配置Catalyst 9600交换机

目录

简介

本文档介绍设置Catalyst 9600交换机的初始配置和验证过程。

先决条件

要求

Cisco 建议您了解以下主题：

确保机箱和管理引擎按照安装指南进行安装。

- 机箱安装指南
- Supervisor安装指南

使用的组件

本文档中的信息基于以下软件和硬件版本进行配置：

- Hardware:Catalyst 9600 交换机
- 软件：Cisco IOS® XE 16.12.3a

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

背景信息

您可以分三步启动、配置和验证Catalyst 9600。

启动

- 连接控制台
- 启动系统

- 观察控制台消息
- 选择配置对话框选项

配置

- 设备管理
- 主机名
- 时钟
- 保存配置

验证

- 软件版本和软件包
- 系统硬件、电源等。
- 管理IP连接
- 系统运行状况
- 时间

启动

- 使用RJ45或USB将PC连接到Catalyst 9600的控制台
- 为系统通电
- 观察控制台在屏幕上打印系统硬件初始化和其他信息

初始启动：

```
Initializing Hardware...
Initializing Hardware......
 System Bootstrap, Version 17.3.1r[FC2], RELEASE SOFTWARE (P)
Compiled 30-04-2020 12:00:00.00 by rel

Current ROMMON image : Primary Rommon Image

Last reset cause:LocalSoft
C9600-SUP-1 platform with 16777216 Kbytes of main memory

Preparing to autoboot. [Press Ctrl-C to interrupt]  0
boot: attempting to boot from [bootflash:packages.conf]
boot: reading file packages.conf
<truncated
###############################################################################
 <truncated>

Base Ethernet MAC Address          : 6c:b2:ae:4a:70:c0
Motherboard Assembly Number        : 4C57
Motherboard Serial Number          : FXS230103TN
Model Revision Number              : V02
Motherboard Revision Number        : 3
Model Number                       : C9606R
System Serial Number               : FXS2302Q2EP
```

请等待，直到您看到“系**统配置”**对话框。选择“否”以进入手动配置模式，并选择**“是”**以终止自动安装，以进入简单的手动配置。

```
    --- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no
```

```
Would you like to terminate autoinstall? [yes]: yes

Press RETURN to get started
*Nov 5 15:40:26.909: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to
down *Nov 5 15:40:26.909: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0,
changed state to down
```

配置

注意：在“启用”**模式下**的任意时间点使用show running-config命令检查配置的值。

使用网络的IP地址配置管理端口并启用该端口。

```
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface gigabitEthernet 0/0
Switch(config-if)#ip address 10.122.186.8 255.255.255.240
Switch(config-if)#no shutdown
```

配置静态路由以到达管理网络的默认网关，使用网络IP和网关。

```
Switch(config)#ip route vrf Mgmt-vrf 10.122.157.250 255.255.255.255 10.122.186.1
```

配置线路VTY、虚拟终端，以便通过telnet访问并设置您选择的密码。

```
Switch(config)#line vty 0 4
Switch(config-line)#password cisco
Switch(config-line)#login
```

传输输**入全部**允许所有协议(例如ssh、telnet)，以便通过VTY会话访问设备。

```
Switch(config-line)#transport input all
Switch(config-line)#exit
```

配置控制台访问的用户模式口令。

```
Switch(config)#line console 0
Switch(config-line)#password cisco
Switch(config-line)#login
Switch(config-line)#exit
```

配置强启用模式口令。

```
Switch(config)#enable secret cisco
```

设置系统时钟。

```
Switch(config)#clock timezone utc +5 30

*Nov 6 04:34:58.910: %SYS-6-CLOCKUPDATE: System clock has been updated from 10:05:58 utc Fri Nov
6 2020 to 10:04:58 utc Fri Nov 6 2020, configured from console by console.
*Nov 6 04:35:59.634: %SYS-5-CONFIG_I: Configured from console by console

Switch#clock set 04:30:00 6 Nov 2020
```

```
*Nov 5 23:00:00.000: %SYS-6-CLOCKUPDATE: System clock has been updated from 10:06:19 utc Fri Nov
6 2020 to 04:30:00 utc Fri Nov 6 2020, configured from console by console.
Nov 5 23:00:00.000: %PKI-6-AUTHORITATIVE_CLOCK: The system clock has been set.
```

为系统配置主机名。

```
Switch(config)#hostname Catalyst-9600
```

将到目前为止配置的配置保存到启动配置。

```
Catalyst-9600#write memory
Building configuration...
[OK]
*Nov  5 16:11:46.061: %SYS-2-PRIVCFG_ENCRYPT: Successfully encrypted private config file
```

