Upgrade CPLD on Catalyst 9400 SVL Setup

Contents

Introduction

This document describes a step-by-step procedure on how to upgrade the Complex Programmable Logic Device (CPLD) version on a Catalyst 9400 StackWise Virtual Link (SVL) setup.

Prerequisites

Requirements

Cisco recommends that you have basic knowledge of Stackwise-Virtual setup and configuration on catalyst 9400.

Components Used

The information in this document is based on the **PID: C9404R** software and hardware versions.

Modules:

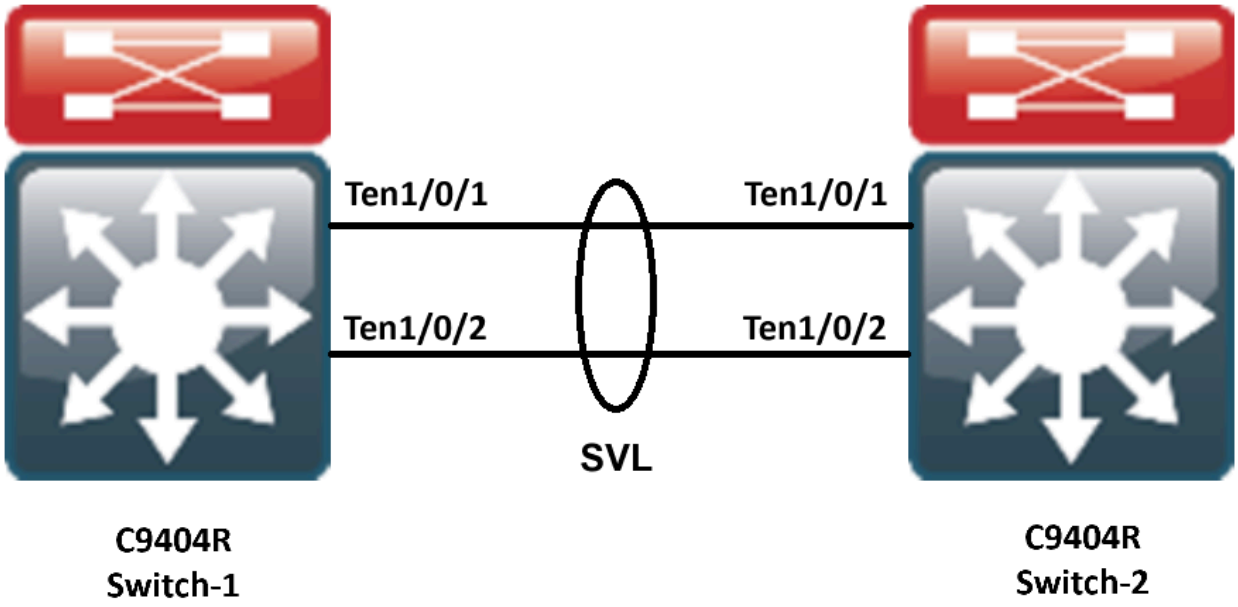
C9400-SUP-1XL

C9400-LC-24XS

SW Version: 17.09.4a

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.

Topology



Problem

In Catalyst 9400, while upgrading the Cisco IOS® version in some rare cases the CPLD version of the device is not upgraded. The CPLD and the Rommon version for the particular version can be checked from https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst9400/software/release/17-13/release_notes/ol-17-13-9400/rommon_versions.html link.

Refer to this snippet:

<#root>

```
9400-1#show platform
Chassis type: C9404R

Switch 1

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
1         C9400-LC-24XS       ok                    00:05:00
1/0       C9400-LC-24XS       ok                    00:00:56
2         C9400-SUP-1XL       ok                    00:05:00
2/0       C9400-SUP-1XL       ok                    00:00:53
R0

ok, active

          00:05:00
P1        C9400-PWR-3200AC    ok                    00:04:38
P9        C9404-FAN           ok                    00:04:37

Slot      CPLD Version        Firmware Version
--------- ------------------- ------------------------------------
1         20062105            17.10.1r
2         20062105            17.10.1r

Switch 2
```

```
Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
1         C9400-LC-24XS       ok                    00:04:57
1/0       C9400-LC-24XS       ok                    00:00:08
2         C9400-SUP-1XL       ok                    00:04:57
2/0       C9400-SUP-1XL       ok                    00:00:07
R0
```

ok, standby

```
         00:04:57
P1        C9400-PWR-3200AC    ok                    00:04:35
P9        C9404-FAN           ok                    00:04:33

Slot      CPLD Version        Firmware Version
--------- ------------------- ---------------------------------------
```

1 19032905 17.10.1r >>>>>>>>>>CPLD did not get upgraded

2 19032905 17.10.1r >>>>>>>>>>CPLD did not get upgraded

In this case, the CPLD of the standby did not get upgraded after the upgrade.

Upgrade Procedure

Step 1. Use the show redundacny in order to verify if the SVL is working fine.

