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TM

**Advanced Services**



NOS ASR9K

CookBook

1.0

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# Introduction

## Preface

The purpose of this document is to provide the necessary steps to follow before & after the IOS-XR upgrade from current versions to 6.6.3 in all ASR9901 routers in the network.

It is assumed that the Implementation Engineer has experience of Installation and Commissioning of the networking/security products covered by this document, as well as the procedures necessary to upgrade and troubleshoot to a basic level.

## 

# Before Upgrade

## Steps to be followed before any MW

#### Open TAC Case

Write an email to Carolina([canunes@cisco.com](mailto:canunes@cisco.com)) a day in advance of the MW, in the below format, seeking a proactive TAC case to be opened for the devices which undergo an upgrade in coming MW. MW calendar & inventory can be found in the below links

<https://ciscoshare.cisco.com/alfext/ext/download/workspace/SpacesStore/ba41eb13-857c-46dc-ae9e-58d7c7da5514/Plan_Upgrade_V3_1.xlsm?a=true>

<http://netprofile-emea/netprofile/npIndex.do?cpyKey=69873>

<https://as-practice-05.cisco.com:8000/en-GB/app/search/nos_communications_inventory_details>

Hi Carolina,

Please open a proactive TAC case for the upgrade of the following devices (upgrade 6.6.3)?

Upgrade on the 3rd Feb from 1am to 7am (Lisbon time).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Region  (South/North) | Hostname | ASR-9001 | Chassis S/N | Syslocation |

#### Check Spare Inventory

Ana Costa – (anacost) (Asset Manager that is responsible for provisioning the spare hardware in the depots) should be emailed on a weekly basis seeking devices to be held on standby in case things go wrong.

#### Update CSPC & NCCM Support Team.

Make sure to update CSPC & NCCM support teams of MW schedule.

#### Validate access to VPN & Devices

Make sure to validate access to VPN & to devices that are planned for upgrade in a MW.

# Post Upgrade

## Steps to be followed after upgrade is completed

#### SMU & Package Validations

Check and make sure below SMU's & packages are available before & are activated post upgrade by issuing “admin show install summary”

Active Packages:

disk0:asr9k-9000v-nV-px-6.6.3

disk0:asr9k-doc-px-6.6.3

disk0:asr9k-fpd-px-6.6.3

disk0:asr9k-k9sec-px-6.6.3

disk0:asr9k-mcast-px-6.6.3

disk0:asr9k-mgbl-px-6.6.3

disk0:asr9k-mini-px-6.6.3

disk0:asr9k-mpls-px-6.6.3

disk0:asr9k-px-6.6.3.CSCvs13678-1.0.0

Inactive Packages:

disk0:asr9k-9000v-nV-px-6.6.2

disk0:asr9k-doc-px-6.6.2

disk0:asr9k-fpd-px-6.6.2

disk0:asr9k-k9sec-px-6.6.2

disk0:asr9k-mcast-px-6.6.2

disk0:asr9k-mgbl-px-6.6.2

disk0:asr9k-mini-px-6.6.2

disk0:asr9k-mpls-px-6.6.2

disk0:asr9k-px-6.6.2.CSCvp87602-1.0.0

disk0:asr9k-px-6.6.2.CSCvq59254-1.0.0

disk0:asr9k-px-6.6.2.CSCvq82324-1.0.0

Committed Packages:

disk0:asr9k-9000v-nV-px-6.6.3

disk0:asr9k-doc-px-6.6.3

disk0:asr9k-fpd-px-6.6.3

disk0:asr9k-k9sec-px-6.6.3

disk0:asr9k-mcast-px-6.6.3

disk0:asr9k-mgbl-px-6.6.3

disk0:asr9k-mini-px-6.6.3

disk0:asr9k-mpls-px-6.6.3

disk0:asr9k-px-6.6.3.CSCvs13678-1.0.0

#### Check Logs

Check the below logs post upgrade on all device & take necessary action to remediate, if there is a need.

show logging | include ERR

show logging | include FAIL

show logging | include ALARM

show logging | include WARN

#### Check Smart Report in its entirety

##### Validate traffic & errors on interfaces

sh int | i "bits/sec"

sh int | i "giants\|error\|rate\|line protocol"

sh int | i "error\|line protocol"

Show bundle be

##### To check satellite link status

admin show inventory chassis

show nv satellite status

show nv sat status brief

show nv sat protocol discovery brief

##### Use the below commands to make sure there are no QOS issues

sh policy-map interface <interface> input

sh policy-map interface <interface> output

**Step 4. Check if power-supplies need fpd upgrades**

We already have the upgrades of the PSs on the 64bit upgrades.

Most 32bit platforms don’t have this option to upgrade PSs. But we need to check and if necessary, upgrade them.

Check if FPD upgrade is needed:

**RP/0/RSP0/CPU0:IMO1ERIP001#admin show hw-module fpd location all**

Thu Feb 13 14:57:22.947 WET

===================================== ==========================================

Existing Field Programmable Devices

==========================================

HW Current SW Upg/

Location Card Type Version Type Subtype Inst Version Dng?

