Troubleshoot Catalyst 9200/9300 Reloads Due to Stack Issues

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Introduction

This document describes how to troubleshoot unexpected reloads due to stack issues on Catalyst 9000 switches.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics.

- Catalyst 9000 Switches
- Catalyst 9300 Stackwise System Architecture
- Catalyst 9200 Stackwise System Architecture

Components Used

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

- Catalyst 9300 and 9300L platforms
- Cisco IOS® XE Release 17.2.1 and Cisco IOS XE Release 17.3.5

This document can also be used with these hardware and software versions:

- Catalyst 9200 and 9200L switches
- Cisco IOS XE Release 17.1.1 and later

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

Background Information

The stack reset reasons are described in this table.

Reset Reason	Description
Stack merge	This is observed when at least two stack members claim to be the active switch of the stack. This can be seen when the stack ring is broken or when Stack Discovery Protocol (SDP) messages are lost due to bad stack cables.
Stack merge due to incompatibility	Same as stack merge. Seen more frequently in half-ring stack configurations.
Lost both active and standby	When the active switch is lost and if for any reason the standby switch is unable to assume the active role, then all other stack members are reloaded and use this reset reason. This can also be seen when stacks are configured in half-ring configurations.
Stack cable authentication failure	Usually seen due to a faulty stack cable or stack port. It could also be seen due to a software issue.
Stack adapter authentication failure	Usually seen due to a faulty stack cable, stack adapter, or stack port. It could also be seen due to a software issue.

Troubleshoot

Validate Stack Reload Reason

Validate the last reload reason for all members of the stack.

- Switch number - switch number assigned to a stack member, every stack member has a unique number assigned.

```
show version
show switch
show logging onboard switch <switch number> uptime detail
```

In the **show version** command output, you can identify the different reset reasons for each of the stack members.

```
<#root>

switch#

show version

<omitted output>

Last reload reason: stack merge <-- Switch 1 Reason


<omitted output>
Switch Ports Model              SW Version        SW Image              Mode
------ ----- -----              ----------        ----------            ----
*    1 53    C9300-48P          17.3.5            CAT9K_IOSXE           INSTALL
     2 53    C9300-48P          17.3.5            CAT9K_IOSXE           INSTALL
     3 53    C9300-48P          17.3.5            CAT9K_IOSXE           INSTALL

Switch 02
---------
Switch uptime                     : 13 hours, 47 minutes

Base Ethernet MAC Address         : aa:aa:aa:aa:aa:aa
Motherboard Assembly Number       : 11-11111-11
Motherboard Serial Number         : AAAAAAAAAAA
Model Revision Number             : F0
Motherboard Revision Number       : C0
Model Number                      : C9300-48P
System Serial Number              : AAAAAAAAAAB

Last reload reason                : stack merge due to incompatiblity <-- Switch 2 Reason

Switch 03
---------
Switch uptime                     : 50 minutes

Base Ethernet MAC Address         : bb:bb:bb:bb:bb:bb
Motherboard Assembly Number       : 22-22222-22
Motherboard Serial Number         : BBBBBBBBBBA
Model Revision Number             : E0
Motherboard Revision Number       : C0
Model Number                      : C9300L-48P
System Serial Number              : BBBBBBBBBBB

Last reload reason                : lost both active and standby <-- Switch 3 Reason
```

The **show switch** command output displays the current role of the stack members.

```
<#root>

switch#

show switch

Switch/Stack Mac Address : xxxx.xxxx.xxxx - Local Mac Address
Mac persistency wait time: Indefinite
                                             H/W   Current
Switch#   Role    Mac Address     Priority Version  State
------------------------------------------------------------------------------
*1       Active   xxxx.xxxx.xxxx     15     V01     Ready
 2       Standby  aaaa.aaaa.aaaa     14     V01     Ready
```

```
 3       Member   bbbb.bbbb.bbbb     13     V01     Ready
```

The last reload reason record can be seen with the next command.

