1/9/2, Eth1/9/3,
Eth1/9/4
                                                    Eth1/10/1,
Eth1/10/2, Eth1/10/3
                                                    Eth1/10/4,
Eth1/11/1, Eth1/11/2
                                                    Eth1/11/3,
Eth1/11/4, Eth1/12/1
                                                    Eth1/12/2,
Eth1/12/3, Eth1/12/4
                                                    Eth1/13/1,
Eth1/13/2, Eth1/13/3
                                                    Eth1/13/4,
Eth1/14/1, Eth1/14/2
                                                    Eth1/14/3,
```

```
Eth1/14/4, Eth1/15/1
                                                    Eth1/15/2,
Eth1/15/3, Eth1/15/4
                                                    Eth1/16/1,
Eth1/16/2, Eth1/16/3
                                                    Eth1/16/4,
Eth1/17/1, Eth1/17/2
                                                    Eth1/17/3,
Eth1/17/4, Eth1/18/1
                                                    Eth1/18/2,
Eth1/18/3, Eth1/18/4
                                                    Eth1/19/1,
Eth1/19/2, Eth1/19/3
                                                    Eth1/19/4,
Eth1/20/1, Eth1/20/2
                                                    Eth1/20/3,
Eth1/20/4, Eth1/21/1
                                                    Eth1/21/2,
Eth1/21/3, Eth1/21/4
                                                    Eth1/22/1,
Eth1/22/2, Eth1/22/3
                                                    Eth1/22/4,
Eth1/23/1, Eth1/23/2
                                                    Eth1/23/3,
Eth1/23/4, Eth1/24/1
                                                    Eth1/24/2,
Eth1/24/3, Eth1/24/4
                                                    Eth1/25/1,
Eth1/25/2, Eth1/25/3
                                                    Eth1/25/4,
Eth1/26/1, Eth1/26/2
                                                    Eth1/26/3,
Eth1/26/4, Eth1/27/1
                                                    Eth1/27/2,
Eth1/27/3, Eth1/27/4
                                                    Eth1/28/1,
Eth1/28/2, Eth1/28/3
                                                    Eth1/28/4,
Eth1/29/1, Eth1/29/2
                                                    Eth1/29/3,
Eth1/29/4, Eth1/30/1
                                                    Eth1/30/2,
Eth1/30/3, Eth1/30/4


cs1# show interface trunk
```

```
--------------------------------------------------------------------------------
------------
Port          Native  Status        Port
              Vlan                  Channel
--------------------------------------------------------------------------------
------------
Eth1/1/1      1       trunking      --
Eth1/1/2      1       trunking      --
Eth1/1/3      1       trunking      --
Eth1/1/4      1       trunking      --
Eth1/2/1      1       trunking      --
Eth1/2/2      1       trunking      --
Eth1/2/3      1       trunking      --
Eth1/2/4      1       trunking      --
.
.
.
Eth1/30/1     none
Eth1/30/2     none
Eth1/30/3     none
Eth1/30/4     none
Eth1/31       none
Eth1/32       none
Po1           1
```

有關具體連接埠和 VLAN 使用詳情，請參閱 RCF 中的橫幅和重要說明部分。

4. 驗證 cs1 和 cs2 之間的 ISL 連線是否正常：

```
show port-channel summary
```

顯示範例

```
cs1# show port-channel summary
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        b - BFD Session Wait
        S - Switched    R - Routed
        U - Up (port-channel)
        p - Up in delay-lacp mode (member)
        M - Not in use. Min-links not met
--------------------------------------------------------------------------
------------
Group Port-       Type     Protocol  Member Ports
      Channel
--------------------------------------------------------------------------
------------
1     Po1(SU)     Eth      LACP      Eth1/31(P)   Eth1/32(P)
999   Po999(SD)   Eth      NONE      --
cs1#
```

5. 確認叢集 LIF 已恢復到其原始連接埠：

