



# Release Notes for COS 3.14.4 Maintenance Release

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These release notes describe the key features of Cisco Cloud Object Storage (COS) Release 3.14.4 and describe caveats and other issues contained within this release. For a list of caveats that apply to this COS release, see [Caveats, page 5](#).

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# Introduction

Cisco Cloud Object Storage (COS) provides distributed, resilient, high-performance storage and retrieval of binary large object (blob) data. Object storage is distributed across a cluster of hardware systems, or nodes. The storage cluster is resilient against hard drive failure within a node and against node failure within a cluster. Nodes can be added to or removed from the cluster to adjust cluster capacity as needed.

COS has two primary interfaces for content management:

- The OpenStack Swift API, with enhancements to improve quality of service when accessing both large and small media objects
- The Fanout API for efficient storage of unique copies for fair-use compliance

As a managed service of the Cisco Virtualized Video Processing Controller (V2PC), COS is managed through the V2PC graphical web user interface (GUI), which uses REST APIs to simplify COS setup and management. COS also includes a command-line interface (CLI) for management of remote or programmatic content. In addition, COS provides authentication and authorization services using the OpenStack Swauth API.

Through its various management interfaces, COS provides access to large and small media objects, maintains high quality of service, supports cluster management, and coordinates the replication of data across sites to improve resiliency and optimize the physical location of stored data.

## Features and Content Contained in this Release

The COS Release 3.14.4 is a maintenance release which contains the following:

- Switch Affinity
- Other minor enhancements and bug fixes

## Related Software Products

This COS release is a member of the Cisco Virtualized Video Processing (V2P) product suite. As a managed service of V2P, COS and its content are managed through the V2PC GUI. Under V2PC orchestration, COS works with Cisco and third-party applications to provide complete media processing solutions. See the following documents for additional information:

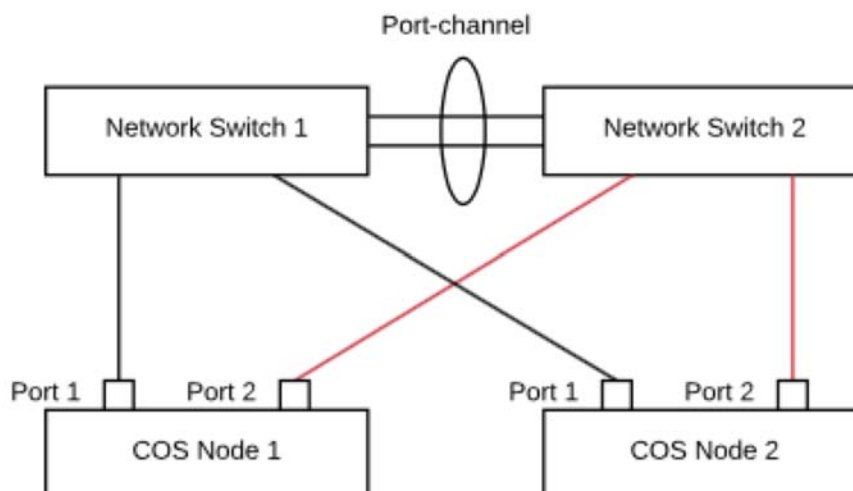
- *Cisco Virtualized Video Processing Controller Deployment Guide*
- *Cisco Virtualized Video Processing Controller User Guide*
- *Cisco Cloud Object Storage Release 3.14.1 User Guide*
- *COS Rolling Update Service User Guide*

## Feature Overview

This release contains minor enhancements, bug fixes, and the new feature Switch Affinity. The Switch Affinity feature enhances the COS software application logic in single-network-segment topologies to prefer to route intra-node communication over optimal network paths, and to only route traffic over non-optimal paths if no optimal network paths exist. For additional information for Switch Affinity, refer to the following section.

## Switch Affinity

COS is typically deployed into a network topology that provides network resiliency through redundant switches or routers. These redundant switches can span one network segment, or each switch can reside on a separate network segment where traffic between switches is routed over layer three. In either case, the network generally provides a physical path for traffic to traverse between the switches over a port-channel or trunk. In these topologies, the COS network interfaces are separately cabled to the switches. In this manner, a COS node is still reachable if one switch stops functioning. A simple example network topology is illustrated in the following diagram.



In this example, there are four communication paths between these two COS nodes.