============ ======================== ======= ==== ======= ==== =========== ====

0/RSP0/CPU0 A9K-RSP880-LT-SE 1.0 lc cbc 0 50.02 No

lc rommon 0 17.36 No

lc fpga2 0 0.20 No

lc fsbl 0 1.113 No

lc lnxfw 0 1.113 No

lc fpga3 0 0.05 No

lc fpga4 0 0.04 No

lc fpga5 0 0.05 No

lc fpga6 0 1.11 No

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

0/FT0/SP ASR-9010-FAN-V2 1.0 ft cbc 7 29.12 No

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

0/FT1/SP ASR-9010-FAN-V2 1.0 ft cbc 8 29.12 No

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

0/BPID0/SP ASR-9010-BPID2 1.0 bp cbc 11 7.105 No

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

0/PS0/M0/SP PWR-2KW-DC-V2 1.0 pm fpga14 13 3.20^ No

pm fpga15 13 3.12^ No

pm fpga16 13 3.21^ No

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

0/PS0/M1/SP PWR-2KW-DC-V2 1.0 pm fpga14 14 3.20^ No

pm fpga15 14 3.12^ No

pm fpga16 14 3.21^ No

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

0/PS0/M2/SP PWR-2KW-DC-V2 1.0 pm fpga11 15 6.03^ No

pm fpga12 15 6.03^ No

pm fpga13 15 6.02^ No

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

0/PS1/M0/SP PWR-2KW-DC-V2 1.0 pm fpga14 17 3.20^ No

pm fpga15 17 3.12^ No

pm fpga16 17 3.21^ No

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

0/PS1/M1/SP PWR-2KW-DC-V2 1.0 pm fpga11 18 6.03^ No

pm fpga12 18 6.03^ No

pm fpga13 18 6.02^ No

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

0/0/CPU0 A9K-24x10GE-TR 1.0 lc cbc 0 19.112 No

lc fpga2 0 1.03 No

lc fpga3 0 1.01 No

lc fpga4 0 1.07 No

lc rommon 0 3.04 No

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

0/1/CPU0 A9K-MOD200-TR 1.0 lc cbc 0 39.09 No

lc rommon 0 8.49 No

lc fpga2 0 1.97 No

lc fsbl 0 1.103 No

lc lnxfw 0 1.103 No

lc fpga10 0 1.27 No

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

0/1/0 A9K-MPA-2X100GE 1.0 spa fpga9 0 1.04 No

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

0/2/CPU0 A9K-MOD80-SE 1.0 lc cbc 0 20.118 No

lc fpga2 0 1.04 No

lc fpga4 0 1.05 No

lc rommon 0 3.04 No

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

0/2/0 A9K-MPA-4X10GE 1.102 spa fpga6 0 1.06 No

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

0/2/1 A9K-MPA-4X10GE 1.102 spa fpga6 1 1.06 No

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

0/3/CPU0 A9K-MOD200-TR 1.0 lc cbc 0 39.09 No

lc rommon 0 8.49 No

lc fpga2 0 1.97 No

lc fsbl 0 1.103 No

lc lnxfw 0 1.103 No

lc fpga10 0 1.27 No

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

0/3/0 A9K-MPA-20X10GE 1.0 spa fpga5 0 1.16 No

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

0/4/CPU0 A9K-MOD200-SE 1.0 lc cbc 0 39.09 No

lc rommon 0 8.49 No

lc fpga2 0 1.97 No

lc fsbl 0 1.103 No

lc lnxfw 0 1.103 No

lc fpga10 0 1.27 No

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

0/4/0 A9K-MPA-20X10GE 1.0 spa fpga5 0 1.16 No

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

0/5/CPU0 A9K-MOD400-TR 1.0 lc cbc 0 39.09 No

lc rommon 0 8.49 No

lc fpga2 0 1.97 No

lc fsbl 0 1.103 No

lc lnxfw 0 1.103 No

lc fpga10 0 1.27 No

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

0/5/0 A9K-MPA-20X10GE 1.0 spa fpga5 0 1.16 No

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

0/5/1 A9K-MPA-20X10GE 1.0 spa fpga5 1 1.16 No

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

0/6/CPU0 A9K-24X10GE-1G-TR 1.0 lc cbc 0 47.03 No

lc rommon 0 18.29 No

lc fpga2 0 1.89 No

lc fsbl 0 1.112 No

lc lnxfw 0 1.112 No

lc fpga3 0 1.00 No

lc fpga4 0 1.11 No

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

0/7/CPU0 A9K-24X10GE-1G-TR 1.0 lc cbc 0 47.03 No

lc rommon 0 18.29 No

lc fpga2 0 1.89 No

lc fsbl 0 1.112 No

lc lnxfw 0 1.112 No

lc fpga3 0 1.00 No

lc fpga4 0 1.11 No

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

NOTES:

1. ^ One or more FPD will be intentionally skipped from upgrade using CLI with option "all" or during "Auto fpd".

It can be upgraded only using the "admin> upgrade hw-module fpd <fpd> location <loc>" CLI with exact location.

Check if power-supplies are redundant.

**RP/0/RSP0/CPU0:IMO1ERIP001#admin show environment power-supply**

Thu Feb 13 14:55:52.402 WET

R/S/I Modules Capacity Status

(W)

0/PS0/M0/\*

host PM 2100 Ok

0/PS0/M1/\*

host PM 2100 Ok

0/PS0/M2/\*

host PM 2100 Ok

0/PS1/M0/\*

host PM 2100 Ok

0/PS1/M1/\*

host PM 2100 Ok

R/S/I Power Supply Voltage Current

(W) (V) (A)

0/PS0/M0/\* 660.6 54.6 12.1

0/PS0/M1/\* 666.1 54.6 12.2

0/PS0/M2/\* 705.6 54.7 12.9

0/PS1/M0/\* 682.5 54.6 12.5

0/PS1/M1/\* 698.8 54.6 12.8

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

Total: 3413.6

R/S/I Power Draw Voltage Current

(W) (V) (A)

0/FT0/\* 151.7 54.2 2.8

0/FT1/\* 179.8 54.5 3.3

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

Total: 331.5

R/S/I Power Draw Voltage Current

(W) (V) (A)

0/RSP0/\* 228.0 54.3 4.2

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

Total: 228.0

R/S/I Power Draw Voltage Current

(W) (V) (A)

0/0/\* 718.0 54.4 13.2

0/1/\* 322.1 54.6 5.9

0/2/\* 333.0 54.6 6.1

0/3/\* 326.4 54.4 6.0

0/4/\* 332.4 54.5 6.1

0/5/\* 500.4 54.4 9.2

0/6/\* 228.4 54.4 4.2

0/7/\* 228.9 54.5 4.2

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

Total: 2989.6

\*\* Indicates worst case power draw (No power measuring sensor)

Chassis Power Draw for rack 0: 3413.6 (W)

Power Budget Summary for Rack 0

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

Power Shelves Type: DC

Power Budget Strict Mode: Disabled

Power Budget Enforcement: Enabled

Power Redundancy Mode: N + 1

Total Power Capacity: 10500W

Usable Power Capacity: 10500W

N+1 Supply Failure Protected Capacity: 8400W

Worst Case Power Used: 6280W

Slot Max Watts

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

0/0/CPU0 850

0/1/CPU0 480

0/2/CPU0 400

0/3/CPU0 480

0/RSP0/CPU0 295

0/RSP1/CPU0 295 (default)

0/4/CPU0 480

0/5/CPU0 700

0/6/CPU0 550

0/7/CPU0 550

0/FT0/SP 600

0/FT1/SP 600

Worst Case Power Available: 4220W

N+1 Supply Protected Capacity Available: 2120W

Upgrade power-supplies “one by one” or all (should be sequentially upgraded).