<#root>

```
9400-1#show redundancy
Redundant System Information :
------------------------------
Available system uptime = 4 minutes
Switchovers system experienced = 0
Standby failures = 0
Last switchover reason = none

Hardware Mode = Duplex
Configured Redundancy Mode = sso
```

Operating Redundancy Mode = sso

```
Maintenance Mode = Disabled
Communications = Up

Current Processor Information :
-------------------------------
Active Location = Switch 1
```

Current Software state = ACTIVE

```
Uptime in current state = 4 minutes
Image Version = Cisco IOS Software [Cupertino], Catalyst L3 Switch Software (CAT9K_IOSXE), Version 17.9
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2023 by Cisco Systems, Inc.
Compiled Fri 20-Oct-23 10:44 by mcpre
```

```
BOOT = bootflash:packages.conf;

Peer Processor Information :
----------------------------
```

Standby Location = Switch 2 >>>>>>>>>>Switch 2 is standby

```
Current Software state = STANDBY HOT
Uptime in current state = 0 minutes
Image Version = Cisco IOS Software [Cupertino], Catalyst L3 Switch Software (CAT9K_IOSXE), Version 17.9
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2023 by Cisco Systems, Inc.
Compiled Fri 20-Oct-23 10:44 by mcpre
BOOT = bootflash:packages.conf;
```

Step 2. In order to upgrade the CPLD version use this command:

<#root>

upgrade hw-programmable cpld filename bootflash: switch {1-2} RP active

<#root>

9400-1#

upgrade hw-programmable cpld filename bootflash: switch 2 R0

```
Firmware upgrade requires the SVL member to reload. Do you want to proceed?(y/n)y
Use cli 'redundancy reload peer' to upgrade the firmware on peer
```

9400-1#

redundancy reload peer

```
Stack is in Half ring setup; Reloading a switch might cause stack split
Reload peer [confirm]
Preparing to reload peer
```

Step 3. Here you can see that the CPLD is getting upgraded:

<#root>

```
Chassis 2 reloading, reason - Admin reload CLI
May 4 01:34:23.829: %PMAN-5-EXITACTION: R0/0: pvp:


Initializing Hardware......

System Bootstrap, Version 17.10.1r, RELEASE SOFTWARE (P)
Compiled Tue Aug 2 13:02:51 2022 by rel
```

```
Current ROMMON image : Primary
Last reset cause : SoftwareResetTrig
C9400-SUP-1XL platform with 16777216 Kbytes of main memory


Starting System FPGA Upgrade .....



Programming SPI Primary image is completed.



Authenticating SPI Primary image .....
IO FPGA image is authenticated successfully.

Programming Header .....
FPGA HDR file size: 12
Image page count: 1
Verifying programmed header .....
Verifying programmed header .....
Programmed header is verified successfully.

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Power Cycle is needed to complete System firmware upgrade.
It takes ~7 mins to upgrade firmwre after power cycle starts.

DO NOT DISRUPT AFTER POWER C
Initializing Hardware......

Initializing Hardware......

System Bootstrap, Version 17.10.1r, RELEASE SOFTWARE (P)
Compiled Tue Aug 2 13:02:51 2022 by rel
```

Step 4. Confirm if the CPLD is upgraded on standby:

<#root>

```
F241.24.02-9400-1#show platform
Chassis type: C9404R

Switch 1

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
1         C9400-LC-24XS       ok                    00:29:38
1/0       C9400-LC-24XS       ok                    00:25:34
2         C9400-SUP-1XL       ok                    00:29:38
2/0       C9400-SUP-1XL       ok                    00:25:31
R0                            ok, active            00:29:38
P1        C9400-PWR-3200AC    ok                    00:29:16
P9        C9404-FAN           ok                    00:29:14

Slot      CPLD Version        Firmware Version
--------- ------------------- ----------------------------------------
1         20062105            17.10.1r
2         20062105            17.10.1r
```

```
Switch 2

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
1         C9400-LC-24XS       ok                    00:29:35
1/0       C9400-LC-24XS       ok                    00:00:11
2         C9400-SUP-1XL       ok                    00:29:35
2/0       C9400-SUP-1XL       ok                    00:00:10
R0                            ok, standby           00:29:35
P1        C9400-PWR-3200AC    ok                    00:29:13
P9        C9404-FAN           ok                    00:29:11

Slot      CPLD Version        Firmware Version
--------- ------------------- ------------------------------------
1         20062105            17.10.1r                          >>>>>>>>>>CPLD got upgraded


2         20062105            17.10.1r                          >>>>>>>>>>CPLD got upgraded
```

Step 5. In the case, if the CPLD version of the Active Switch needs to be upgraded, you must pursue these steps:

<#root>

1. Do a switchover

9400-1#

redundancy force-switchover

>>>>>>>>>>Initially Switch 1 is active and Switch 2 is standby.
After switchover it is vise-ve

2. Upgrade the CPLD version of previous active [now standby] with the command:

9400-1#

upgrade hw-programmable cpld filename bootflash: switch 1 R0

3. Reload the the standby

9400-1#

redundancy reload peer