- Node 1 : Port 1 <--> Node 2 : Port 1 (optimal)
- Node 1 : Port 1 <--> Node 2 : Port 2 (non-optimal)
- Node 1 : Port 2 <--> Node 2 : Port 1 (non-optimal)
- Node 1 : Port 2 <--> Node 2 : Port 2 (optimal)

Of these four communication paths, two paths are considered an optimal path as network packets only traverse through one switch, and two paths are considered non-optimal as network packets traverse the port-channel connecting the switches. The Switch Affinity feature enhances the COS software application logic in single-network-segment topologies to prefer to route intra-node communication over optimal network paths, and to only route traffic over non-optimal paths if no optimal network paths exist. The Switch Affinity feature is not needed when each network switch is bound to separate network segments with layer three routing, as the COS software application already contains logic to prefer to route intra-node communication through the same subnet.

## Path Discovery

In order for the COS application to classify paths as optimal versus non-optimal, the application must first learn about the physical topology of the network. This information can be learned dynamically through listening for bridge data protocol unit (BDPU) frames on network interfaces, or learned through static configuration files. The basic unit of information learned is an identifier for the switch or network bridge to which each COS network port is physically cabled. This information is then shared among all COS nodes, where the application builds a table of optimal paths by pairing source and destination ports that associated with the same switch identifier, and non-optimal paths by pairing source and destination ports associated with different switch identifiers. The COS application will have affinity for network paths to keep network packets traversing with-in a single switch. This switch affinity helps to reduce the amount of port-channel bandwidth necessary to carry traffic between switches, which can be a point of network congestion.

### Bridge Identifiers

The current association of network interfaces to switch identifiers can be viewed on each COS node by reading the `/proc/calypso/status/switch_affinity` file.

For example:

```
[root@cos-node ~]# cat /proc/calypso/status/switch_affinity
eth2 : link UP : bridge id 8064.00:de:fb:01:34:3c
eth4 : link UP : bridge id 8064.00:de:fb:01:34:3c
```

## Dynamic Path Discovery

The COS application is enhanced to listen for broadcast BDPU frames, and process these frames to learn the bridge identifier to which the COS network adapter is connected. By default, this behavior of the COS application is enabled. To disable dynamic discovery at runtime, write the value of 0 into the `procfs` file located at `/proc/calypso/internal/allow_adding_stp_multicast_addresses` on all COS nodes. Similarly, to enable dynamic path discovery, write the value of 1 to the same file.

```
# Disabling dynamic path discovery at COS application runtime
[root@cos-node ~]# echo 0 >
/proc/calypso/internal/allow_adding_stp_multicast_addresses

# Enable dynamic path discovery at COS application runtime
[root@cos-node ~]# echo 1 >
/proc/calypso/internal/allow_adding_stp_multicast_addresses
```

Note that disabling dynamic path discovery will result in the COS application discarding any previously learned information.

To persist disabling of dynamic path discovery, add the following lines to the `/arroyo/test/aftersetupfile` configuration file on each COS node.

```
allow adding stp multicast addresses 0
```

## Static Path Discovery

Pairing host network interfaces with a switch identifier can also be statically configured in the `/arroyo/test/BridgeMap` file on each COS node. This syntax of the file provides a simple pairing of host adapter names to bridge identifiers. Dynamic path discovery is the preferred mode of operation, but static path discovery can be used in cases where dynamic path discovery is not sufficient. Also note that static path discovery is prone to human error. If a port is actually connected to switch 1 and the static bridge map errantly indicates that the port is connected to switch 2, then the resulting behavior will be to force packet to traverse a non-optimal path.

### Example `/arroyo/test/BridgeMap` file

```
eth2 dc1_switch1
eth3 dc1_switch2
eth4 dc1_switch1
eth5 dc1_switch2
```

When using static path discovery, ensure that dynamic path discovery is disabled. Otherwise, the dynamic path discovery will overwrite the application state provided by static path configuration.

The static path configuration can be modified, and re-read by the COS application at runtime by writing a 1 into the `prodfs` file located at `/proc/calypso/test/readbridgemap`.

```
[root@cos-node ~]# echo 1 > /proc/calypso/test/readbridgemap
```

## Caveats

Caveats describe unexpected behavior in COS software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious. Severity 3 caveats are moderate caveats, and only selected severity 3 caveats are included in the caveats document.

Caveat numbers and brief descriptions for Cisco COS Release 3.14.4 releases are listed in this section.

## Open Caveats

### Open Caveats for Cisco COS Release 3.14.4

[Table 1](#) lists the open issues in the COS 3.14.4 release.

Bug details are displayed in the [Bug Search](#).