- Current reset timestamp - Shows the time when the switch booted up. However, it does not show the time when the switch went down.
<#root>

```
switch#

show logging onboard switch 1 uptime detail

--------------------------------------------------------------------------------
UPTIME SUMMARY INFORMATION
--------------------------------------------------------------------------------
First customer power on : 11/15/2019 22:46:33
Total uptime            :  0  years  0  weeks  6  days  20 hours  15 minutes
Total downtime          :  0  years  46 weeks  5  days  23 hours  42 minutes
Number of resets        : 10
Number of slot changes  : 0

Current reset reason    : stack merge <--
Current reset timestamp : 10/15/2020 05:44:01 <--

Current slot            : 1
Chassis type            : 95
Current uptime          :  0  years  0  weeks  0  days  13 hours  0  minutes
--------------------------------------------------------------------------------

--------------------------------------------------------------------------------
UPTIME CONTINUOUS INFORMATION
--------------------------------------------------------------------------------
Time Stamp          | Reset                       | Uptime
MM/DD/YYYY HH:MM:SS | Reason                      | years weeks days hours minutes
--------------------------------------------------------------------------------
<omitted output>

10/15/2020 05:44:01   stack merge                    0     0     0     1     0 <--

--------------------------------------------------------------------------------


switch#

show logging onboard switch 2 uptime detail

--------------------------------------------------------------------------------