**RP/0/RSP0/CPU0:LAB-ASR9K-PE02#** **admin upgrade hw-module fpd all location pm-all**

# Troubleshooting Guide

## Interface with some packets before upgrade and zero packets after upgrade.



#### Check Interface

##### Check interface and see if there is even a small number of packets being received on the interface. If we have a couple thousand packets total and a small increment in the input/output rates, it’s a good sign. We should be OK. As seen below we have thousands of packets received on input and output. Check for drops.

**RP/0/RSP0/CPU0:VPI1ERIP003#sh int GigabitEthernet100/0/0/5.200**

Wed Nov 13 06:29:51.781 WET

GigabitEthernet100/0/0/5.200 is up, line protocol is up

  Interface state transitions: 1

  Hardware is VLAN sub-interface(s), address is 7872.5d78.24aa

  Description: UniaoFreguesias\_lavra C00137376 [C] S:NET OBS:[20160803] PC:MTS8007-1\_MTS8200-1\_NS\_1

  Internet address is 88.157.153.53/30

  MTU 1518 bytes, BW 1000000 Kbit (Max: 1000000 Kbit)

     reliability 255/255, txload 0/255, rxload 0/255

  Encapsulation 802.1Q Virtual LAN, VLAN Id 200,  loopback not set,

  Last link flapped 01:16:07

  ARP type ARPA, ARP timeout 04:00:00

  Last input 00:00:00, output 00:00:00

  Last clearing of "show interface" counters never

  5 minute input rate 0 bits/sec, 1 packets/sec

  5 minute output rate 0 bits/sec, 1 packets/sec

     3439 packets input, 558683 bytes, 0 total input drops

     0 drops for unrecognized upper-level protocol

     Received 2 broadcast packets, 0 multicast packets

     2885 packets output, 894800 bytes, 0 total output drops

     Output 3 broadcast packets, 0 multicast packets

#### Check Configuration

##### Check the configuration, if it is layer 3 try and ping the other end IP of the link.

RP/0/RSP0/CPU0:VPI1ERIP003#sh run int GigabitEthernet100/0/0/5.200

Wed Nov 13 09:15:58.696 WET

interface GigabitEthernet100/0/0/5.200

description UniaoFreguesias\_lavra C00137376 [C] S:NET OBS:[20160803] PC:MTS8007-1\_MTS8200-1\_NS\_1

service-policy input INGRESS-PARENT-NET-50M

service-policy output EGRESS-PARENT-NET-50M

ipv4 mtu 1500

ipv4 address 88.157.153.53 255.255.255.252

ipv4 verify unicast source reachable-via rx

encapsulation dot1q 200

!

Note: A sub-interface on vlan 200 with an IP from the 80s.x.x.x range, are internet connections from enterprises customers. VLAN 3800 is the CPE management.

RP/0/RSP0/CPU0:VPI1ERIP003#sh int brief | i Gi100/0/0/5

Wed Nov 13 06:11:30.006 WET

        Gi100/0/0/5          up          up               ARPA  1514    1000000

    Gi100/0/0/5.200          up          up             802.1Q  1518    1000000

   Gi100/0/0/5.3800          up          up             802.1Q  1518    1000000

###### If ping is successful, that means we have connectivity with the other side, and we are OK.

**RP/0/RSP0/CPU0:VPI1ERIP003#ping 88.157.153.54**

Wed Nov 13 09:16:09.007 WET

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 88.157.153.54, timeout is 2 seconds:

.....

Success rate is 0 percent (0/5)

###### If ping is unsuccessful (could be because of a customer ACL, we have seen this) check CACTI (<http://cacti4os.corporativo.pt/cacti/index.php>) to see if the was traffic on the link right before the upgrade. If not a lot of traffic before upgrade, it should be ok.

A screenshot of a cell phone

Description automatically generated

###### Advance, but leave a note for the operations team to check the interface in the morning and see if traffic has increased. If you are still at the office, check it as well at 8/9 am local time to see if traffic increased.

#### Use the below commands to make sure there are no QOS issues

sh policy-map interface <interface> input

sh policy-map interface <interface> output

#### Possible actions to take:

* **Shut/no shut the interface**
* **Remove the QoS policy to see if it makes a difference.**

## Bundle sub-Interface with no packet drops before the upgrade and packet drops after the upgrade.

#### Check if bundle sub-interface has a QoS policy with a policer configured.

interface Bundle-Ether10.12 l2transport

description SIN71-1POLT1-VOICE-L2 n/a [A]

encapsulation dot1q 12

rewrite ingress tag pop 1 symmetric

mtu 1518

service-policy input INGRESS-PARENT-FTTH-NGN shared-policy-instance SIN71-1POLT1-IN

service-policy output EGRESS-PARENT-FTTH-NGN shared-policy-instance SIN71-1POLT1-OUT

**RP/0/RSP0/CPU0:SIN1ERIP001#sh run policy-map INGRESS-PARENT-FTTH-NGN**

Tue Nov 12 06:29:09.689 WET

policy-map INGRESS-PARENT-FTTH-NGN

class class-default

  service-policy INGRESS-CHILD-FTTH-NGN

!

 end-policy-map

!

**RP/0/RSP0/CPU0:SIN1ERIP001#sh run policy-map INGRESS-CHILD-FTTH-NGN**

Tue Nov 12 06:29:20.400 WET

policy-map INGRESS-CHILD-FTTH-NGN

class EDGE-FTTH-NGN-VOICE

  priority level 1

  police rate percent 10

  !

  set precedence 5

  set mpls experimental imposition 5

!

 class EDGE-FTTH-NGN-STB

  set precedence 3

  set mpls experimental imposition 3

!

 class EDGE-FTTH-NGN-NET

  set precedence 0

  set mpls experimental imposition 0

!

 class EDGE-FTTH-NGN-WIFI-COMMUNITY

  set precedence 0

  set mpls experimental imposition 0

!

 class class-default

!

 end-policy-map

!

**RP/0/RSP0/CPU0:SIN1ERIP001#sh run class-map EDGE-FTTH-NGN-VOICE**

Tue Nov 12 06:29:39.419 WET

class-map match-any EDGE-FTTH-NGN-VOICE

match vlan 12

 end-class-map

!

