Configure a Catalyst 9600 Switch

Contents

Introduction

This document describes the initial configuration and verification procedure to set up the Catalyst 9600 switch.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

Ensure that the Chassis and Supervisor are installed as per the installation guides.

- Chassis Installation Guide
- Supervisor Installation Guide

Components Used

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

- Hardware: Catalyst 9600 Switch
- Software: Cisco IOS® XE 16.12.3a

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

Background Information

You can boot up, configure and verify Catalyst 9600 in three steps.

Bring Up

- Connect the console
- Power up the system
- Observe console messages
- Select configuration dialog option

Configure

- Device management
- Hostname
- Clock
- Save the configuration

Verify

- Software version and package
- System hardware, power, and so on.
- Management IP connectivity
- System health
- Time

Bring Up

- Connect the PC to Console of Catalyst 9600 with RJ45 or USB
- Power-up the system
- Observe console prints system hardware initialization and other information on the screen

Initial bootup:

```
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
```

Wait till you see the **System Configuration Dialog** box. Select the option **No** in order to enter manual configuration mode and select **Yes** in order to terminate autoinstall, to get into the simple manual configuration.

```
    --- 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
```

Configure

> **Note**: Use the **show running-config** command at any point of time in "enable" mode to check configured values.

Configure Management Port with an IP Address of your network and enable the port.

```
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
```

Configure a static route in order to reach the Default Gateway for Management network, use your network IP and Gateway.

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

Configure Line VTY, Virtual terminal in order to access via telnet and set a password of your choice.

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

Transport **input all** allows all protocols (eg. ssh, telnet) in order to access the device through VTY sessions.

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

Configure the user-mode password for console access.

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

Configure a strong enable mode password.

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

Set the system clock.

```
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.
```

Configure hostname for the system.

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

Save the configuration configured so far into startup-config.

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

Verify

Check the software version on the system, observe the up-time, system details, and so on.

```
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


Cisco IOS-XE software, Copyright (c) 2005-2020 by cisco Systems, Inc.
All rights reserved.  Certain components of Cisco IOS-XE software are
licensed under the GNU General Public License ("GPL") Version 2.0.  The
software code licensed under GPL Version 2.0 is free software that comes
with ABSOLUTELY NO WARRANTY.  You can redistribute and/or modify such
GPL code under the terms of GPL Version 2.0.  For more details, see the
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
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
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
```

Check the installed packages.

```
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
```

```
--------------------------------------------------------------------------------
```

Check the route for the Management VRF.

```
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
```

Check the reachability to the network via default-gateway.

```
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#
```

Check the modules installed in the system.

```
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
```

Check the system health using Power-on self-test (POST) and Diagnostic results.

```
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
```

Check if the clock is set properly.

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

Check the Power Supplies installed and their health.

```
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
```

Related Information

- Please follow the system management configuration guide for detailed configuration options.
- **Technical Support & Documentation - Cisco Systems**