Release Notes for COS 3.22.1

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These release notes describes the new features, caveats and other issues resolved or still open in this release. For a list of caveats that apply to COS Release 3.22.1, see Caveats, page 9.

Contents

The following information is in the release notes:

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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.

New Features and Enhancements

New features in this release include the following:

- Resilience Status
- COS Backup and Recovery

Related Software Products

COS 3.22.1 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 3.22.1 User Guide*
- *COS Rolling Update Service User Guide*

Feature Overview

Table 1 provides an overview of the new COS features contained in this release. For full descriptions of these features, see the *Cisco Cloud Object Store Release 3.22.1 User Guide.*

Table 1   Features Supported in COS Release 3.22.1

Feature	Description
COS Backup and Recovery	In addition to the COS metadata backup and restore requirements, in this release, COS will ensure that changes made to COS file system between the time of the last metadata database backup and the time of metadata data loss do not result in a loss of synchronization between COS metadata and the COS file system when a backup is restored. Also, changes to COS metadata via client API requests between the time of the most recent COS metadata backup and the time of metadata loss shall be preserved so that restoring metadata from a backup does not produce loss of synchronization between COS and client asset databases.
	For COS to backup and restore, cosd shall record, in local files, each successful "mutation" transaction processed by cosd. A successful "mutation" transaction is one that results in a successful change to the COS metadata database. Read-only transactions, and transactions that fail to update the COS metadata database are not recorded. Each transaction file would be stored on the Linux file system of the node where cosd executes. Transactions in the files would be ordered by transaction start time, with files divided into groups of transactions in a one-hour intervals. For example, if the COS metadata backup interval were once every 24 hours, each cosd on every COS node would keep the most recent 25 hours of mutation transactions in 25 individual files per server.
	The cosd transaction files store the information needed to recreate the Cassandra CQL insert and update statements sent by cosd to the CMC cluster. Storing and replaying transactions at the CQL level, rather than at the cserver2cos level, avoids the need to retrieve data from the CMC, making decisions based on that data, and updating the CMC based on those decisions.
	When restoring a COS metadata backup, the cosd transaction files are replayed using the original time stamp of each transaction. Even if the replay is not in time stamp order, Cassandra/DSE will only keep the most recent mutation. During the restoration, COS must be out-of-service and there must be no additional transactions inbound to cosd.

Table 1 **Features Supported in COS Release 3.22.1 (continued)**

Feature	Description
Resilience Status	Resilience status provide status for individual nodes, each Resilience Group, and the Cluster (pod). This status provides the following: • Resilience Evaluation – indicates when the last resilience evaluation was completed or whether it is still in progress. These evaluations are performed independently, on each node, and the information can be viewed at the Resilience Group and Cluster levels. • Goid Counting – provides a count of the total number of Goids and Goids that could not be repaired. • LEC and DEC Recovery Rates – provides data recovery rates for LEC and DEC recovery. The LEC information provides value at the node level, while the DEC information would be of value at both the node and the Resilience Group level. As part of this information gathering, each node needs to track a count of evaluated Goids and repaired Goids that occurred since the last evaluation cycle started (this information also tracks information for the last minute to measure the current rate). • Resilience Evaluation Progress – tracks the progress of the resilience evaluation, tracking when the evaluation started, what percentage has been evaluated, and what percentage is waiting to be evaluated. This information, combined with the current evaluation rate, allows you to perform a rough estimate as to when the evaluation will be completed. • Drive and Disk Space Availability – indicates whether or not sufficient drives and disk space are available on a node for LEC. Note that when running with LEC N:M, there must be at least M disk drives worth of free space. • Resilience Group Servers and Disk Space – indicates whether or not sufficient servers and space are available in a resilience group for DEC. Note that when running with DEC N:M, there must be at least M servers worth of free space. • Information Availability Medium – Resilience status information is available via proc and log files. Proc files can be used to query the current status of the node/Resilience Group/Cluster. Log files can be used to view the past status of the node and resilience groups.

Supported Hardware

COS Supported Hardware

Table 1-2 lists the Cisco hardware models and firmware that fully supports the installation of COS Release 3.22.1.

Note COS Release 3.22.1 has been tested on the hardware models and firmware listed in Table 1-2. It is recommended that you use the specified firmware with the hardware models listed.

For information about installing the hardware, see the following:

Table 1-2   COS 3.22.1 Supported Hardware

Product Name	Storage Bundle	Configuration Supported	Max HDD Capacity	Max Total Storage	SSDs Used by OS and COS	Intel Xeon CPU	Firmware
Cisco CDE6032 (UCS C3K)	4U6	Single Node	56 x 10 TB	560 TB	2 x 480 GB	E5-2695 v4	HUU 2.0(13e)
Cisco CDE6032 (UCS C3K)	4U5	Dual Node	56 x 10 TB	560 TB	4 x 480 GB	E5-2695 v4	HUU 2.0(13e)
Cisco CDE6032 (UCS C3K)	4U3	Dual Node	56 x 6 TB	336 TB	4 x 480 GB	E5-2620 v4	HUU 2.0(13e)
Cisco CDE6032 (UCS C3K)	4U5	Dual Node	56 x 10 TB	560 TB	4 x 480 GB	E5-2620 v4	HUU 2.0(13e), 3.0(1c)
Cisco CDE6032 (UCS C3K-IOE)	4U8	Single Node	56 x 8 TB	560 TB	2 x 480 GB	E5-2680 v4	HUU 3.0(3a)
Cisco UCS S3260	4U6	Single Node	56 x 10 TB	560 TB	2 x 480 GB	E5-2695 v2	HUU 2.0(13e)
Cisco UCS S3260	4U5	Dual Node	56 x 10 TB	560 TB	4 x 480 GB	E5-2695 v2	HUU 2.0(13e)
Cisco UCS S3260	4U4	Single Node	56 x 6 TB	336 TB	2 x 480 GB	E5-2695 v2	HUU 2.0(13e)
Cisco UCS S3260	4U3	Dual Node	56 x 6 TB	336 TB	4 x 480 GB	E5-2695 v2	HUU 2.0(13e)
Cisco UCS S3260	4U3	Single Node	28 x 6 TB	168 TB	2 x 480 GB	E5-2695 v2	HUU 2.0(13e)
Cisco UCS C3160	4U2	Single Node	54 x 6 TB	324 TB	2 x 400 GB	E5-2695 v2	HUU 2.0(6d)
Cisco UCS C3160	4U1	Single Node	54 x 4 TB	216 TB	2 x 400 GB	E5-2695 v2	HUU 2.0(6d)
Cisco CDE465	4R4	Single Node	36 x 6 TB	216 TB	2 x 480 GB	E5-2670 v3	1.0CDEd

- *Cisco UCS S3260 Storage Server Installation and Service Guide*
- *Cisco UCS C3160 Rack Server Installation and Service Guide*
- *Cisco Content Delivery Engine 465 Hardware Installation Guide*

CMC Supported Hardware

The following CMC hardware is supported in Release 3.14.1 and later.

Product Name	Max DB Capacity	Max Total Storage	SSDs Used by OS and CMC	Intel Xeon CPU
Cisco UCS C220M4 (CMC1)	6 x 1.6TB – Raid10	4.8TB	2 x 1.6TB – \ Riad1	E5-2695v3
Cisco UCS C220M4* (CMC2)	5 x 960GB - JBOD	4.8TB	2 x 120GB – \ Raid1	E5-2630v4

* The UCS C220M4 CMC systems - The Cisco UCS C220 M4 Rack Server is the most versatile, high-density, general-purpose enterprise infrastructure and application server in the industry today. It delivers world-record performance for a wide range of enterprise workloads, including virtualization, collaboration, and bare-metal applications.

The C220 M4 (CMC1) is a 1RU server. When configured for COS CMC, the CMC1 includes the following:

- 2 x 1.6TB solid-state drives (SSDs) in RAID1, for operating system and CMC installation.
- 6 x 1.6TB solid-state drives (SSDs) in RAID10, 4.8TB total storage for Database.
- One system I/O controller providing a total of two 10 GbE ports.

The C220 M4 (CMC2) is a 1RU server. When configured for COS CMC, the CMC2 includes the following:

- 2 x 120GB solid-state drives (SSDs) in RAID1, for operating system and CMC \installation.
- 5 x 960GB solid-state drives (SSDs) in JBOD, 4.8TB total storage for Database.
- One system I/O controller providing a total of two 10 GbE ports.

Notes on Cisco CDE6032 Support

COS 3.22.1 supports and comes pre-installed on the Cisco CDE6032, a variant of the UCS S3260 Storage Server that is optimized for COS and related media applications. The CDE6032 includes updated server nodes, uses four 480 GB SSD drives in a hardware RAID configuration as a boot drive, and ships with 560 TB of storage, the maximum currently available for this hardware platform.

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Note Although COS 3.22.1 is pre-installed on the CDE6032, a post-installation script still must be run after installing the hardware. See the *Cisco Cloud Object Storage Release 3.20.1 User Guide* for details.

Notes on Cisco UCS S3260 Support

This release continues support for several UCS S3260 (formerly C3260) configurations. The S3260 platform supports up to two compute nodes and up to 56 storage disks per chassis.

- COS 3.22.1 provides a pre-installation script to enable setup of one or two COS nodes on a UCS S3260 before proceeding with installation of COS software on each COS node configured.

  - If a single node is configured, we recommend using the node with either 28 or 56 disks installed.

  - If two nodes are configured, we recommend installing all 56 disks. The pre-installation script will assign 28 disks to each node.

Note The pre-installation script is run only once for initial hardware configuration. After that, COS can be reinstalled or upgraded and data or system drives replaced without re-executing the script.

- Following installation, you must select one of three available storage bundles for each node during cosinit:

  - UCS S3260 4U6 (56 disks per node): Select this bundle if you configured a single COS node with 56 x 10 TB disks each.

  - UCS S3260 4U5 (28 disks per node): Select this bundle if you configured a dual COS node setup with 28 x 10 TB disks each.

  - UCS S3260 4U4 (56 disks per node): Select this bundle if you configured a single COS node with 56 x 6 TB disks.