```
network interface show -role cluster
```

顯示範例

```
cluster1::*> network interface show -role cluster

            Logical         Status     Network             Current
Current Is
Vserver     Interface       Admin/Oper Address/Mask        Node
Port    Home
----------- --------------- ---------- ------------------
----------- ------- ----
Cluster
            node1-01_clus1  up/up      169.254.36.44/16    node1-01
e7a     true
            node1-01_clus2  up/up      169.254.7.5/16      node1-01
e7b     true
            node1-02_clus1  up/up      169.254.197.206/16 node1-02
e7a     true
            node1-02_clus2  up/up      169.254.195.186/16 node1-02
e7b     true
            node1-03_clus1  up/up      169.254.192.49/16   node1-03
e7a     true
            node1-03_clus2  up/up      169.254.182.76/16   node1-03
e7b     true
            node1-04_clus1  up/up      169.254.59.49/16    node1-04
e7a     true
            node1-04_clus2  up/up      169.254.62.244/16   node1-04
e7b     true

8 entries were displayed.
```

如果任何叢集 LIF 尚未返回其來源端口，請從本機節點手動將其還原：

`network interface revert -vserver vserver_name -lif <lif-name>`

6. 驗證叢集是否運作正常：

`cluster show`

顯示範例

```
cluster1::*> cluster show
Node                 Health  Eligibility   Epsilon
-------------------- ------- ------------- -------
node1-01             true    true          false
node1-02             true    true          false
node1-03             true    true          true
node1-04             true    true          false

4 entries were displayed.
```

7. 驗證遠端集群介面的連接性：

   a. 你可以使用 `network interface check cluster-connectivity show`用於顯示叢集連接性可訪問性檢查詳細資訊的命令：

      ```
      network interface check cluster-connectivity show
      ```

顯示範例

```
cluster1::*> network interface check cluster-connectivity show

                                  Source           Destination
Packet
Node   Date                       LIF              LIF
Loss
------ -------------------------- ---------------
-------------- -----------
node1-01
       6/4/2025 03:13:33 -04:00   node1-01_clus2  node1-02_clus1
none
       6/4/2025 03:13:34 -04:00   node1-01_clus2  node1-02_clus1
none


node1-02
       6/4/2025 03:13:33 -04:00   node1-02_clus2  node1-01_clus1
none
       6/4/2025 03:13:34 -04:00   node1-02_clus2  node1-01_clus2
none
.
.
.
```

b. 或者，您可以使用 `cluster ping-cluster -node <node-name>`檢查連接性的命令：

```
cluster ping-cluster -node <node-name>
```

顯示範例

```
cluster1::*> cluster ping-cluster -node local
Host is node1-04
Getting addresses from network interface table...
Cluster node1-01_clus1 169.254.36.44 node1-01 e7a
Cluster node1-01_clus2 169.254.7.5   node1-01 e7b
Cluster node1-02_clus1 169.254.197.206 node1-02 e7a
Cluster node1-02_clus2 169.254.195.186 node1-02 e7b
Cluster node1-03_clus1 169.254.192.49 node1-03 e7a
Cluster node1-03_clus2 169.254.182.76 node1-03 e7b
Cluster node1-04_clus1 169.254.59.49 node1-04 e7a
Cluster node1-04_clus2 169.254.62.244 node1-04 e7b
Local = 169.254.59.49 169.254.62.244
Remote = 169.254.36.44 169.254.7.5 169.254.197.206 169.254.195.186
169.254.192.49 169.254.182.76
Cluster Vserver Id = 4294967293
Ping status:
............
Basic connectivity succeeds on 12 path(s)
Basic connectivity fails on 0 path(s)
................................................
Detected 9000 byte MTU on 12 path(s):
    Local 169.254.59.49 to Remote 169.254.182.76
    Local 169.254.59.49 to Remote 169.254.192.49
    Local 169.254.59.49 to Remote 169.254.195.186
    Local 169.254.59.49 to Remote 169.254.197.206
    Local 169.254.59.49 to Remote 169.254.36.44
    Local 169.254.59.49 to Remote 169.254.7.5
    Local 169.254.62.244 to Remote 169.254.182.76
    Local 169.254.62.244 to Remote 169.254.192.49
    Local 169.254.62.244 to Remote 169.254.195.186
    Local 169.254.62.244 to Remote 169.254.197.206
    Local 169.254.62.244 to Remote 169.254.36.44
    Local 169.254.62.244 to Remote 169.254.7.5
Larger than PMTU communication succeeds on 12 path(s)
RPC status:
6 paths up, 0 paths down (tcp check)
6 paths up, 0 paths down (udp check)
```

下一步是什麼？

升級 RCF 後，您"驗證 SSH 配置"。

請檢查您的 SSH 配置

如果您正在使用乙太網路交換器健康監視器 (CSHM) 和日誌收集功能，請驗證交換器上是否啟用了 SSH 和 SSH 金鑰。

步驟

1. 確認 SSH 已啟用：