验证

检查系统上的软件版本，观察运行时间、系统详细信息等。

```
Catalyst-9600#show version
Cisco IOS XE Software, Version 16.12.03a
Cisco IOS Software [Gibraltar], Catalyst L3 Switch Software (CAT9K_IOSXE), Version 16.12.3a,
RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2020 by Cisco Systems, Inc.
Compiled Tue 28-Apr-20 09:37 by mcpre


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documentation or "License Notice" file accompanying the IOS-XE software,
or the applicable URL provided on the flyer accompanying the IOS-XE
software.


ROM: IOS-XE ROMMON
BOOTLDR: System Bootstrap, Version 17.3.1r[FC2], RELEASE SOFTWARE (P)

Catalyst-9600 uptime is 36 minutes
Uptime for this control processor is 37 minutes
System returned to ROM by Reload Command
System image file is "bootflash:packages.conf"
Last reload reason: Reload Command



This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
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agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
```

```
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.


Technology Package License Information:

------------------------------------------------------------------------------
Technology-package                                  Technology-package
Current                       Type                     Next reboot
------------------------------------------------------------------------------
network-advantage   Smart License                          network-advantage
dna-advantage            Subscription Smart License     dna-advantage
AIR License Level: AIR DNA Advantage
Next reload AIR license Level: AIR DNA Advantage


Smart Licensing Status: UNREGISTERED/EVAL MODE

cisco C9606R (X86) processor (revision V00) with 1867991K/6147K bytes of memory.
Processor board ID FXS2302Q2EP
1 Virtual Ethernet interface
24 Forty/Hundred Gigabit Ethernet interfaces
48 TwentyFive Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
16009160K bytes of physical memory.
11161600K bytes of Bootflash at bootflash:.
1638400K bytes of Crash Files at crashinfo:.
0K bytes of WebUI ODM Files at webui:.

Base Ethernet MAC Address          : 6c:b2:ae:4a:70:c0
Motherboard Assembly Number        : 4C57
Motherboard Serial Number          : FXS230103TN
Model Revision Number              : V02
Motherboard Revision Number        : 3
Model Number                       : C9606R
System Serial Number               : FXS2302Q2EP

Configuration register is 0x102
```

检查已安装的软件包。

```
Catalyst-9600#show install summary
[ R0 R1 ] Installed Package(s) Information:
State (St): I - Inactive, U - Activated & Uncommitted,
           C - Activated & Committed, D - Deactivated & Uncommitted
--------------------------------------------------------------------------------
Type  St   Filename/Version
--------------------------------------------------------------------------------
IMG   C    16.12.3a.0.4

--------------------------------------------------------------------------------
Auto abort timer: inactive
--------------------------------------------------------------------------------
```

检查管理VRF的路由。

```
Switch#show ip route vrf Mgmt-vrf

Routing Table: Mgmt-vrf
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
```

```
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, m - OMP
n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
H - NHRP, G - NHRP registered, g - NHRP registration summary
o - ODR, P - periodic downloaded static route, l - LISP
a - application route
+ - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

S*    0.0.0.0/0 [1/0] via 10.122.186.1                        <--- the default gateway
10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
S 10.122.157.250/32 [1/0] via 10.122.186.1
C 10.122.186.0/28 is directly connected, GigabitEthernet0/0
L 10.122.186.8/32 is directly connected, GigabitEthernet0/0
```

检查通过默认网关到网络的连通性。

```
Switch#ping vrf Mgmg-vrf 10.122.186.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.122.186.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms
Switch#
```

检查系统中安装的模块。

```
Catalyst-9600#show module
Chassis Type: C9606R

Mod Ports Card Type                                  Model          Serial No.
---+-----+--------------------------------------+--------------+--------------
1   24   24-Port 40GE/12-Port 100GE                C9600-LC-24C     CAT2252L0PY
3   0    Supervisor 1 Module                       C9600-SUP-1      CAT2252L0SH
4   0    Supervisor 1 Module                       C9600-SUP-1      CAT2252L0SU
6   48   48-Port 10GE / 25GE                       C9600-LC-48YL    CAT2302L16G

Mod MAC addresses                     Hw   Fw           Sw                  Status
---+--------------------------------+----+------------+-------------------+--------
1   70B3.175A.7580 to 70B3.175A.75FF 0.10 17.3.1r[FC2]  16.12.03a          ok
3   70B3.175A.5680 to 70B3.175A.56FF 0.10 17.3.1r[FC2]  16.12.03a          ok
4   70B3.175A.5600 to 70B3.175A.567F 0.10 17.3.1r[FC2]  16.12.03a          ok
6   6C8B.D307.6680 to 6C8B.D307.66FF 0.10 17.3.1r[FC2]  16.12.03a          ok

Mod Redundancy Role     Operating Redundancy Mode Configured Redundancy Mode
---+-------------------+-------------------------+---------------------------
3   Active              sso                       sso
4   Standby             sso                       sso

Chassis MAC address range: 64 addresses from 6cb2.ae4a.70c0 to 6cb2.ae4a.70ff
```

