

IBM Cloud Object Storage System  
3.17.1

*Release Notes*



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## Support information

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Technical support contacts.

For more information on the product or help with troubleshooting, contact IBM Support at [ibm.com/mysupport](https://ibm.com/mysupport) or visit the [Directory of worldwide contacts](#).



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# Chapter 1. New Features and Improvements in ClevOS 3.17.1

## **MFA support for Manager access (1695)**

IBM COS Manager™ GUI and API access is enabled via an OpenID Connect provider. This allows integration with an identity provider that may provide a wide range of access policies and credential management features (e.g. requiring multi-factor authentication and enforcing password rotation).

See the OpenID Connect section in the *IBM Manager Administration Guide* or help for details.





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## Chapter 2. New Features and Improvements in ClevOS 3.17.0

### **COS BCDR Manager DB Backup to Cloud Bucket (1818)**

You can configure the IBM COS Manager™ database backup on an S3 bucket using either the Manager UI or the REST API. The backup file can be uploaded to the specified endpoint bucket. If the backup was to an S3 bucket, the file must be transferred from the remote server to a local disk prior to restore, similar to using FTP for a Manager database backup.

A new **backupType** option, **s3Bucket**, was added to **Configure system backup settings**. Further, the **backupType** option **remote** has been changed to **ftp**. Note that the API is backwards compatible and supports both the **ftp** and **remote** options.

See *IBM Manager Administration Guide* and *IBM REST API Developer Guide* for details.



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## Chapter 3. Interface Modifications

### API Updates for ClevOS 3.17.1 have been referenced in the following documentation:

- REST API Developer Guide

A new API, **systemOidcConfiguration.adm** is added to the REST API. IBM COS Manager™ API access is enabled via an OpenID Connect provider that may provide a wide range of access policies and credential management features (e.g. requiring multi-factor authentication and enforcing password rotation).

The REST APIs **createAccount.adm** and **editAccount.adm** have a new value for the **accountType** parameter: **oidc**, which indicates that an external account exists on an OIDC provider.

A new parameter, **oidcUsername**, is added to the REST APIs **createAccount.adm** and **editAccount.adm**. When **accountType** is **oidc**, you can specify or modify, respectively, a username of an external account on an OIDC provider.

The REST API **createGroup.adm** has a new value for the **groupType** parameter: **oidc**, which indicates that an external group exists on an OIDC provider.

A new parameter, **claimValue**, is added to the REST API **createGroup.adm**. When the parameter **groupType** is set to **oidc**, you can specify the value of a group claim that identifies a group within a configured OIDC provider.

### API Updates for ClevOS 3.17.0 have been referenced in the following documentation:

- REST API Developer Guide

You can configure the Manager database backup on an S3 bucket using either the Manager UI or the REST API. The backup file can be uploaded to the specified endpoint bucket. If the backup was to an S3 bucket, the file must be transferred from the remote server to a local disk prior to restore (configured with the REST API **systemRestore.adm**), similar to using FTP for a Manager database backup.

A new **backupType** option, **s3Bucket**, was added to the REST API **systemBackupSettings.adm**. Further, the **backupType** option **remote** has been changed to **ftp**. Note that the API is backwards compatible and supports both the **ftp** and **remote** options.



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## Chapter 4. Resolved Issues

### Resolved issues in 3.17.1

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<i>Table 1. Resolved issues</i>	
<b>Issue</b>	<b>Description</b>
COS-93579	Resolved an issue preventing replication from creating replica versions on objects that contain transient versions.
COS-87895	Fixed an issue when fully populating a previously populated store and new drives will appear at the end of the namespace instead of their optimal position.

### Resolved issues in 3.17.0 February 2023 Maintenance

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<i>Table 2. Resolved issues</i>	
<b>Issue</b>	<b>Description</b>
COS-96766	Resolved an issue that could result in data inconsistency when performing frequent object overwrites and deletes in rapid succession on a storage pool utilizing the Zone Slice Storage (ZSS) engine.
COS-96086	Resolved an issue that would cause a Service API bucket creation request to fail when the optional <b>storage_location</b> parameter was not specified.
COS-93687	Resolved an issue that might result in a temporary period of I/O failures when initiating a system expansion or set removal.
COS-92520	Default configuration has been updated to minimize the occurrence of invalid Index re-balancing failures alerts.

### Resolved issues in 3.17.0 November Maintenance

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<i>Table 3. Resolved issues</i>	
<b>Issue</b>	<b>Description</b>
COS-94352	Resolved an issue where the ZSS write cache could potentially become inefficient resulting in high CPU utilization and performance impacts.
COS-94351	Resolved an issue where the ZSS slice deletion throttle for fanout was not being utilized when fanout metadata was missing.
COS-94347	Improved configuration options for better control of ZSS fanout metadata behavior.
COS-93483	Increased the number of connections between Slicestor <sup>®</sup> Devices from 1 to 4 to increase the network throughput for activities such as system expansion and rebuilding.
COS-93220	Improved several disk monitoring configuration options on Slicestor <sup>®</sup> Devices to allow for device tuning without requiring a process restart.
COS-92853	Resolved an issue that would result in the storage service crashing on Slicestor <sup>®</sup> Devices in the presence of invalid drive metadata.