**Table 1** *Open Caveats in COS 3.14.4 Release*

Bug ID	Description
CSCuv96300	All nodes need to be up and running before a new node can be added
CSCvc01757	Small object garbage collection compaction might leave behind orphan GOID
CSCvc52182	V2PC GUI: GUI may be stuck if click between links too quickly
CSCvc58210	High Cassandra CPU utilization during SWIFT API stress/load testing
CSCvd07284	RUS: rush: show clusters does not display latest info and not in sync with v2pc
CSCve29105	Metadata in CMC node is not cleared after all COS nodes are deleted
CSCvf14624	KDB BUG: soft lockup - stuck for 67s! [swapper:0]

**Table 1** *Open Caveats in COS 3.14.4 Release (continued)*

Bug ID	Description
CSCvf27830	[V2PC CMC] cmc-aic-client crashed when its reconnection request exceeds the max number
CSCvf27837	[V2PC CMC] CmcNodeServiceDown alarm raised but all services are up
CSCvf28343	Log partition monitor: CMC fault status is incorrect
CSCvf28381	Log partition monitor: COS fault status is incorrect
CSCvf28928	V2PC still displays old COS version after all nodes are updated to newer version by RUS
CSCvf29550	COS Lock Manager is affected when the management server goes down
CSCvf35251	KDB Kernel panic - not syncing: Attempted to kill init!
CSCvf43155	BulkDelete deletes all indices without specifying individual indices or using ":all"
CSCvf50123	Memory leaking after half day's longevity

## Resolved Caveats

### Resolved Caveats for Cisco COS Release 3.14.4

[Table 2](#) lists the fixed issues in the COS 3.14.4 release.

Bug details are displayed in the [Bug Search](#).

**Table 2** *Resolved Caveats in COS 3.14.4 Release*

Bug ID	Description
CSCuz35460	Journal Research
CSCvc35844	GNU wget Access List Restrictions Bypass Vulnerability
CSCvd27204	Repair multiple Linux kernel security issues
CSCvd27207	Repair multiple Linux kernel security issues
CSCvd82600	V2PC CMC-Client: Should report node db version info
CSCve02609	Request to raise an alarm when ntp clock is not in sync.
CSCve10535	Need Smoothing for CPU and Memory status in node resiliency status.
CSCve10971	RIOT: Request support BULK Deletion and case 4.2 (off peak window simulation).
CSCve17712	aic-client modification for the metadata lost issue.
CSCve17733	COS Telemetry: Fail to upgrade to td-agent-cos-plugins-cmc-3.14.1-cos0.4.15.x86_64.rpm on CMC nodes.
CSCve19989	V2PC CMC-AICC: old IP should be removed when the cmcinit changes the IP address of a CMC Node.
CSCve22055	[3.14.1][b4]change outlier logic to prevent race condition between multiple servers shutting down.
CSCve29021	[0.0.8]RIOT - add Dash Origin for Playback.

**Table 2**      **Resolved Caveats in COS 3.14.4 Release (continued)**

Bug ID	Description
CSCve37474	aic-client: Auth profile is not automatically added if registered the first COS node to cluster.
CSCve42338	COS AIC Client: failed to update Auth Profile after running cosinit.
CSCve56701	RIOT cannot change RIO user and password.
CSCve58141	SOGC needs to run asynchronous from the evaluator framework.
CSCve65971	Adding iostat and dstat plugins for fluentd (td-agent).
CSCve69880	V2PC COS-AIC: Socket.addListener failed as possible EventEmitter memory leak detected.
CSCve75447	[0.0.13]RIOT - to support JMeter 3.2.
CSCvf06087	[V2PC COS-AIC] needs an event/alarm for TCP connection to docServer more than 5.
CSCvf17470	Port for Profile URL is not correct if GUI port is redirected to other port instead of 8443
CSCvf18959	[3.14.1] mirroring doesn't work correctly with RIO writes.
CSCvf22776	V2PC COS-AICC: interfaces configuration files are not deleted when node is removed from GUI.
CSCvf29327	[V2PC CMC] cmc_aicc needs to be added into monit monitoring.
CSCvf47022	Support different hardware for CMC full image automatic installation.
CSCvf67823	V2PC:GOIDS Status is Warning without any repair process or damaged goids, GUI is not synchronous.
CSCvf80484	[3.14.2][b9]cosd lock timeout error when another node is down.
CSCvf94487	COS Telemetry: Support to export/backup/reindex several stats in metrics-cos-*-cserver-stats-*.
CSCvg07582	CMC Nodes lost Cassandra DB data after upgrade and reboot.
CSCvg20118	/arroyo/log/ get 100% full during multiple billion object ingest in S3260-IOE platform.
CSCvg25593	COS telemetry 3.14 rpm installation failed.
CSCvg28789	Conflicts in COS data in ELK.
CSCvg47379	DB Recovery for DR.
CSCvg49040	Some CMC visualizations do not render data.
CSCvg55233	Match the cos-aicc service name with status message.
CSCvg64762	Script Resets RIO Username and Password.
CSCvg67344	Adaptive port selection.
CSCvg83337	preinst_setup_UCSC-C3260 script doesn't work on CIMC firmware version 3.0 (1c).
CSCvg85646	Goliath: remote smoothing fill pull counter went negative.
CSCvg88247	COS Troubleshooting Guide: Chapter "Troubleshooting Swift and Swauth API Errors" needs to be updated.