#### Remove QoS from bundle sub-interface.

interface Bundle-Ether10.12 l2transport

no service-policy input INGRESS-PARENT-FTTH-NGN shared-policy-instance SIN71-1POLT1-IN

no service-policy output EGRESS-PARENT-FTTH-NGN shared-policy-instance SIN71-1POLT1-OUT

#### Leave a note for the operations team in the report.

**Notes:**

One thing that we have noticed is that the interface chosen as active in the bundle is not as configured. It should be interface**TenGigE0/0/2/2**, due to the configured priority, but **Te0/0/2/3**is being chosen.

This can be due to a remote device misconfiguration (link swapped or priority wrong on the remove device).

**interface TenGigE0/0/2/2**

description SIN71-1POLT1:9/0 FALTA [A]

bundle id 10 mode active

bundle port-priority 1

lacp period short

carrier-delay up 2000 down 0

load-interval 30

dampening

!

interface TenGigE0/0/2/3

description SIN71-1POLT1:10/0 FALTA [A]

bundle id 10 mode active

lacp period short

carrier-delay up 2000 down 0

load-interval 30

dampening

!

**RP/0/RSP0/CPU0:SIN1ERIP001#sh bundle bundle-ether 10**

Tue Nov 12 16:50:59.414 WET

Bundle-Ether10

Status: Up

Local links <active/standby/configured>: 1 / 1 / 2

Local bandwidth <effective/available>: [10000000](tel:10000000)(10000000) kbps

MAC address (source): d46d.5053.ee71 (Chassis pool)

Inter-chassis link: No

Minimum active links / bandwidth: 1 / 1 kbps

Maximum active links: 1

Wait while timer: Off

Load balancing:

Link order signaling: Not configured

Hash type: Default

Locality threshold: None

LACP: Operational

Flap suppression timer: 100 ms

Cisco extensions: Disabled

Non-revertive: Disabled

mLACP: Not configured

IPv4 BFD: Not configured

IPv6 BFD: Not configured

Port Device State Port ID B/W, kbps

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

Te0/0/2/2 Local Standby 0x0001, 0x0003 [10000000](tel:10000000)

Link is Standby due to maximum-active links configuration

Te0/0/2/3 Local Active 0x8000, 0x0004 [10000000](tel:10000000)

Link is Active

Also, we found policer is only applied to configured active interface (port-priority), not standby interface.

**RP/0/RSP0/CPU0:SIN1ERIP001#   show qos interface bundle-Ether 10.12 input**

Tue Nov 12 07:05:24.295 WET

Interface: TenGigE0\_0\_2\_2 input

Bandwidth configured: 10000000 kbps Bandwidth programed: 10000000 kbps

ANCP user configured: 0 kbps ANCP programed in HW: 0 kbps

Port Shaper programed in HW: 0 kbps

Policy: INGRESS-PARENT-FTTH-NGN Total number of classes: 6

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

Level: 0 Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: N/A

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: EDGE-FTTH-NGN-VOICE

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 96 (Port Priority 1)

Policer Profile: 69 (Single)

Conform: 1000000 kbps (10 percent) Burst: 12500000 bytes (0 Default)

Child Policer Conform: set prec 5   set exp-imp 5

Child Policer Exceed: DROP

Child Policer Violate: DROP

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: EDGE-FTTH-NGN-STB

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 98 (Port Default)

Child Mark: set prec 3   set exp-imp 3

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: EDGE-FTTH-NGN-NET

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 98 (Port Default)

Child Mark: set prec 0   set exp-imp 0

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: EDGE-FTTH-NGN-WIFI-COMMUNITY

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 98 (Port Default)

Child Mark: set prec 0   set exp-imp 0

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: class-default

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 98 (Port Default)

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

Interface: TenGigE0\_0\_2\_3 input

Bandwidth configured: 10000000 kbps Bandwidth programed: 10000000 kbps

ANCP user configured: 0 kbps ANCP programed in HW: 0 kbps

Port Shaper programed in HW: 0 kbps

Policy: INGRESS-PARENT-FTTH-NGN Total number of classes: 6

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

Level: 0 Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: N/A

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: EDGE-FTTH-NGN-VOICE

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 65536 (Port Priority 1)

Missing

Missing

Child Policer Conform: set prec 5   set exp-imp 5

Child Policer Exceed: DROP

Child Policer Violate: DROP

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: EDGE-FTTH-NGN-STB

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 65538 (Port Default)

Child Mark: set prec 3   set exp-imp 3

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: EDGE-FTTH-NGN-NET

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 65538 (Port Default)

Child Mark: set prec 0   set exp-imp 0

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: EDGE-FTTH-NGN-WIFI-COMMUNITY

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 65538 (Port Default)

Child Mark: set prec 0   set exp-imp 0

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

Level: 1 Policy: INGRESS-CHILD-FTTH-NGN Class: class-default

Parent Policy: INGRESS-PARENT-FTTH-NGN Class: class-default

QueueID: 65538 (Port Defaul

## MCLAG related issues

**Ativo -> PAssivo**

mlacp switchover bundle-Ether 100

**PAssivo  -> Ativo**

mlacp switchback bundle-Ether 100

Bundle 99 is running MC-LAG and had its active interface on  **VRS1ERIP001**before the reload, after the reload the active interface was on**MRN1ERIP001**.

Since the MC-LAG is configured as non-revertive the active interface continued on **MRN1ERIP001** after the upgrade. All BGP peers and VRFs were up on **MRN1ERIP001**after the upgrade.

**RP/0/RSP0/CPU0:VRS1ERIP001#sh bundle bundle-ether 99**

Mon Nov 11 05:25:43.131 WET

Bundle-Ether99

  Status:                                    mLACP hot standby

  Local links <active/standby/configured>:   0 / 1 / 1

(…)

    Switchover type:                         Non-revertive

(…)

  Port                  Device           State        Port ID         B/W, kbps

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

  Gi0/0/1/4             Local            Standby      0x00d0, 0xa001     1000000

      mLACP peer is active

  Gi0/0/1/0             195.23.1.46      Active       0x00cf, 0x9001     1000000

      Link is Active

**RP/0/RSP0/CPU0:MRN1ERIP001#sh bundle bundle-ether 99**

Mon Nov 11 05:29:01.722 WET

Bundle-Ether99

  Status:                                    Up

  Local links <active/standby/configured>:   1 / 0 / 1

  (..)