  - UCS S3260 4U3 (28 disks per node): Select this bundle if you configured a single COS node with 28 disks installed, or a dual COS node setup with 28 x 6 TB disks each.

Note Knowing which storage bundle is configured allows the system to more accurately report disk issues, such as bad or missing disks, after the node is up and running.

- In a dual node setup, the V2PC web GUI displays the status of only those disks assigned to a particular node:

  - Node1 will list Cisco Disk 01-28.

  - Node2 will list Cisco Disk 29-56.

- On each COS node, eth0 and eth1 are bonded to a bond0 management interface. This differs from the UCS-C3160, where eth0 and eth3 are bonded to a bond0 management interface.

For full details, see **Deploying COS** in the *Cloud Object Storage Release 3.20.1 User Guide*.

System Requirements

COS 3.22.1 operates as a managed service of Cisco V2PC, and COS and its content are managed through the V2PC GUI. For details, see the *Cisco Cloud Object Storage Release 3.22.1 User Guide.*

Note COS 3.22.1 has been tested for compatibility with V2PC Release 3.3.3 (build 3.3.3-16665), available on www.cisco.com. The posted cisco-cos (COS-AIC) application required for integration with V2PC is cisco-cos-bundle-322.1.6.tar. Later releases of COS are expected to be compatible with later versions of V2PC and COS-AIC applications. Contact Cisco for the latest compatibility information.

Supported Environments

COS 3.22.1 supports a Swift and Swauth API environment, and also supports an HTTP-based API for cluster management.

Also, COS 3.22.1 has been tested for compatibility with RUS version 1.3.1 (rus_repo-1.3.1-1.el7.iso).

Note If you have a previously installed RUS version 1.3.2, which was released together with COS 3.16.2 and want to update to RUS version 1.3.1, you will need to first run the following command:

rpm -e run

then follow the RUS User Guide to install the RUS version 1.3.1.

Installation

Although pre-installed on the CDE6032, COS 3.22.1 must be installed on other compatible UCS or CDE hardware. COS software is provided for installation as a downloadable ISO image that includes the base (CentOS) distribution of Linux along with all of the additional RPM packages needed by a COS node. For installation instructions, see the *Cisco Cloud Object Store Release 3.22.1 User Guide.*

Crash Partition Location

When installed on a UCS C3160, COS Release 3.5.1 created a crash partition on one of the SSDs at the rear of the chassis. With COS 3.22.1, the location of the crash partition depends on the node hardware, as follows:

- When installed on a UCS S3260 (formerly C3260), COS 3.22.1 creates a crash partition along with other system partitions on the software RAID SSDs at the rear of the chassis.

- When installed on a UCS C3160, COS 3.22.1 creates a crash partition along with other system partitions on the RAID system drives, which are the SSDs in chassis slots 55 and 56.

These locations assume a new installation and not an upgrade.

Starting CServer

When starting CServer for the first time, enter the command **service cserver start** at the CLI prompt as shown in the following example:

```
[cos-node@ root]# service cserver start
```

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Caution   Starting CServer using the command **service cserver start -C** (or -c) results in removal of all content previously stored on the drives in the node. Do not add the -C (or -c) option unless you intend to wipe all existing content from the drives.

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Note   When CServer starts for the first time, an error message similar to "WARNING: unrecognized cpu, using system TSCs per second" may appear on the console. This issue has been observed on UCS S3260 nodes, but does not indicate a problem and can be safely ignored.

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 3.22.1 releases are listed in this section.

Open Caveats

Open Caveats for Cisco COS Release 3.22.1

Table 3 lists the open issues in the COS 3.22.1 release.

Bug details are displayed in the Bug Search.

Table 3   *Open Caveats in COS 3.22.1 Release*

Bug ID	Description
CSCvk46671	Write failure during 50K+10K load when disk storage is above 70%".
CSCvk71553	Goliath: 3.22.1 SOGC lag and some errors with longer response times from the VMR Integration.

Resolved Caveats

Resolved Caveats for Cisco COS Release 3.22.1

Table 4 lists the fixed issues in the COS 3.22.1 release.

Bug details are displayed in the Bug Search.

Table 4   Resolved Caveats in COS 3.22.1 Release

Bug ID	Description
CSCvk20985	Low memory issue on the cserver.
CSCvk42005	RUS updates during node failure.
CSCvk71468	RUS: Failed to start update from 3.22.1-b6 to 4.1.0-b236.
CSCvk69722	[COS] Node Resilience State is not changed in cosnodestatus.json file when available disks=LEC[n]+1.
CSCvk71199	HTTP Read Errors caused by invalid CCP connection state.
CSCvk69628 -	[COS-AICC] cos-aicc cleans up all the ifcfg-* files after a cos node is removed from v2pc.

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.

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.

> ✎
>
> **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.

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: 3.22.1.
- 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 COS 3.22.1:

- *Cisco Cloud Object Storage Release 3.22.1 User Guide*

- *Cisco Cloud Object Storage Release 3.16.1 API Guide*

- *Cisco Cloud Object Storage Release 3.16.1 Troubleshooting Guide*

- *Open Source Used in COS 3.22.1*

- *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.