UPTIME SUMMARY INFORMATION
--------------------------------------------------------------------------------
First customer power on : 11/21/2019 17:46:08
Total uptime            :  0  years  0  weeks  6  days  23 hours  21 minutes
Total downtime          :  0  years  46 weeks  0  days  1  hours  36 minutes
Number of resets        : 14
Number of slot changes  : 1

Current reset reason    : stack merge due to incompatiblity <--

Current reset timestamp : 10/15/2020 05:44:03
Current slot            : 2
Chassis type            : 95
Current uptime          :  0  years  0  weeks  0  days  13 hours  0  minutes
--------------------------------------------------------------------------------
```

```
------------------------------------------------------------------------------
UPTIME CONTINUOUS INFORMATION
------------------------------------------------------------------------------
Time Stamp          | Reset                        | Uptime
MM/DD/YYYY HH:MM:SS | Reason                       | years weeks days hours minutes
------------------------------------------------------------------------------
<omitted output>

10/15/2020 05:44:03   stack merge due to incompatiblity  0     0     0     1     0 <--

------------------------------------------------------------------------------


switch#

show logging onboard switch 3 uptime detail

------------------------------------------------------------------------------
UPTIME SUMMARY INFORMATION
------------------------------------------------------------------------------
First customer power on : 08/13/2019 23:46:07
Total uptime            :  0  years  38 weeks  5  days  11 hours  54 minutes