使用加电自检(POST)和诊断结果检查系统运行状况。

```
Catalyst-9600#show post
Stored system POST messages:

Switch C9606R
--------------
```

```
Thu Nov  5 15:34:27 2020 POST: Module: 6 Mac Loopback Begin
Thu Nov  5 15:34:27 2020 POST: Module: 6 Mac Loopback: loopback Test: End, Status Passed

Thu Nov  5 15:34:27 2020 POST: Module: 1 Mac Loopback Begin
Thu Nov  5 15:34:27 2020 POST: Module: 1 Mac Loopback: loopback Test: End, Status Passed

Catalyst-9600#show diagnostic result module all

Current bootup diagnostic level: minimal

module 1:   SerialNo : CAT2252L0PY

  Overall Diagnostic Result for module 1 : PASS
  Diagnostic level at card bootup: minimal

  Test results: (. = Pass, F = Fail, U = Untested)

    1) TestGoldPktLoopback:

   Port  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
   ------------------------------------------------------------------------------
         U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U

   Port 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
   ------------------------------------------------------------------------------
         U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U


    2) TestOBFL ------------------------> U
    3) TestThermal ---------------------> .
    4) TestPortTxMonitoring:

   Port  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
   ------------------------------------------------------------------------------
         U  U  U  U  U  U  U  U  U  .  U  .  U  U  U  U  U  U  U  U  U  U  .  U

   Port 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
   ------------------------------------------------------------------------------
         U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U


module 3:   SerialNo : CAT2252L0SH

  Overall Diagnostic Result for module 3 : PASS
  Diagnostic level at card bootup: minimal

  Test results: (. = Pass, F = Fail, U = Untested)

    1) TestOBFL ------------------------> U
    2) TestFantray ---------------------> .
    3) TestThermal ---------------------> .
    4) TestScratchRegister -------------> .


module 4:   SerialNo : CAT2252L0SU

  Overall Diagnostic Result for module 4 : PASS
  Diagnostic level at card bootup: minimal

  Test results: (. = Pass, F = Fail, U = Untested)

    1) TestOBFL ------------------------> U
    2) TestFantray ---------------------> U
```

```
    3) TestThermal ----------------------> .
    4) TestScratchRegister -------------> U


module 6:   SerialNo : CAT2302L16G

  Overall Diagnostic Result for module 6 : PASS
  Diagnostic level at card bootup: minimal

  Test results: (. = Pass, F = Fail, U = Untested)

    1) TestGoldPktLoopback:

   Port  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
   ------------------------------------------------------------------------
         U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U

   Port 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
   ------------------------------------------------------------------------
         U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U  U


    2) TestOBFL ------------------------> U
    3) TestThermal ----------------------> .
    4) TestPortTxMonitoring:

   Port  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
   ------------------------------------------------------------------------
         .  .  U  U  U  .  U  .  U  .  .  .  U  U  .  U  U  U  U  U  U  U  U  U

   Port 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
   ------------------------------------------------------------------------
         U  U  .  U  U  U  U  U  U  U  U  U  U  U  .  U  .  U  U  U  U  .  .  U
```

检查时钟是否设置正确。

```
Catalyst-9600#show clock
*16:32:55.196 UTC Thu Nov 5 2020
```

检查已安装的电源及其运行状况。

```
Catalyst-9600#show power detail
Power                                                          Fan States
Supply  Model No              Type  Capacity  Status        1     2
------  --------------------  ----  --------  ------------  -----------
PS1     C9600-PWR-2KWAC       ac    2000 W    active        good  good
PS4     C9600-PWR-2KWAC       ac    2000 W    active        good  good

PS Current Configuration Mode : none
PS Current Operating State    : none

Power supplies currently active    : 2
Power supplies currently available : 2

Power Summary          Maximum
 (in Watts)    Used    Available
-------------  ------  ---------
System Power   2800    3940
-------------  ------  ---------
```

```
Total          2800    3940


Power Budget Mode            : Dual Sup

                           Power                                    Out of   In
Mod  Model No              State     Budget  Instantaneous  Peak    Reset    Reset
---  --------------------  --------  ------  -------------  ----    -------  -----
1    C9600-LC-24C          accepted  300     0              0       300      10
3    C9600-SUP-1           accepted  950     0              0       950      202
4    C9600-SUP-1           accepted  950     0              0       950      202
6    C9600-LC-48YL         accepted  300     0              0       300      10
FM1  C9606-FAN             accepted  300     --             --      300      --
---  --------------------  --------  ------  -------------  ----    -------  -----
Total allocated power:            2800
Total required power: 2800
```

相关信息

- 请按照系统管[理配置指南了](#)解详细的配置选项。
- [技术支持和文档 - Cisco Systems](#)