<i>Table 3. Resolved issues (continued)</i>	
<b>Issue</b>	<b>Description</b>
COS-84446	Resolved an issue that could result in user I/O errors and/or increased I/O latencies when performing system expansion or set removal operations.
COS-82452	The upgrade directory containing the upgrade file persists across container restarts on Docker Manager instances.
COS-15189	The external-agents directory containing external agent bundles persists across container restarts on Docker Manager instances.

## Resolved issues in 3.17.0

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<i>Table 4. Resolved issues</i>	
<b>Issue</b>	<b>Description</b>
COS-90490	Resolved an issue that could result in a process crash on Accesser <sup>®</sup> Appliances or Slicestor <sup>®</sup> Devices experiencing a certain level of load.
COS-85995	Significant updates have been made to the ClevOS operating system. External agents that are not properly self-contained and have dependencies on operating system components may be impacted. It is recommended to verify external agent behavior as part of any upgrade activities.

## Chapter 5. Product Alert Notifications

IBM® clients with an IBM ID may sign up to receive product alert notifications that contain important information that may impact the use of the IBM Cloud Object Storage System™. In order to receive these notifications, clients need to subscribe to the "IBM Cloud Object Storage System™" product in [MyNotifications](#). The table below represents the alert notifications that are applicable while running this latest version of ClevOS™ at the time of this release note publication. For any questions regarding the content of these product notifications, contact IBM Support.

<b>Alert Notification Title</b>	<b>Impacted ClevOS™ Releases</b>	<b>Alert Notification Published Date</b>
<a href="#">Potential for a rare data inconsistency issue</a>	3.15.0 to 3.17.1	Feb 9, 2023
<a href="#">Discontinue use of IBM COS Insight™</a>	All ClevOS releases	Dec 1, 2022
<a href="#">Potential impact to IO performance on ZSS Slicestor devices</a>	All ClevOS releases	Nov 11, 2022
<a href="#">Multi-Manager communication error during upgrade</a>	Upgrade from a release prior to ClevOS 3.16.6.73	Nov 9, 2022
<a href="#">Device level API's required TLS cipher suite updated in ClevOS 3.16.6.75</a>	3.16.6.75 and future releases	July 13, 2022
<a href="#">Slicestor® disk model WUH721818AL4200 firmware issue</a>	All ClevOS releases	Apr 29, 2022
<a href="#">Software Signature Verification issue impacting ClevOS™ upgrades</a>	3.15 and 3.16	Feb 18, 2022
<a href="#">Format updated in API response for multipart copy.</a>	3.15.8.97 and future releases	Dec 2, 2021
<a href="#">IBM Cloud Object Storage On-Premise Adopts Continuous Delivery Software Support Lifecycle (Updated for 3.17.0).</a>	3.16.0, 3.17.0	Oct 29, 2021
<a href="#">Performance implications of non-homogenous COS storage pool expansions</a>	All ClevOS releases	Jun 30, 2021
<a href="#">API changes related to S3 Object Versioning</a>	3.15.7 and future releases	Apr 19, 2021
<a href="#">Issue with adding multiple drives in a IBM COS Slicestor® appliance</a>	All ClevOS releases	Jul 20, 2020
<a href="#">A firmware issue can cause IBM COS Gen2 HW nodes to fail to boot up</a>	ClevOS independent	Jun 18, 2020

Table 5. Product Alert Notifications for the IBM Cloud® Object Storage System (continued)

Alert Notification Title	Impacted ClevOS™ Releases	Alert Notification Published Date
<a href="#"><u>Java™ version incompatibility preventing IPMI access</u></a>	ClevOS independent	Mar 12, 2018
<a href="#"><u>IPMI Configured via nut Command Does Not Persist on Device Restart</u></a>	ClevOS independent	Jun 27, 2017
<a href="#"><u>Drive-managed Shingled Magnetic Recording (SMR) drives are not approved and should not be used with named-object protocol workloads</u></a>	ClevOS independent	Mar 16, 2017
<a href="#"><u>IBM COS Slicestor® 2584 Fails to Attach Drives</u></a>	ClevOS independent	Feb 2, 2017