Total downtime          :  0  years  22 weeks  3  days  7  hours  45 minutes
Number of resets        : 37
Number of slot changes  : 3

Current reset reason    : lost both active and standby <--

Current reset timestamp : 10/15/2020 18:56:09
Current slot            : 3
Chassis type            : 95
Current uptime          :  0  years  0  weeks  0  days  0  hours  30 minutes
------------------------------------------------------------------------------

------------------------------------------------------------------------------
UPTIME CONTINUOUS INFORMATION
------------------------------------------------------------------------------
Time Stamp          | Reset                        | Uptime
MM/DD/YYYY HH:MM:SS | Reason                       | years weeks days hours minutes
------------------------------------------------------------------------------
<omitted output>

10/15/2020 18:56:09   lost both active and standby  0     0     0     0     35 <--

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

Note: The errors "stack cable authentication failure" and "stack adapter authentication failure" usually do not allow the affected switch to fully boot up. Therefore, no commands can be collected for further analysis. Check the corresponding section with the steps listed.

Check Stack Cable Hardware

Based on the hardware installation guide for Catalyst 9200 and 9300 switches, you must ensure the stack complies with the stack cable set up and ensure stack cables are properly set.

Confirm Stack Cable Setup

Stack cables must be be done in this manner:

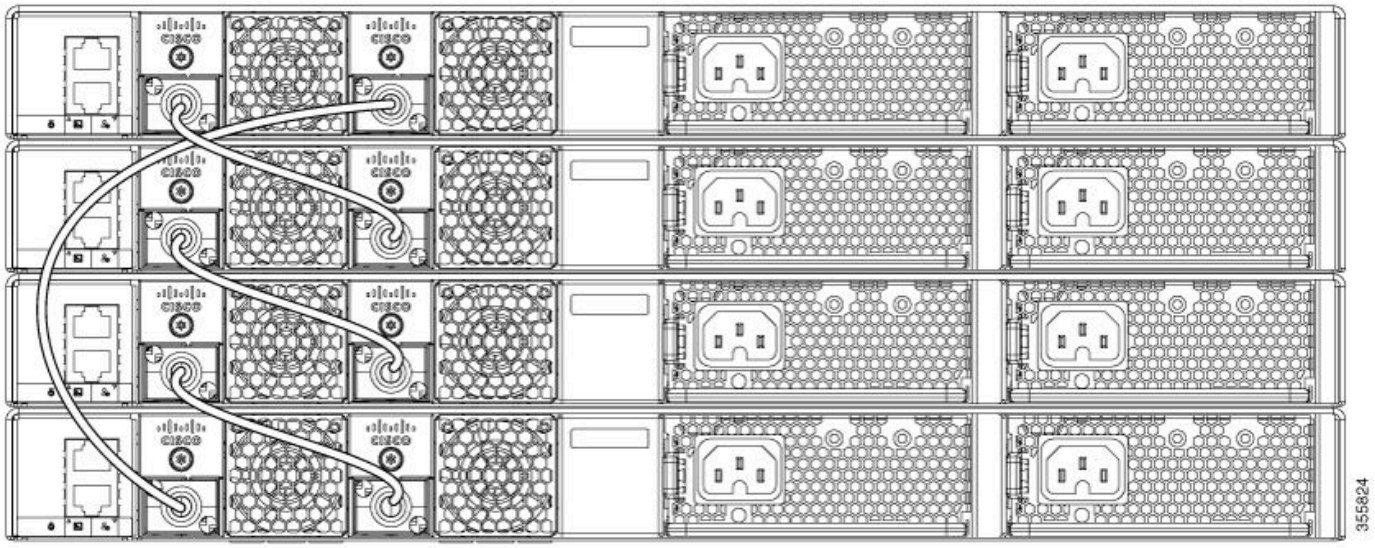
- Switch 1 stack port 1 connected to switch 2