    Switchover type:                         Non-revertive

(…)

  Port                  Device           State        Port ID         B/W, kbps

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

  Gi0/0/1/0             Local            Active       0x00cf, 0x9001     1000000

      Link is Active

  Gi0/0/1/4             195.23.1.47      Standby      0x00d0, 0xa001     1000000

      Link is marked as Standby by mLACP peer

Interface Gi0/0/0/10 on bundle-ether 201 became the standby link even though it had a lower bundle port-priority value configured. Perhaps due to the order in which the interface came up.

**RP/0/RSP0/CPU0:VRS1ERIP001#sh bundle bundle-ether 201**

Mon Nov 11 05:43:13.577 WET

Bundle-Ether201

  Status:                                    Up

  Local links <active/standby/configured>:   1 / 1 / 2

 Local bandwidth <effective/available>:     1000000 (1000000) kbps

  MAC address (source):                      78ba.f95d.6090 (Chassis pool)

  Inter-chassis link:                        No

  Minimum active links / bandwidth:          1 / 1 kbps

  Maximum active links:                      1

  Wait while timer:                          Off

  Load balancing:

    Link order signaling:                    Not configured

    Hash type:                               Default

    Locality threshold:                      None

  LACP:                                      Operational

    Flap suppression timer:                  100 ms

    Cisco extensions:                        Disabled

    Non-revertive:                           Enabled

 mLACP:                                     Not configured

  IPv4 BFD:                                  Not configured

  IPv6 BFD:                                  Not configured

  Port                  Device           State        Port ID         B/W, kbps

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

  Gi0/0/0/10            Local            Standby      0x8001, 0x0007     1000000

      Link is Standby due to maximum-active links configuration

  Gi0/0/1/10            Local            Active       0x8000, 0x0004     1000000

      Link is Active

**RP/0/RSP0/CPU0:VRS1ERIP001#sh run int Gi0/0/0/10**

Mon Nov 11 05:43:20.848 WET

interface GigabitEthernet0/0/0/10

description MW-CASTRO\_MARIM-077S3 CMR1500-1\_VST59-2\_NS\_2 [I] 1000M SID:C00194790 MAIN

bundle id 201 mode active

bundle port-priority 1

lacp period short

negotiation auto

carrier-delay up 2000 down 0

load-interval 30

dampening

frequency synchronization

**RP/0/RSP0/CPU0:VRS1ERIP001#sh run int Gi0/0/1/10**

Mon Nov 11 05:43:26.241 WET

interface GigabitEthernet0/0/1/10

description MW-CASTRO\_MARIM-077S3 CMR1500-1\_VST59-2\_NS\_3 [I] 1000M SID:C00194791 SPARE

bundle id 201 mode active

lacp period short

negotiation auto

carrier-delay up 2000 down 0

load-interval 30

dampening

frequency synchronization

!

!

## Port down after the upgrade

* Check status on other device and do shut/ no shut.
* If it won't come up check configuration of the interface for auto-negotiation (remove to see if it helps)
* Check transceiver transmission and receive values (If TX is zero may be a faulty SFP on the Cisco side, If RX is zero than issue may be related to Cisco side or other side). Check for any alarm.

RP/0/RSP0/CPU0:CAC1ERIP2#sh run int Gi102/0/0/31

Thu Feb 13 05:15:41.085 WET

interface GigabitEthernet102/0/0/31

description n06994:1/1/1 SNT11321-2\_SNT165-1\_NS\_1 [C] OBS:[20170413]

negotiation auto

!

RP/0/RSP0/CPU0:CAC1ERIP2#sh int Gi102/0/0/31

Thu Feb 13 05:15:46.998 WET

GigabitEthernet102/0/0/31 is down, line protocol is down

RP/0/RSP0/CPU0:CAC1ERIP2#sh ip int br | i 102/0/0/31

Thu Feb 13 05:34:58.184 WET

GigabitEthernet102/0/0/31 unassigned Down Down default

GigabitEthernet102/0/0/31.100 10.255.1.1 Down Down VPN\_TRIPOD

GigabitEthernet102/0/0/31.200 88.157.171.237 Down Down default

GigabitEthernet102/0/0/31.3800 10.128.81.116 Down Down VPN-GESTAO-NDD

RP/0/RSP0/CPU0:CAC1ERIP2#sh run int GigabitEthernet102/0/0/31

Thu Feb 13 06:09:57.014 WET

interface GigabitEthernet102/0/0/31

description n06994:1/1/1 SNT11321-2\_SNT165-1\_NS\_1 [C] OBS:[20170413]

!

RP/0/RSP0/CPU0:CAC1ERIP2#sh int Gi102/0/0/31 | i up

Thu Feb 13 06:17:54.954 WET

GigabitEthernet102/0/0/31 is up, line protocol is up

RP/0/RSP0/CPU0:CAC1ERIP2#sh ip int br | i 102/0/0/31

Thu Feb 13 06:18:25.099 WET

GigabitEthernet102/0/0/31 unassigned Up Up default

GigabitEthernet102/0/0/31.100 10.255.1.1 Up Up VPN\_TRIPOD

GigabitEthernet102/0/0/31.200 88.157.171.237 Up Up default

GigabitEthernet102/0/0/31.3800 10.128.81.116 Up Up VPN-GESTAO-NDD

**RP/0/RP1/CPU0:ASR9922-A#sh controllers HundredGigE0/2/0/1**

Thu Feb 13 06:48:08.936 EST

Operational data for interface HundredGigE0/2/0/1:

State:

Administrative state: enabled

Operational state: Up

LED state: Green On

Phy:

Media type: R fiber over 4 Lane optics (long reach)

Optics:

Vendor: CISCO

Part number: 800-39910-06

Serial number: FBN18460101

Type: CPAK-100G-LR4

Rev: A0

Wavelength: 1302.35 nm

Digital Optical Monitoring:

Transceiver Temp: 54.835 C

Transceiver Voltage: 3.333 V

Alarms key: (H) Alarm high, (h) Warning high

(L) Alarm low, (l) Warning low

Wavelength Tx Power Rx Power Laser Bias

Lane (nm) (dBm) (mW) (dBm) (mW) (mA)

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

0 n/a -1.5 0.7088 -1.5 0.7011 68.176

1 n/a -1.7 0.6809 -1.6 0.6953 80.668

2 n/a -1.2 0.7561 -1.8 0.6676 74.616

3 n/a -1.2 0.7593 -1.2 0.7631 73.602

DOM alarms:

No alarms

Alarm Alarm Warning Warning Alarm

Thresholds High High Low Low

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

Transceiver Temp (C): 70.000 65.000 5.000 0.000

Transceiver Voltage (V): 3.663 3.531 3.069 2.937

Laser Bias (mA): 102.076 97.076 53.370 48.370

Transmit Power (mW): 5.620 2.810 0.370 0.140

Transmit Power (dBm): 7.497 4.487 -4.318 -8.539

Receive Power (mW): 2.800 2.000 0.100 0.087

Receive Power (dBm): 4.472 3.010 -10.000 -10.605

MAC address information:

Operational address: 8478.ac35.2d1e

Burnt-in address: d46d.501e.2caa

No unicast addresses in filter

No multicast addresses in filter

Autonegotiation disabled.

