



CPSS Upgrade and UDC Traffic Impact

Cisco IOS XR Release 26.1.1 introduces a new version of the CPSS, which manages the internal control Ethernet switch on the Route Processor (RP). When the software version crosses R26.1.1 either through an upgrade from an earlier release or a downgrade back to one, the CPSS version changes as well. This event triggers a reset and reinitialization of the internal Ethernet switch, temporarily interrupting UDC traffic.

UDC traffic disruption during software upgrade or downgrade

When Cisco IOS XR Release 26.1.1 or later is installed on these platforms, or when downgrading from this release, expect this behavior.

- UDC traffic is interrupted for about 100 seconds.
- The disruption begins during the Post Bootup FPD upgrade phase of the boot sequence.
- Traffic recovers automatically when the link comes back up without any user action.



Note The system reports a SWITCH_FIRMWARE_BOOT_FAIL syslog and triggers a switch reset.

Operations that do not cause UDC traffic disruption

Certain operations do not change the CPSS version and do not disrupt UDC traffic. These operations include:

- RP warm reload
- Line card warm reload
- ESD or CMA process restart
- OLT or ILA FPD upgrade

Disaster Recovery considerations

During Disaster Recovery, the Route Processor is physically replaced. If the replacement RP has a different CPSS version, the switch resets, disrupting UDC traffic. The disruption duration depends on the BIOS version of the replacement RP.

- **BIOS version 5.90 or later:** UDC traffic disruption lasts about 100 seconds.

- **BIOS version earlier than 5.90:** UDC traffic disruption lasts about 32 minutes due to an extra switch reset cycle.



Note Before performing Disaster Recovery with RP replacement, verify that the replacement RP has BIOS version 5.90 or later. Using an RP with an older BIOS extends UDC traffic disruption from 100 seconds to 32 minutes.

- [Verify UDC port traffic statistics, on page 2](#)

Verify UDC port traffic statistics

After a software upgrade or downgrade that crosses Release 26.1.1, UDC traffic may be interrupted for approximately 100 seconds. It automatically recovers after this period.

Follow these steps to ensure that the UDC ports have returned to the Up state and that traffic is flowing without errors.

Procedure

Step 1 Run the **show controller switch statistics** command to view the statistics of all switch port states and packet counts.

Example:

```
RP/0/RP0/CPU0:ios# show controller switch statistics location 0/RP0/CPU0
```

The command displays a table of all switch ports. Locate the rows for UDC0 and UDC1 and verify these columns:

- The **Phys State** column shows **Up**.
- The **Tx Drops/Errors** and **Rx Drops/Errors** columns show **0**.

```

Rack  Card  Switch  Rack Serial Number
-----
  0    RP0   RP-SW   <serial-number>

          Phys  State  Tx      Rx
          State Changes Packets Packets Drops/ Drops/
          State Changes Packets Packets Errors  Errors Connects To
...
10    Up    3      2316362958  2314924341  0      0      UDC0
11    Up    3      2314924559  2316363174  0      0      UDC1
...

```

Step 2 Run the **show controller switch statistics detail** command to view detailed Rx and Tx counters for each UDC port.

Example:

```
RP/0/RP0/CPU0:ios# show controller switch statistics detail location 0/RP0/CPU0
```

Locate the sections for UDC0 (physical port 10) and UDC1 (physical port 11) in the output.

The output displays detailed per-port counters. To confirm normal operation, verify these items in the UDC0 and UDC1 sections:

- **Rx Unicast Packets** and **Tx Unicast Packets** show non-zero values that increment over time, indicating that traffic is flowing.

- All error counters — including **Rx Bad Octets, Rx Errors, Rx Bad CRC, Rx Policing Drops, Tx FIFO Underrun/CRC, Tx Policing Drops, and Tx Queueing Drops** — show **0**.

```

Rack   Card   Switch   Port   State   Speed   Connects To
-----
0      RP0    RP-SW    11     Up      1-Gbps  UDC1

Rx Unicast Packets:    <incrementing>
Rx Bad Octets:         0
Rx Errors:             0
Rx Bad CRC:           0
Rx Policing Drops:    0
Tx Unicast Packets:    <incrementing>
Tx FIFO Underrun/CRC: 0
Tx Policing Drops:    0
Tx Queueing Drops:    0

```

Step 3 Run the **show controller switch statistics summary** command to view the summary of all switch port states and packet counts.

Example:

```
RP/0/RP0/CPU0:ios# show controller switch statistics summary
```

When a controller card is inserted into slot 1 of an NCS 1020 equipped with a filler card, the show controllers switch summary command displays the port speed as 'Unknown' and the port state as 'Forwarding'.

If both UDC ports indicate a physical state of Up, show zero error and drop counts, and have incrementing unicast packet counters, then UDC traffic has recovered from the software upgrade or downgrade.