- Switch 1 stack port 2 connected to switch N
- Switch 2 stack port 1 connected to switch 3
- Switch 2 stack port 2 connected to switch 1
- Switch 3 stack port 1 connected to switch 4
- Switch 3 stack port 2 connected to switch 2

...

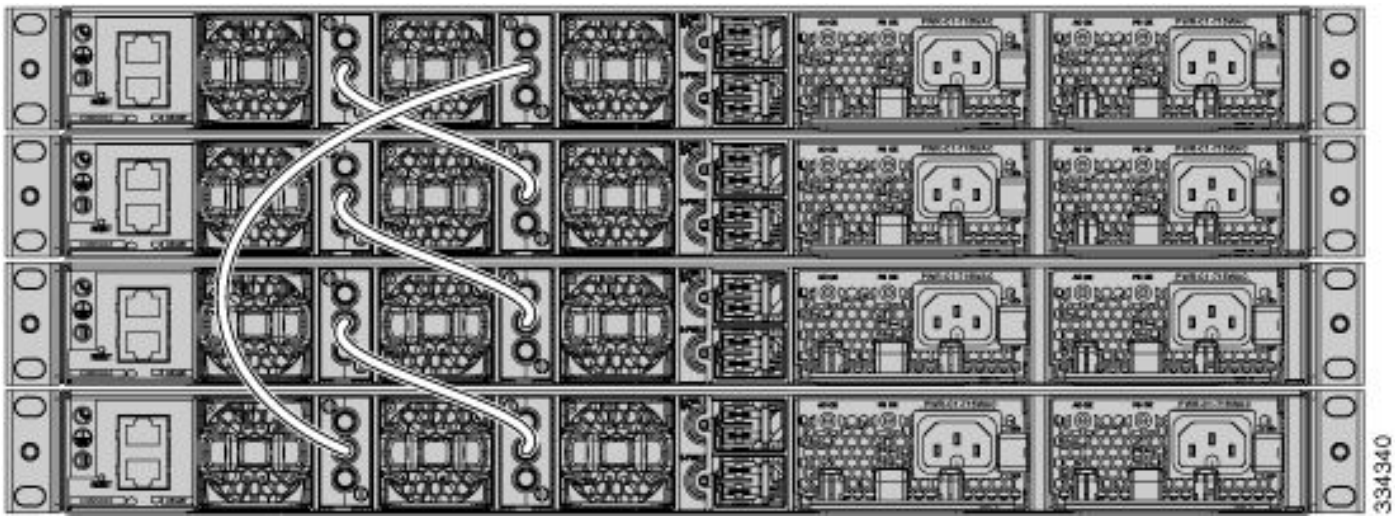
- Switch N stack port 1 connected to switch 1
- Switch N stack port 2 connected to switch N-1

This way the stack set up looks like these images.

Catalyst 9200L and 9200



Catalyst 9300



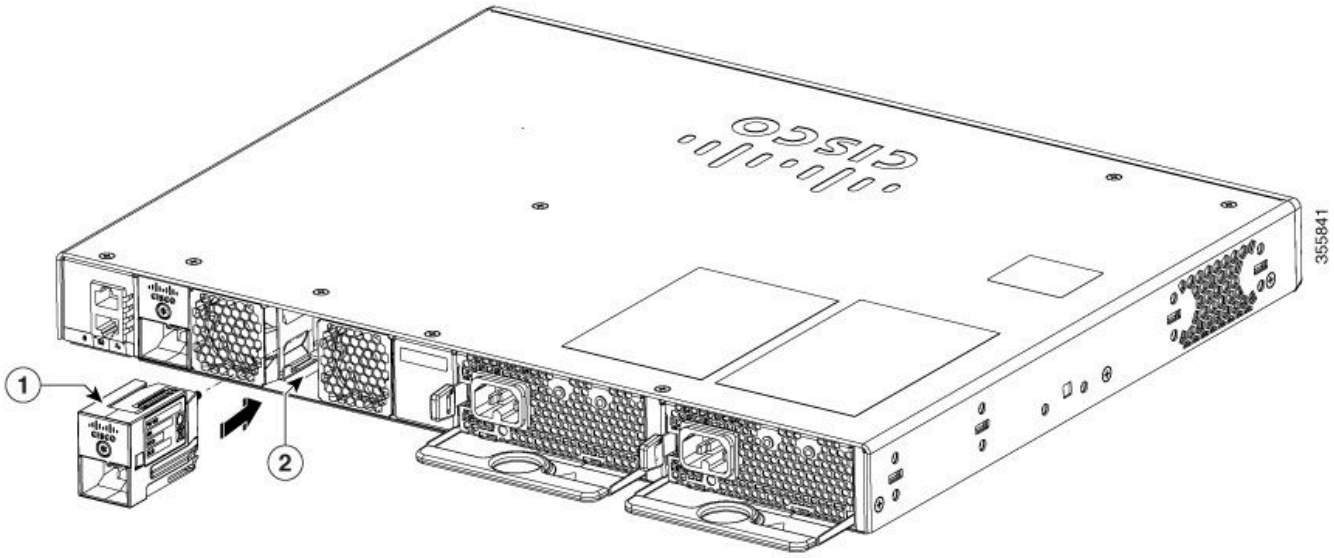
Install Stack Cables

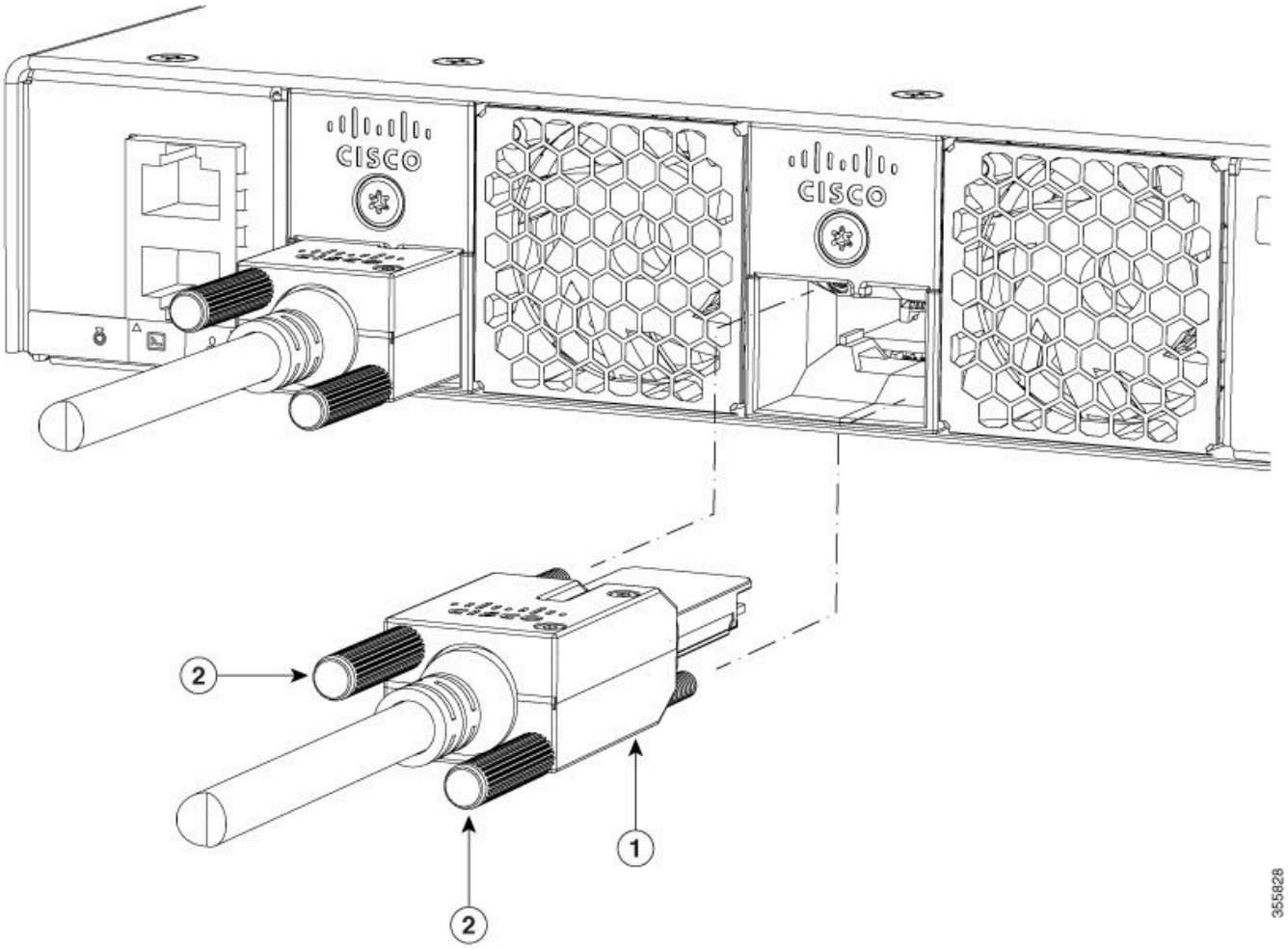
When you insert the stack adapter and/or the stack cable, use these instructions:

Catalyst 9200L and 9200

1. Ensure stack adapters are properly inserted. The Cisco logo must be on top.

2. Ensure the stack cable is firmly tightened by hand.

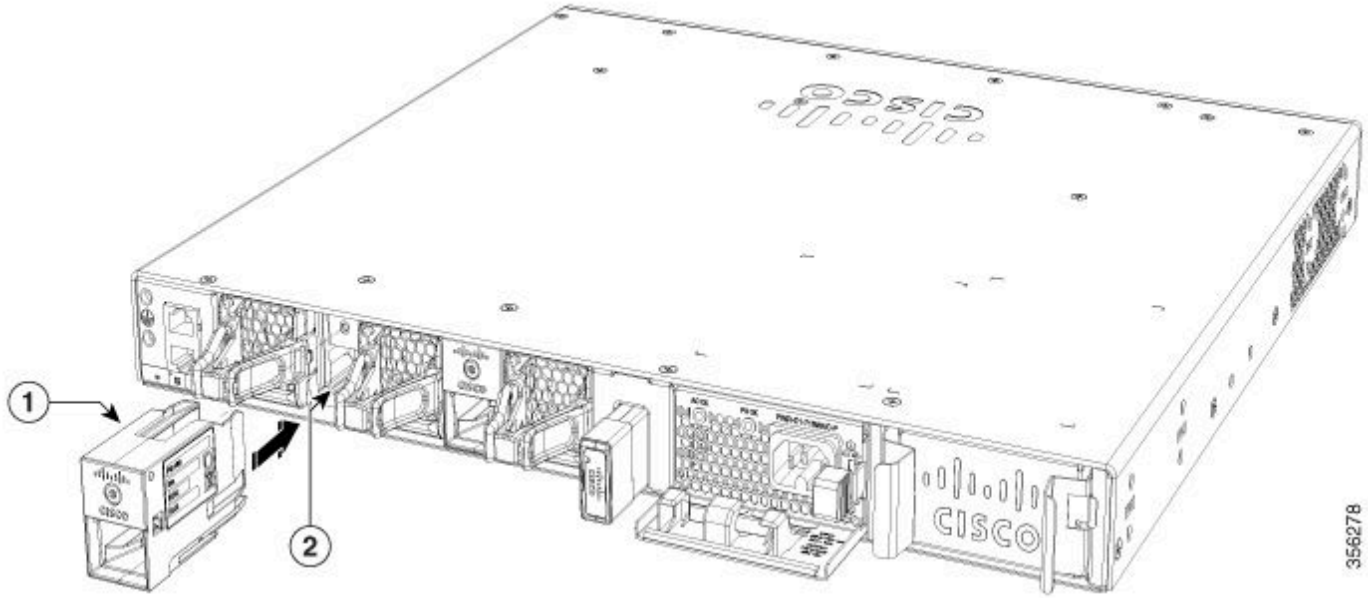


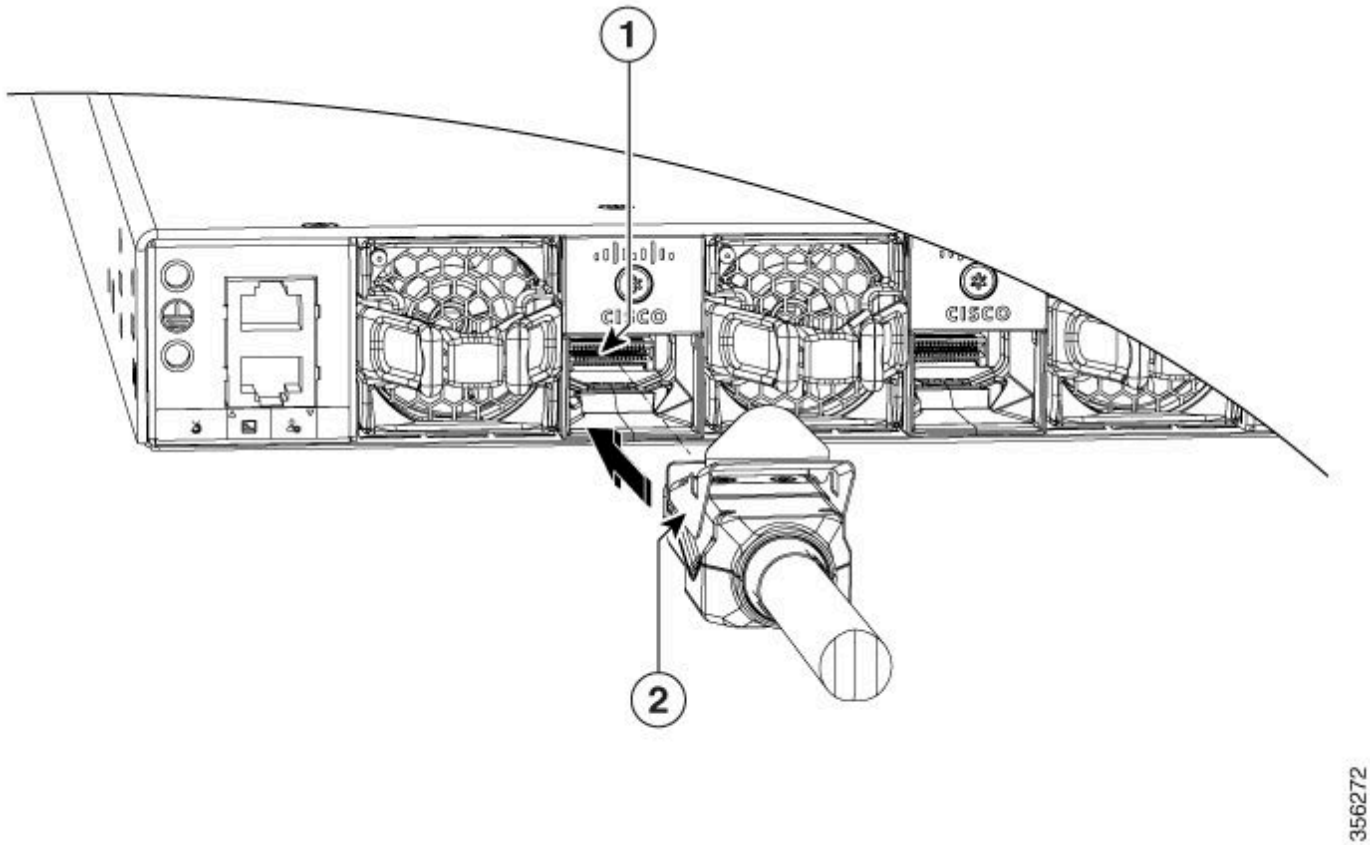


Catalyst 9300L

1. Ensure the stack adapters are properly inserted. The Cisco logo must be on top.

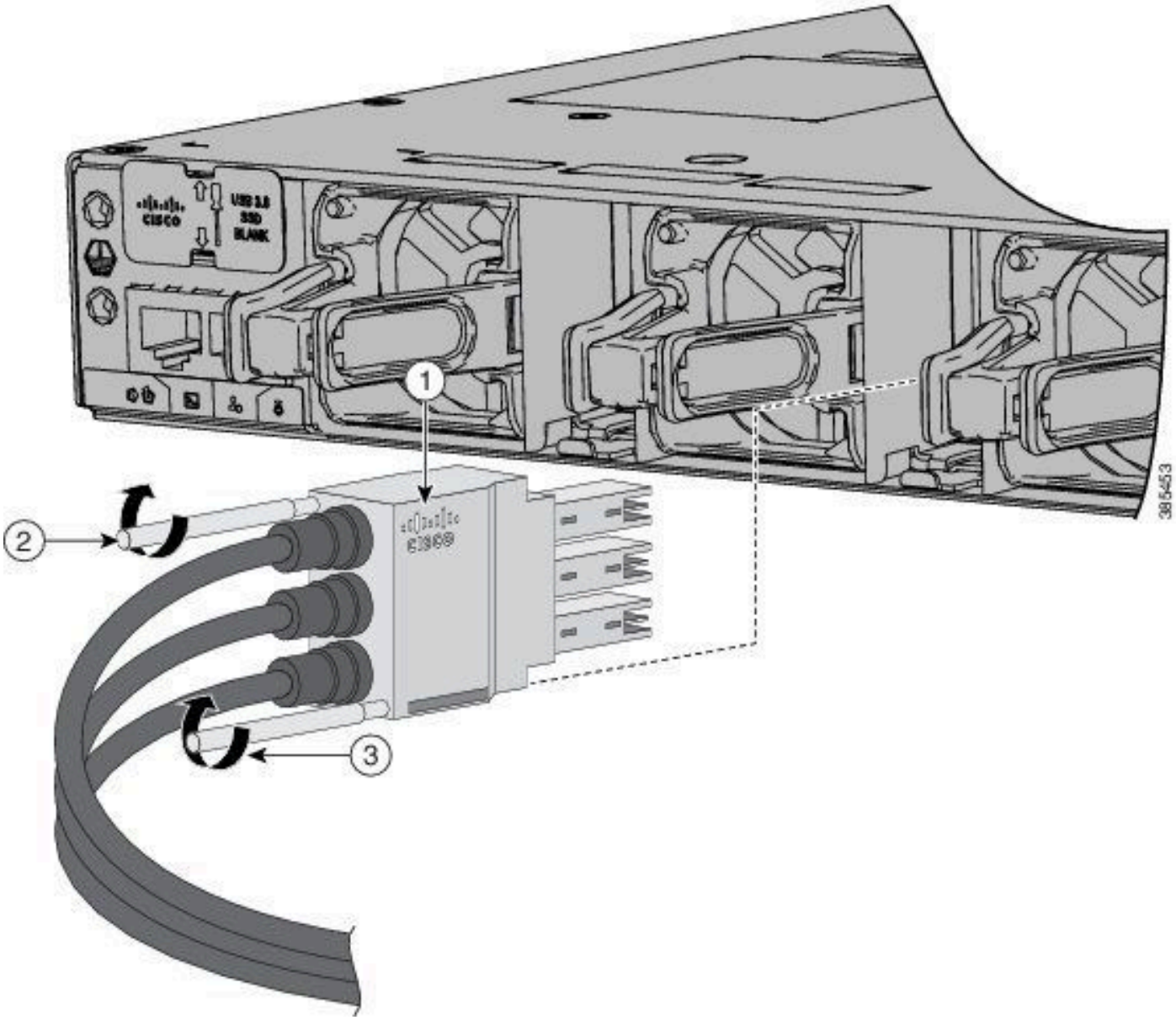
2. Ensure the stack cable is firmly tightened by hand.





Catalyst 9300

1. The Cisco logo must be on top.
2. Ensure the connector screws are firmly tightened by hand (not too loose, not too tight).



Check Stack Cable Health

In most cases, the unexpected reloads shown in this document were triggered due to bad stack cables, stack adapters, or stack ports. Regardless which software version you run, you can be susceptible to this if the stack parts were not installed properly.

Once you validated the Confirm Stack Cable Setup and Install Stack Cables sections, check the stack cable health with these commands:

<#root>