Operational values:

Speed: 100Gbps

Duplex: Full Duplex

Flowcontrol: None

Loopback: None (or external)

MTU: 1514

MRU: 1514

Inter-packet gap: standard (12)

**Contact field:**

* Remove cable and plug it back.
* As a last step they need to Try changing SFP/cable
* Check remote device if possible

## BGP neighborship down

#### Check if interface associated to the neighborship is down.

#### Do same troubleshooting as for interface down.

#### If interface is not down -> clear bgp <neighbor> graceful or clear bgp <neighbor>

#### Shut /no shut interface

# Cacti Guide

A brief explanation of how to use CACTI. You have to be on the NOS VPN.

1)

Credentials and link to login to NOS’s Cacti.

<http://cacti4os.corporativo.pt/cacti/index.php>

Username:         cisco

Password:          c15#Pass

2)

After login in, click on the “mountain” tab on the upper right corner of the screen.

A close up of a logo

Description automatically generated

3)

On the left of the screen you have the **Search:** where you can search for the device using the following formula **<hostname>.\*<interface id>**. Example: **VPI1ERIP003.\*100/0/0/5.200**

Press **Go**.

A screenshot of a social media post

Description automatically generated

 4)

Click on the magnifying glass next to the graph and you can see the graph in greater detail.

A screenshot of a social media post

Description automatically generated

# Rollback Procedure from IOS-XR 6.6.3 to IOS-XR 5.x.x or 6.2.3

Without an “install commit”:

To roll back from IOS-XR 6.6.3 to IOS-XR 5.x.x or 6.2.3, if an user has not performed “install commit” on release 6.6.3, the router can be reverted back to its prior committed state by performing “reload location all” from admin mode.

**admin reload location all**

With an “install commit”:

If the user has performed “install commit”, then “install rollback to <ID >” procedure needs to be initiated, from 6.6.3 to x.x.x rollback example:

**Step 1 – Check for example if 6.2.3 is present in disk0:**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**sh install inactive summary**

Mon Aug 12 16:52:21.538 WEST

Default Profile:

SDRs:

Owner

Inactive Packages:

disk0:asr9k-9000v-nV-px-6.2.3

disk0:asr9k-doc-px-6.2.3

disk0:asr9k-fpd-px-6.2.3

disk0:asr9k-k9sec-px-6.2.3

disk0:asr9k-mcast-px-6.2.3

disk0:asr9k-mgbl-px-6.2.3

disk0:asr9k-mini-px-6.2.3

disk0:asr9k-mpls-px-6.2.3

disk0:asr9k-px-6.2.3.CSCvg40579-1.0.0

disk0:asr9k-px-6.2.3.CSCvh94728-1.0.0

disk0:asr9k-px-6.2.3.CSCvi21029-1.0.0

disk0:asr9k-px-6.2.3.CSCvi85535-1.0.0

disk0:asr9k-px-6.2.3.CSCvi90822-1.0.0

disk0:asr9k-px-6.2.3.CSCvj05162-1.0.0

disk0:asr9k-px-6.2.3.CSCvj43752-1.0.0

disk0:asr9k-px-6.2.3.CSCvf38772-1.0.0

disk0:asr9k-px-6.2.3.CSCvh71595-1.0.0

disk0:asr9k-px-6.2.3.CSCvi12398-1.0.0

disk0:asr9k-px-6.2.3.CSCvi31649-1.0.0

disk0:asr9k-px-6.2.3.CSCvi76551-1.0.0

disk0:asr9k-px-6.2.3.CSCvc88571-1.0.0

disk0:asr9k-px-6.2.3.CSCvf15135-1.0.0

disk0:asr9k-px-6.2.3.CSCvh81555-1.0.0

disk0:asr9k-px-6.2.3.CSCvj29070-1.0.0

disk0:asr9k-px-6.2.3.CSCvj30457-1.0.0

disk0:asr9k-px-6.2.3.CSCvj82402-1.0.0

disk0:asr9k-px-6.2.3.CSCvh23455-1.0.0

disk0:asr9k-px-6.2.3.CSCvi54204-1.0.0

disk0:asr9k-px-6.2.3.CSCvm41965-1.0.0

disk0:asr9k-px-6.2.3.CSCvm64178-1.0.0

**Step 2 – Check if 6.6.3 is active:**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**show install active summary**

Mon Aug 12 16:53:32.059 WEST

Default Profile:

SDRs:

Owner

Active Packages:

disk0:asr9k-9000v-nV-px-6.6.3

disk0:asr9k-doc-px-6.6.3

disk0:asr9k-fpd-px-6.6.3

disk0:asr9k-k9sec-px-6.6.3

disk0:asr9k-mcast-px-6.6.3

disk0:asr9k-mgbl-px-6.6.3

disk0:asr9k-mini-px-6.6.3

disk0:asr9k-mpls-px-6.6.3

**Step 3 – Check if 6.2.3 is committed**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**show install committed summary**

Mon Aug 12 16:54:10.193 WEST

Default Profile:

SDRs:

Owner

Committed Packages:

disk0:asr9k-9000v-nV-px-6.6.3

disk0:asr9k-doc-px-6.6.3

disk0:asr9k-fpd-px-6.6.3

disk0:asr9k-k9sec-px-6.6.3

disk0:asr9k-mcast-px-6.6.3

disk0:asr9k-mgbl-px-6.6.3

disk0:asr9k-mini-px-6.6.3

disk0:asr9k-mpls-px-6.6.3

**Step 4 – Check the installed list, to reference the ID of the installation:**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**admin show install rollback ?**