```
(switch) show ssh server
ssh version 2 is enabled
```

2. 請確認 SSH 金鑰已啟用：

```
show ssh key
```

顯示範例

```
(switch)# show ssh key


rsa Keys generated:Wed May 14 18:49:37 2025

ssh-rsa
AAAAB3NzaC1yc2EAAAADAQABAAAAgQCndfdJesautdCwk5Mk/7pKOFl0IeShc9uBtj74
F52vbjyf1FHOCXX7Xf3Vopxs6L1hbzgCpFLo9E7pZBd3I+1AoLyQULtR3svzNieGY8ml
WZGLtpKf/P2fDCd8JVJaejrwQhm49WUPiC6ziEqBDMOGhJpD2e9++umyDdr6
NbmK8Q==


bitcount:1024
fingerprint:
SHA256:QtNU+Qq2I4ZfYwEfMEB1+z8w7xaKTlantTdsjLBx+OU

could not retrieve dsa key information

ecdsa Keys generated:Wed May 14 18:50:56 2025


ecdsa-sha2-nistp521
AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAAIbmlzdHA1MjEAAACFBAAYnv17T+JlGmH8
rg81xiOow0mPmkbkIG0o7h9EchixO3i3KjgQr8AwqkRHNTcQC3lRnizhJFUeMGCwuQTu
rziRCwE6fAOkWa2MRyXA1DYRKKXjVEOnW9+MvinMipHQ0cCc
YSExhh7j4HvWHIuYv8RmD7e3rmDQFlyyiLwdmpGfas2yaw==


bitcount:521
fingerprint:
SHA256:7cpZ5NGnIq5Iamw67ke+9o4qG9D3xxmGPauVl4X5934


(switch)# show feature | include scpServer
scpServer             1          enabled
(switch)# show feature | include ssh
sshServer             1          enabled
(switch)#
```

下一步是什麼？

驗證完 SSH 配置後，您"配置交換器健康監控"。

將 9332D-GX2B 交換器重設為出廠預設值

若要將 9332D-GX2B 交換器重設為原廠預設設置，必須清除 9332D-GX2B 交換器設定。

關於此任務

- 您必須使用串列埠控制台連接到交換器。
- 此任務會重置管理網路的配置。

步驟

1. 清除現有配置：

   `write erase`

   ```
   (cs2)# write erase

   Warning: This command will erase the startup-configuration.
   Do you wish to proceed anyway? (y/n) [n] y
   ```

2. 重新載入交換器軟體：

   `reload`

   ```
   (cs2)# reload

   This command will reboot the system. (y/n)? [n] y
   ```

   系統重新啟動並進入設定精靈。在啟動過程中，如果收到提示“中止自動配置並繼續正常設定？”(yes/no)[n]”，您應該回答*yes*才能繼續。

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