```
show switch neighbors
```

```
show switch stack-ring speed
```

```
show switch stack-ports summary
```

```
show switch stack-ports detail
```

In this example, there is a stack of three Catalyst 9300 switches. The **show switch neighbors** command output displays which switches are connected to each stack member:

```
<#root>

switch#

show switch neighbors

  Switch #    Port 1       Port 2
  --------    ------       ------
      1         2            3
      2         3            1
      3         1            2
```

When a stack cable is not present, wrongly inserted, or is faulty, None is shown instead of the stack member:

```
<#root>

switch#

show switch neighbors

  Switch #    Port 1       Port 2
  --------    ------       ------
      1         2

None


<--

      2         3            1
      3

None

 2

<--
```

The **show switch stack-ring speed** command provides you the stack ring status:

```
<#root>

switch#

show switch stack-ring speed
```

```
Stack Ring Speed : 480G        <--

Stack Ring Configuration: Full <--

Stack Ring Protocol : StackWise
```

If for any reason the stack ring is broken, the output looks like this:

```
<#root>

switch#

show switch stack-ring speed


Stack Ring Speed : 240G        <--

Stack Ring Configuration: Half <--

Stack Ring Protocol : StackWise
```

Warning: It is never expected to see Half status in a healthy Stack Ring Configuration. Though the stack works, it loses half of the bandwidth as well as redundancy.

A healthy **show switch stack-ports summary** command output looks like this.

Note: Switch 1 stack port 1 shows two link changes. This is normal.

```
<#root>

switch#

show switch stack-ports summary

Sw#/Port#  Port Status  Neighbor  Cable Length   Link OK   Link Active   Sync OK   #Changes to LinkOK  I
-----------------------------------------------------------------------------------------------------
1/1        OK           2         50cm           Yes       Yes           Yes       2                   I
1/2        OK           3         100cm          Yes       Yes           Yes       1                   I
2/1        OK           3         50cm           Yes       Yes           Yes       1                   I
2/2        OK           1         50cm           Yes       Yes           Yes       1                   I
3/1        OK           1         100cm          Yes       Yes           Yes       1                   I
3/2        OK           2         50cm           Yes       Yes           Yes       1                   I
```

If the output shows many flaps on certain ports, it could be a signal of stack instability. This condition could trigger a stack merge. The **Unknown** status can be seen if the stack is not properly cabled.

```
<#root>

switch#

show switch stack-ports summary


Sw#/Port#  Port Status  Neighbor  Cable Length   Link OK   Link Active   Sync OK

#Changes to LinkOK

  In Loopback
-----------------------------------------------------------------------------------------------------------
1/1        OK           2         50cm           Yes       Yes           Yes

16

                  No


<-- 16 flaps on switch 1 stack port 1 facing switch 2


1/2        OK           3         100cm          Yes       Yes           Yes       1                    
2/1        OK           3         50cm           Yes       Yes           Yes       1                    
2/2        OK           1

Unknown

        Yes       Yes           Yes

16

                  No


<-- Cable length 'unknown', 16 flaps on switch 2 stack port 2 facing switch 1

3/1        OK           1         100cm          Yes       Yes           Yes       1                    
3/2        OK           2         50cm           Yes       Yes           Yes       1                    
```

When excessive link changes are seen, the next step is to check the **show switch stack-ports detail** command and focus on the **CRC Errors** counters. CRCs that increment on an interface means the packets received on that port are malformed. These conditions can apply:

- Corrupt packets sent from the remote side due to a faulty port.
- Either the stack adapter (if applicable) or the stack cable is not properly set.
- Either the stack adapter or the stack cable is faulty.

```
<#root>

switch#

show switch stack-ports detail

1 is OK Loopback No
Cable Length 100cm    Neighbor 2
Link Ok Yes Sync Ok Yes Link Active Yes
```

```
Changes to LinkOK 16
 Five minute input rate  1110 bytes/sec
 Five minute output rate 47 bytes/sec
     24798951 bytes input
     737941 bytes output


CRC Errors
            Data CRC 459731 <-- CRCs
        Ringword CRC 35156  <-- CRCs
        InvRingWord  54951  <-- CRCs
         PcsCodeWord 35481  <-- CRCs

1/2 is OK Loopback No
Cable Length 100cm    Neighbor 3
Link Ok Yes Sync Ok Yes Link Active Yes
Changes to LinkOK 1
 Five minute input rate  164 bytes/sec
 Five minute output rate 67 bytes/sec
     0 bytes input
     0 bytes output
 CRC Errors
            Data CRC 0
        Ringword CRC 0
        InvRingWord  0
         PcsCodeWord 0
2/1 is OK Loopback No
Cable Length 50cm    Neighbor 3
Link Ok Yes Sync Ok Yes Link Active Yes
Changes to LinkOK 0
 Five minute input rate  0 bytes/sec
 Five minute output rate 0 bytes/sec
     0 bytes input
     0 bytes output
 CRC Errors
            Data CRC 0
        Ringword CRC 0
        InvRingWord  0
         PcsCodeWord 0
2/2 is OK Loopback No
Cable Length 50cm    Neighbor 1
Link Ok Yes Sync Ok Yes Link Active Yes
Changes to LinkOK 16
 Five minute input rate  30 bytes/sec
 Five minute output rate 1093 bytes/sec
     480028 bytes input
     0 bytes output

 CRC Errors
            Data CRC 0 <-- No CRCs
        Ringword CRC 0 <-- No CRCs
        InvRingWord  0 <-- No CRCs
         PcsCodeWord 0 <-- No CRCs

3/1 is OK Loopback No
Cable Length 100cm    Neighbor 1
Link Ok Yes Sync Ok Yes Link Active Yes
Changes to LinkOK 1
 Five minute input rate  0 bytes/sec
 Five minute output rate 0 bytes/sec
     81387545 bytes input
     29294666 bytes output
 CRC Errors
```

```
            Data CRC 0
          Ringword CRC 0
          InvRingWord  0
           PcsCodeWord 0
3/2 is OK Loopback No
Cable Length 100cm    Neighbor 2
Link Ok Yes Sync Ok Yes Link Active Yes
Changes to LinkOK 1
 Five minute input rate  1030 bytes/sec
 Five minute output rate 0 bytes/sec
     480028 bytes input
     0 bytes output
 CRC Errors
            Data CRC 0
          Ringword CRC 0
          InvRingWord  0
           PcsCodeWord 0
```

Note: The **show switch stack-ports detail** command is available in the Cisco IOS XE Release17.3.x train and later. In order to check the CRC Errors counters on earlier releases, use the legacy commands.

Legacy Commands

Commands that end in 0 are the CRC counters for stack port 1, commands that end in 1 are the CRC counters for stack port 2. These commands must be entered for all stack members.