283 ID of the rollback point to show package information for

288 ID of the rollback point to show package information for

**Check if ID “288” is the 6.2.3 version:**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**admin show install rollback 288**

Mon Aug 12 16:54:58.075 WEST

ID: 288, Label:

Timestamp: 13:27:27 WEST Mon Aug 12 2019

Secure Domain Router: Owner

Node 0/RSP0/CPU0 [RP] [SDR: Owner]

Boot Device: disk0:

Boot Image: /disk0/asr9k-os-mbi-6.6.2/0x100305/mbiasr9k-rsp3.vm

Rollback Packages:

disk0:asr9k-9000v-nV-px-6.6.3

disk0:asr9k-doc-px-6.6.3

disk0:asr9k-fpd-px-6.6.3

disk0:asr9k-k9sec-px-6.6.3

disk0:asr9k-mcast-px-6.6.3

disk0:asr9k-mgbl-px-6.6.3

disk0:asr9k-mini-px-6.6.3

disk0:asr9k-mpls-px-6.6.3

(…)

**It is not… check the next ID “283”**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#ad show install rollback 283

Mon Aug 12 17:11:02.084 WEST

ID: 283, Label:

Timestamp: 18:22:36 WEST Thu Aug 08 2019

Secure Domain Router: Owner

Node 0/RSP0/CPU0 [RP] [SDR: Owner]

Boot Device: disk0:

Boot Image: /disk0/asr9k-os-mbi-6.2.3.CSCvh23455-1.0.0/0x100305/mbiasr9k-rsp3.vm

Rollback Packages:

disk0:asr9k-9000v-nV-px-6.2.3

disk0:asr9k-doc-px-6.2.3

disk0:asr9k-fpd-px-6.2.3

disk0:asr9k-k9sec-px-6.2.3

disk0:asr9k-mcast-px-6.2.3

disk0:asr9k-mgbl-px-6.2.3

disk0:asr9k-mini-px-6.2.3

disk0:asr9k-mpls-px-6.2.3

disk0:asr9k-px-6.2.3.CSCvg40579-1.0.0

disk0:asr9k-px-6.2.3.CSCvh94728-1.0.0

disk0:asr9k-px-6.2.3.CSCvi21029-1.0.0

disk0:asr9k-px-6.2.3.CSCvi85535-1.0.0

disk0:asr9k-px-6.2.3.CSCvi90822-1.0.0

disk0:asr9k-px-6.2.3.CSCvj05162-1.0.0

disk0:asr9k-px-6.2.3.CSCvj43752-1.0.0

disk0:asr9k-px-6.2.3.CSCvf38772-1.0.0

disk0:asr9k-px-6.2.3.CSCvh71595-1.0.0

disk0:asr9k-px-6.2.3.CSCvi12398-1.0.0

disk0:asr9k-px-6.2.3.CSCvi31649-1.0.0

disk0:asr9k-px-6.2.3.CSCvi76551-1.0.0

disk0:asr9k-px-6.2.3.CSCvh81555-1.0.0

disk0:asr9k-px-6.2.3.CSCvj29070-1.0.0

disk0:asr9k-px-6.2.3.CSCvj30457-1.0.0

disk0:asr9k-px-6.2.3.CSCvh23455-1.0.0

disk0:asr9k-px-6.2.3.CSCvi54204-1.0.0

disk0:asr9k-px-6.2.3.CSCvm41965-1.0.0

disk0:asr9k-px-6.2.3.CSCvm64178-1.0.0

(…)

The ID 283 is the 6.2.3, to rollback:

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**admin show install rollback 283 summary**

Mon Aug 12 17:21:21.998 WEST

ID: 283, Label:

Timestamp: 18:22:36 WEST Thu Aug 08 2019

Default Profile:

SDRs:

Owner

Rollback Packages:

disk0:asr9k-9000v-nV-px-6.2.3

disk0:asr9k-doc-px-6.2.3

disk0:asr9k-fpd-px-6.2.3

disk0:asr9k-k9sec-px-6.2.3

disk0:asr9k-mcast-px-6.2.3

disk0:asr9k-mgbl-px-6.2.3

disk0:asr9k-mini-px-6.2.3

disk0:asr9k-mpls-px-6.2.3

disk0:asr9k-px-6.2.3.CSCvg40579-1.0.0

disk0:asr9k-px-6.2.3.CSCvh94728-1.0.0

disk0:asr9k-px-6.2.3.CSCvi21029-1.0.0

disk0:asr9k-px-6.2.3.CSCvi85535-1.0.0

disk0:asr9k-px-6.2.3.CSCvi90822-1.0.0

disk0:asr9k-px-6.2.3.CSCvj05162-1.0.0

disk0:asr9k-px-6.2.3.CSCvj43752-1.0.0

disk0:asr9k-px-6.2.3.CSCvf38772-1.0.0

disk0:asr9k-px-6.2.3.CSCvh71595-1.0.0

disk0:asr9k-px-6.2.3.CSCvi12398-1.0.0

disk0:asr9k-px-6.2.3.CSCvi31649-1.0.0

disk0:asr9k-px-6.2.3.CSCvi76551-1.0.0

disk0:asr9k-px-6.2.3.CSCvh81555-1.0.0

disk0:asr9k-px-6.2.3.CSCvj29070-1.0.0

disk0:asr9k-px-6.2.3.CSCvj30457-1.0.0

disk0:asr9k-px-6.2.3.CSCvh23455-1.0.0

disk0:asr9k-px-6.2.3.CSCvi54204-1.0.0

disk0:asr9k-px-6.2.3.CSCvm41965-1.0.0

disk0:asr9k-px-6.2.3.CSCvm64178-1.0.0

**Step 5 – Rollback to 6.2.3 – Test before apply**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**admin install rollback to 283 test synchronous**

Mon Aug 12 17:24:28.648 WEST

Install operation 291 '(admin) install rollback to 283 synchronous test' started by user 'educar' via CLI at 17:24:28 WEST Mon Aug 12 2019.

Warning: No changes will occur due to 'test' option being specified. The following is the predicted output for this install command.

Info: After this install operation, some SMU package(s) are fully/partially superceded. The fully superseded SMUs can found using CLI: 'show install superceded'. If found those can be deactivated using CLI: 'install deactivate

Info: superceded'.