**Table 2**      **Resolved Caveats in COS 3.14.4 Release (continued)**

Bug ID	Description
CSCvg88265	COS User Guide: Chapter "Elasticsearch Index Templates" should contain installation instructions.
CSCvg89964	Goliath: One COS node crashed while just doing simple reading with VMR.
CSCvg96475	Make network interrupt rate configurable.
CSCvg97624	Tool Tips in COS V2PC setup should explain the warnings clearly.
CSCvg97628	HDD Timeouts in cserver need to be more aggressive.
CSCvg97913	PSB: IPv4 Codenomicon test failed on COS node due to IPV4 packet anomaly.

## Accessing Bug Search Tool

This section explains how to use the Bug Search tool to search for a specific bug or to search for all bugs in a release.

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- Step 1** Go to <https://tools.cisco.com/bugsearch/>.
- Step 2** At the Log In screen, enter your registered Cisco.com username and password; then, click **Log In**. The Bug Search page opens.




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**Note** If you do not have a Cisco.com username and password, you can register for them at <http://tools.cisco.com/RPF/register/register.do>.

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- Step 3** To search for a specific bug, enter the bug ID in the Search For field, and press **Enter**.
- Step 4** To search for bugs in the current release, specify the following criteria:
- Select the **Model/SW Family** Product Category drop-down list box, then enter **Cisco Videoscape Distribution Suite for Television** or select the name from the **Select from list** option.
  - Select **Cisco Videoscape Distribution Suite for Television** from the list that displays.
  - The **Cloud Object Store** type displays in the Software Type drop-down list box.
  - Releases: 3.14.4.
  - Advanced Filter Options—Define custom criteria for an advanced search by selecting an appropriate value from the drop-down lists by choosing either one Filter or multiple filters from the available categories. After each selection, the results page will automatically load below the filters pane. If you select multiple filters, it behaves like an AND condition.
    - Modified Date—Select one of these options to filter bugs: **Last Week**, **Last 30 days**, **Last 6 months**, **Last year**, or **All**.
    - Status—Select **Fixed**, **Open**, **Other**, or **Terminated**.
- Select **Fixed** to view fixed bugs. To filter fixed bugs, uncheck the Fixed check box and select the appropriate suboption (Resolved or Verified) that appears below the Fixed check box.
- Select **Open** to view all open bugs. To filter the open bugs, uncheck the Open check box and select the appropriate suboptions that appear below the Open check box.
- Select **Other** to view any bugs that are duplicates of another bug.



Select **Terminated** to view terminated bugs. To filter terminated bugs, uncheck the Terminated check box and select the appropriate suboption (Closed, Junked, or Unreproducible) that appears below the Terminated check box. Select multiple options as required.

- Severity—Select the severity level:
  - 1: Catastrophic.
  - 2: Severe
  - 3: Moderate
  - 4: Minor
  - 5: Cosmetic
  - 6: Enhancement
- Rating—Select the bug's quality rating: **5 Stars** (excellent), **4 or more Stars** (good), **3 or more Stars** (medium), **2 or more Stars** (moderate), **1 or more Stars** (poor), or **No Stars**.
- Support Cases—Select whether the bug **Has Support Cases** or **No Support Cases**.
- Bug Type—Select whether the bug is **Employee Visible & Customer Visible** or **Customer Visible Only**.

**Step 5** The Bug Toolkit displays the list of bugs based on the specified search criteria.

**Step 6** You can save or email the current search by clicking their respective option.

If you have any problems using the Bug Search tool, log into the Technical Support website at <http://www.cisco.com/cisco/web/support/index.html> or contact the Cisco Technical Assistance Center (TAC).

## Related Documentation

Refer to the following documents for additional information about this COS release:

- *Cisco Cloud Object Storage Release 3.14.1 User Guide*
- *Cisco Cloud Object Storage Release 3.14.1 API Guide*
- *Cisco Cloud Object Storage Release 3.14.1 Troubleshooting Guide*
- *Open Source Used in COS 3.14.1*
- *Cisco COS Rolling Update Service User Guide*

The entire COS software documentation suite is available on Cisco.com at:

<http://www.cisco.com/c/en/us/support/video/cloud-object-storage/tsd-products-support-series-home.html>

## Obtain Documentation and Submit a Service Request

For information on obtaining documentation, using the Cisco Bug Search Tool (BST), submitting a service request, and gathering additional information, see *What's New in Cisco Product Documentation*.

To receive new and revised Cisco technical content directly to your desktop, you can subscribe to the [What's New in Cisco Product Documentation RSS feed](#). The RSS feeds are a free service.

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