```
show platform hardware fed switch <switch number> fwd-asic register read register-name SifRacDataCrcErr
show platform hardware fed switch <switch number> fwd-asic register read register-name SifRacRwCrcError
show platform hardware fed switch <switch number> fwd-asic register read register-name SifRacInvalidRin
show platform hardware fed switch <switch number> fwd-asic register read register-name SifRacPcsCodeWor

show platform hardware fed switch <switch number> fwd-asic register read register-name SifRacDataCrcErr
show platform hardware fed switch <switch number> fwd-asic register read register-name SifRacRwCrcError
show platform hardware fed switch <switch number> fwd-asic register read register-name SifRacInvalidRin
show platform hardware fed switch <switch number> fwd-asic register read register-name SifRacPcsCodeWor
```

Note: The #Changes to LinkOK counter in the **show switch stack-ports summary** command output and the CRC counters in the **show switch stack-ports detail** command output must be checked at least two times to validate if there is an increment on any of them. Static counters validate a stable stack link, whereas, an increment in any of these counters validates stack link instability.

Stack Syslogs

These logs are seen when stack issues are present.

Stack Port Flaps

```
Aug 9 21:54:22.911: %STACKMGR-6-STACK_LINK_CHANGE: Switch 1 R0/0: stack_mgr: Stack port 1 on Switch 1 i
Aug 9 21:54:23.011: %STACKMGR-6-STACK_LINK_CHANGE: Switch 1 R0/0: stack_mgr: Stack port 1 on Switch 1 i
```

```
Aug 9 21:54:35.096: %STACKMGR-6-STACK_LINK_CHANGE: Switch 1 R0/0: stack_mgr: Stack port 1 on Switch 1 i
Aug 9 21:54:35.197: %STACKMGR-6-STACK_LINK_CHANGE: Switch 1 R0/0: stack_mgr: Stack port 1 on Switch 1 i
Aug 9 21:54:40.334: %STACKMGR-6-STACK_LINK_CHANGE: Switch 2 R0/0: stack_mgr: Stack port 2 on Switch 2 i
Aug 9 21:54:40.434: %STACKMGR-6-STACK_LINK_CHANGE: Switch 2 R0/0: stack_mgr: Stack port 2 on Switch 2 i
```

Stack port flaps in half-ring scenarios cause the stack to split and switch removal. In this scenario, there is a stack of six switches in a half ring. The stack link between switch 1 and 6 is not present and the stack link between switches 5 and 6 constantly flaps. This causes switch member 6 to be removed from the stack.

<#root>

```
Apr 9 19:13:25.665: %STACKMGR-6-STACK_LINK_CHANGE: Switch 5 R0/0: stack_mgr: Stack port 1 on Switch 5 i

Apr 9 19:13:42.513: %STACKMGR-4-SWITCH_REMOVED: Switch 2 R0/0: stack_mgr: Switch 6 has been removed from


Apr 9 19:13:42.588: %STACKMGR-4-SWITCH_REMOVED: Switch

1

 R0/0: stack_mgr: Switch 6 has been removed from the stack.
Apr 9 19:13:42.827: %STACKMGR-4-SWITCH_REMOVED: Switch

5

 R0/0: stack_mgr: Switch 6 has been removed from the stack.
Apr 9 19:13:42.999: %STACKMGR-4-SWITCH_REMOVED: Switch

4

 R0/0: stack_mgr: Switch 6 has been removed from the stack.
Apr 9 19:13:43.031: %STACKMGR-4-SWITCH_REMOVED: Switch

3

 R0/0: stack_mgr: Switch 6 has been removed from the stack.
Apr 9 19:13:47.666: %STACKMGR-6-STACK_LINK_CHANGE: Switch 5 R0/0: stack_mgr: Stack port 1 on Switch 5 i
Apr 9 19:25:57.715: %STACKMGR-6-STACK_LINK_CHANGE: Switch 5 R0/0: stack_mgr: Stack port 1 on Switch 5 i
Apr 9 19:26:15.817: %STACKMGR-4-SWITCH_REMOVED: Switch 2 R0/0: stack_mgr: Switch 6 has been removed fro
Apr 9 19:26:15.946: %STACKMGR-4-SWITCH_REMOVED: Switch 1 R0/0: stack_mgr: Switch 6 has been removed fro
Apr 9 19:26:16.290: %STACKMGR-4-SWITCH_REMOVED: Switch 5 R0/0: stack_mgr: Switch 6 has been removed fro
Apr 9 19:26:16.450: %STACKMGR-4-SWITCH_REMOVED: Switch 3 R0/0: stack_mgr: Switch 6 has been removed fro
Apr 9 19:26:16.457: %STACKMGR-4-SWITCH_REMOVED: Switch 4 R0/0: stack_mgr: Switch 6 has been removed fro
Apr 9 19:26:21.717: %STACKMGR-6-STACK_LINK_CHANGE: Switch 5 R0/0: stack_mgr: Stack port 1 on Switch 5 i
Apr 9 19:38:31.766: %STACKMGR-6-STACK_LINK_CHANGE: Switch 5 R0/0: stack_mgr: Stack port 1 on Switch 5 i
```

High Hardware Interrupts

High hardware interrupts are seen due to too many CRC errors seen in the stack port.

<#root>

```
Jun 9 09:28:06.723: %SIF_MGR-1-FAULTY_CABLE: Switch 1 R0/0: sif_mgr: High hardware interrupt seen on sw

Jun 9 09:29:06.724: %SIF_MGR-1-FAULTY_CABLE: Switch 1 R0/0: sif_mgr: High hardware interrupt seen on swi


Jun 9 09:30:06.725: %SIF_MGR-1-FAULTY_CABLE: Switch 1 R0/0: sif_mgr: High hardware interrupt seen on sw
```