Info: This operation will reload the following nodes in parallel:

Info: 0/RSP0/CPU0 (RP) (SDR: Owner)

Info: 0/0/CPU0 (LC) (SDR: Owner)

Info: 0/2/CPU0 (LC) (SDR: Owner)

Info: 0/1/CPU0 (LC) (SDR: Owner)

Info: 0/3/CPU0 (LC) (SDR: Owner)

Proceed with this install operation (y/n)? [y]

Info: Install Method: Parallel Reload

Install operation 291: load phase started at 17:25:42 WEST Mon Aug 12 2019.

Info: FPD Upgrade: No fpd on location 0/RSP0/CPU0 need upgrade at this time.

Info: FPD Upgrade: No fpd on location 0/0/CPU0 need upgrade at this time.

Info: FPD Upgrade: No fpd on location 0/1/CPU0 need upgrade at this time.

Info: FPD Upgrade: No fpd on location 0/2/CPU0 need upgrade at this time.

Info: FPD Upgrade: No fpd on location 0/3/CPU0 need upgrade at this time.

Warning: SDR Owner: No incompatible configuration will be removed due to the 'test' option

Warning: SDR Owner: Rolling back any configuration changes made as part of the install operation.

Info: The changes made to software configurations will not be persistent across system reloads. Use the command '(admin) install commit' to make changes persistent.

Info: Please verify that the system is consistent following the software change using the following commands:

Info: show system verify

Info: install verify packages

Install operation 291 completed successfully at 17:25:48 WEST Mon Aug 12 2019.

**Step 6 – Rollback to 6.2.3**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**admin install rollback to 283 synchronous**

Mon Aug 12 17:35:11.730 WEST

Install operation 292 '(admin) install rollback to 283 synchronous' started by user 'educar' via CLI at 17:35:11 WEST Mon Aug 12 2019.

Info: After this install operation, some SMU package(s) are fully/partially superceded. The fully superseded SMUs can found using CLI: 'show install superceded'. If found those can be deactivated using CLI: 'install deactivate

Info: superceded'.

Info: This operation will reload the following nodes in parallel:

Info: 0/RSP0/CPU0 (RP) (SDR: Owner)

Info: 0/0/CPU0 (LC) (SDR: Owner)

Info: 0/2/CPU0 (LC) (SDR: Owner)

Info: 0/1/CPU0 (LC) (SDR: Owner)

Info: 0/3/CPU0 (LC) (SDR: Owner)

Proceed with this install operation (y/n)? [y]

Info: Install Method: Parallel Reload

Install operation 292: load phase started at 17:36:57 WEST Mon Aug 12 2019.

Info: FPD Upgrade: No fpd on location 0/RSP0/CPU0 need upgrade at this time.

Info: FPD Upgrade: No fpd on location 0/0/CPU0 need upgrade at this time.

Info: FPD Upgrade: No fpd on location 0/1/CPU0 need upgrade at this time.

Info: FPD Upgrade: No fpd on location 0/2/CPU0 need upgrade at this time.

Info: FPD Upgrade: No fpd on location 0/3/CPU0 need upgrade at this time.

Info: The changes made to software configurations will not be persistent across system reloads. Use the command '(admin) install commit' to make changes persistent.

Info: Please verify that the system is consistent following the software change using the following commands:

Info: show system verify

Info: install verify packages

Install operation 292 completed successfully at 17:37:33 WEST Mon Aug 12 2019.

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#

**Step 7 – Show install active**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**sh install active summary**

Mon Aug 12 17:59:53.908 WEST

Default Profile:

SDRs:

Owner

Active Packages:

disk0:asr9k-9000v-nV-px-6.2.3

disk0:asr9k-doc-px-6.2.3

disk0:asr9k-fpd-px-6.2.3

disk0:asr9k-k9sec-px-6.2.3

disk0:asr9k-mcast-px-6.2.3

disk0:asr9k-mgbl-px-6.2.3

disk0:asr9k-mini-px-6.2.3

disk0:asr9k-mpls-px-6.2.3

disk0:asr9k-px-6.2.3.CSCvg40579-1.0.0

disk0:asr9k-px-6.2.3.CSCvh94728-1.0.0

disk0:asr9k-px-6.2.3.CSCvi21029-1.0.0

disk0:asr9k-px-6.2.3.CSCvi85535-1.0.0

disk0:asr9k-px-6.2.3.CSCvi90822-1.0.0

disk0:asr9k-px-6.2.3.CSCvj05162-1.0.0

disk0:asr9k-px-6.2.3.CSCvj43752-1.0.0

disk0:asr9k-px-6.2.3.CSCvf38772-1.0.0

disk0:asr9k-px-6.2.3.CSCvh71595-1.0.0

disk0:asr9k-px-6.2.3.CSCvi12398-1.0.0

disk0:asr9k-px-6.2.3.CSCvi31649-1.0.0

disk0:asr9k-px-6.2.3.CSCvi76551-1.0.0

disk0:asr9k-px-6.2.3.CSCvh81555-1.0.0

disk0:asr9k-px-6.2.3.CSCvj29070-1.0.0

disk0:asr9k-px-6.2.3.CSCvj30457-1.0.0

disk0:asr9k-px-6.2.3.CSCvh23455-1.0.0

disk0:asr9k-px-6.2.3.CSCvi54204-1.0.0

disk0:asr9k-px-6.2.3.CSCvm41965-1.0.0

disk0:asr9k-px-6.2.3.CSCvm64178-1.0.0

**Step 8 – Commit the IOS-XR version**

RP/0/RSP0/CPU0:LAB-ASR9K-PE03#**admin install commit**

In case of rollback by turboboot the proceeds will be by describe in the chapter “**IOS-XR Turboboot to IOS-XR 6.6.2**”.

# About This Document

Author: Chethan Krishna

Change Authority: Cisco Advanced Services

Reference Number:

## History

Table 4 Revision History

| Version No. | Issue Date | Status | Reason for Change |
| --- | --- | --- | --- |
| 1.0 | 04-Feb-2020 | Released | Draft version |
| 2.0 | 06-Feb-2020 | Released | Added Cacti Guide & changed the document aesthetics |
| 3.0 | 17-Feb-2020 | Released | Added more troubleshooting steps and updated CACTI guide. |

## Review

Table 5 Review History

| Reviewer’s Details | Version No. | Date |
| --- | --- | --- |
|  |  |  |

Change Forecast: Medium

**This document will be kept under revision control.**

# Document Acceptance

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This ACCEPTANCE CERTIFICATE is to be completed/signed and returned to the Cisco Project Manager.