```
Jun 9 09:31:06.726: %SIF_MGR-1-FAULTY_CABLE: Switch 1 R0/0: sif_mgr: High hardware interrupt seen on sw
Jun 9 09:33:06.727: %SIF_MGR-1-FAULTY_CABLE: Switch 1 R0/0: sif_mgr: High hardware interrupt seen on sw
Jun 9 09:34:06.728: %SIF_MGR-1-FAULTY_CABLE: Switch 1 R0/0: sif_mgr: High hardware interrupt seen on sw
```

Stack Authentication Issues

This kind of issue can prevent switch boot up, therefore **show** commands are not an option.

Stack cable authentication failed is shown when the switch gets reloaded due to this issue.

<#root>

```
Waiting for 120 seconds for other switches to boot
Switch is in STRAGGLER mode, waiting for active Switch to boot
Active Switch has booted up, starting discovery phase
###################
```

***** Stack cable authentication failed for cable inserted on stack port 2 on switch 1 *** <--**

```
Reloading chassis because cable auth failed on stack_port 0#
Chassis 1 reloading, reason - stack cable authentication failed
reload fp action requested
rp processes exit with reload switch code
Jul  5 10:43:33.520: %PMAN-3-PROCESS_NOTIFICATION: R0/0: pvp:
 System report /crashinfo/system-report_local_20201015-165033-Universal.tar.gz (size: 176 KB) generated
```

Enter the **show version** command after the reload.

<#root>

```
switch#
```

show version

```
<omitted output>
```

Last reload reason: Reload Command <-- switch 1

```
<omitted output>
Switch 02
---------
Switch uptime                     : 60 minutes

Base Ethernet MAC Address         : aa:aa:aa:aa:aa:aa
Motherboard Assembly Number       : 11-11111-11
Motherboard Serial Number         : AAAAAAAAAAA
Model Revision Number             : F0
Motherboard Revision Number       : C0
Model Number                      : C9300-48P
System Serial Number              : AAAAAAAAAAB
Last reload reason                : Reload slot command

Switch 03
---------
Switch uptime                     : 56 minutes
```

```
Base Ethernet MAC Address          : bb:bb:bb:bb:bb:bb
Motherboard Assembly Number        : 22-22222-22
Motherboard Serial Number          : BBBBBBBBBBA
Model Revision Number              : E0
Motherboard Revision Number        : C0
Model Number                       : C9300L-48P
System Serial Number               : BBBBBBBBBBB
```

Last reload reason   : stack cable authentication failure <--

<#root>

switch#

show logging onboard switch 3 uptime detail

```
-------------------------------------------------------------------------------
UPTIME SUMMARY INFORMATION
-------------------------------------------------------------------------------
First customer power on : 08/13/2019 23:46:07
Total uptime            :  0  years  38 weeks  5  days  11 hours  54 minutes
Total downtime          :  0  years  22 weeks  3  days  7  hours  45 minutes
Number of resets        : 37
Number of slot changes  : 3
```

Current reset reason   : stack cable authentication failur <--

```
Current reset timestamp : 10/15/2020 18:56:09
Current slot            : 3
Chassis type            : 95
Current uptime          :  0  years  0  weeks  0  days  0  hours  56 minutes
-------------------------------------------------------------------------------

-------------------------------------------------------------------------------
UPTIME CONTINUOUS INFORMATION
-------------------------------------------------------------------------------
Time Stamp          | Reset                       | Uptime
MM/DD/YYYY HH:MM:SS | Reason                      | years weeks days hours minutes
-------------------------------------------------------------------------------
```

10/15/2020 18:56:09   stack cable authentication failur 0   0   0   0   35 <--

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

Stack adapter authentication failed looks like this when the switch gets reloaded due to this software defect.

<#root>

```
Both links down, not waiting for other switches
Switch number is X
```

***** Stack adapter authentication failed on stack port <1|2> on switch X *** <--**

```
Stack Adapter Auth Fail : SIF_SERDES_CABLE_WESTBOUND
```

It also can look like this.

<#root>

```
Both links down, not waiting for other switches Switch number is X
```

```
*** Stack adapter authentication failed on stack port <1|2> on switch X *** <--
```

```
Stack Adapter Auth Fail : SIF_SERDES_CABLE_EASTBOUND
```

Note: If stack adapter/cable authentication fail is found on the switch, the respective switch is expected to reload by itself, not the whole stack.

In order to isolate the issue either to the stack cable, stack adapter, or switch itself with the next combinations of tests, complete these steps:

1. Stack Cable - Replace with a good stack cable.
    1. If the issue is not replicated, then it could be a failed stack cable. The stack cable could need to be replaced.
    2. If the problem is replicated, go to step 2.
2. Stack Adapter (if applicable) - Reseat the stack adapter at least two times in order to see if it fixes the problem. This is just to rule out any mechanical issues with the insertion of the adapter.
    1. If the reseat did not solve the problem, replace with a good stack adapter.
    2. If the problem is not replicated, then it could be a failed stack adapter. The stack adapter could need to be replaced.
    3. If the problem is duplicated/replicated, go to step 3.
3. Switch - At this point, isolation has not happened to the stack cable or the stack adapter. The Cisco Technical Assistance Center (TAC) needs to be engaged at this point in order to validate the switch issue, either hardware (stack ports) or software.

Note: There is a well known bug for Last reload reason:stack cable authentication failure. Validate that you do not hit this bug in case it happens only one time and you have a Catalyst 9300L switch. Cisco bug ID CSCvu25094 - 9300L crash due - stack cable authentication failure - reload reason only once.

Related information

- Cisco Catalyst 9200 Series Switches Hardware Installation Guide
- Cisco Catalyst 9300 Series Switches Hardware Installation Guide
- Cisco StackWise Architecture on Catalyst 9200 Series Switches White Paper
- Catalyst 9300 Stackwise System Architecture White Paper
- Stacking and High Availability Configuration Guide, Cisco IOS XE Amsterdam 17.3.x (Catalyst 9200 Switches)
- Stacking and High Availability Configuration Guide, Cisco IOS XE Amsterdam 17.3.x (Catalyst 9300 Switches)
- Cisco bug ID CSCvu25094 - 9300L crash due - stack cable authentication failure - reload reason only once
- Cisco bug ID CSCvz07678 - Cat9300 Stack port remains down after standby power cord OIR
- Technical Support & Documentation - Cisco Systems