## Chapter 6. Known issues

*Table 6. Known issues*

<b>Issue</b>	<b>Failing Condition</b>	<b>Disposition</b>
COS-58128	DLM cannot process more than 16 hot-swap events at once.	This issue will be fixed in a future release.
COS-50579	There is a known issue where slice data being reallocated from one Slicestor device to another would not be appropriately removed from the source Slicestor device if the reallocation process was erroneously marked as complete."	This issue still exists in 3.14.3 because the change was reverted in the latest fix.
COS-11201	In the Event Console of the Manager User Interface, the event details section for failing disk migration events contains a parameter that is called Migration Progress. However, it is not clear what this value represents.	This value corresponds to the percentage of failing disk migration that is complete.
COS-11355	Replacing a failed drive with another failed drive results in an inconsistent view on the Manager User Interface. On the Monitor Device page, in the "Summary of device health" section, both the replaced failed drive and the new failed drive are shown. The "Drive Information and Actions" view of the drive layout shows the replaced failed drive. On the Maintenance page, the FRU report contains the replaced failed drive.	Perform another replacement of the failed drive with a good drive.
COS-13575	The "stop migration" operation for failing disk migration on the Manager User Interface (UI) can take ~20 seconds to complete after being initiated by the user. The button continues to be enabled during this time. This issue exists for dispose and reset disk operations as well.	Do not hit the button again until the operation completes. If the drive stays in the same state for more than 20 seconds, perform a refresh of the page. If the drive continues to stay in this state, follow the recommended action that is provided in the Manager Administration Guide under disk lifecycle management.
COS-10031	When resuming a drive in the DIAGNOSTIC state from the Manager User Interface, it can take ~20 seconds to complete. The resume button is not disabled during this time.	Do not hit the resume button until the operation completes. If the drive stays in the DIAGNOSTIC state for more than 20 seconds, perform a refresh of the page. If the drive continues to stay in this state, follow the recommended action that is provided in the Manager Administration Guide under disk lifecycle management.

Table 6. Known issues (continued)

Issue	Failing Condition	Disposition
COS-10445	When using the storage command from the localadmin shell on a Slicestor® device, it is possible to resume all drives that are currently in the DIAGNOSTIC state. However, in some cases , this process can take too long, which will cause the command to return an error code -15 due to a timeout.	Despite the error, the resume process is continuing in the background. The storage list command can be used to monitor the progress of resume process.
COS-13504	When failing a quarantined drive, it is possible that after data has been migrated off the failing drive, the Manager event console will report that no data migration was attempted.	No action is required. Despite the event description, data migration will always be attempted unless the user specifically chooses to skip migration via the localadmin shell storage command.
COS-23962	Vault quotas are static and do not update when storage pool capacities change. If a system expansion, set replacement, or set removal is performed on the storage pool, vault quotas for any vaults on that pool will not update to consider the new capacity.	The user-defined vault quotas work as expected. However, they cannot be consistent with the current storage pool capacity. For example, a vault quota can be higher than total storage pool capacity after a set removal.

## Upgrading and Installation

Table 7. Upgrading and Installation

Issue	Failing Condition	Disposition
	Nothing to report.	

## Container

Table 8. Container

Issue	Failing Condition	Disposition
COS-15401	If a user attempts to create a management vault by using "manual configuration" (accessed through the Configure Management Vault page) based on an existing vault template, management vault creation fails with the following message: "Cannot create a management vault from this template. It is deployed to access pools with standard vaults"	Use the "automatic configuration" available on the Configure Management Vault page.

## Alerting and Reporting

Table 9. Alerting and reporting

Issue	Failing Condition	Disposition
	Nothing to report.	

## System Behavior

Table 10. System behavior

Issue	Failing Condition	Disposition
	Nothing to report.	

## Storage Pools

Table 11. Storage pools

Issue	Failing Condition	Disposition
COS-2642	On the *Monitor Storage Pool Page, the <b>Reallocation Progress</b> graph, which displays historical data, is inaccurate when a device is down or statistics are not collected for a window of time.	The <b>Data Reallocation</b> progress bar, available at the top of the *Monitor Storage Pool Page, is always accurate. This view reflects the status and should be used to monitor progress of the data reallocation activity.

## Data Evacuation

Table 12. Data evacuation

Issue	Failing Condition	Disposition
	Nothing to report.	

## System Configuration

Table 13. System configuration

Issue	Failing Condition	Disposition
	Nothing to report.	

## Deleting objects

Table 14. Deleting objects

Issue	Failing Condition	Disposition
	Nothing to report.	

## Manager Web Interface

Issue	Failing Condition	Disposition
COS-10031	When resuming a drive in the DIAGNOSTIC state from the Manager User Interface, it may take ~20 seconds to complete. The resume button is not disabled during this time.	Do not hit the resume button until the operation completes. If the drive stays in the DIAGNOSTIC state for more than 20 seconds, perform a refresh of the page. If the drive continues to stay in this state, follow the recommended action that is provided in the Manager Administration Guide under disk lifecycle management.
COS-23764	Upon network failure while going through the one time setup process in the manager, a network error page appears. When the network comes back, reload the page, at which point an internal server error page appears in some scenarios.	Log out of the internal server error page and log back into the manager, which will take you through one time setup again.

## Vaults

Issue	Failing Condition	Disposition
	Nothing to report.	

## Vault Mirrors

Issue	Failing Condition	Disposition
	Nothing to report.	

## Vault migration

Issue	Failing Condition	Disposition
COS-12442	When a vault migration finishes the work that is contained in its TODO queue, it kicks off a process to calculate the exact count of the number of objects that are migrated as part of the migration. This process of calculating the exact size is performed by each device in the target pool, and can take a long time to complete for large migrations.	

# Chapter 7. Supported Hardware Platforms

## IBM Cloud Object Storage Appliances

*Table 19. Minimum Version of ClevOS Compatible with IBM Hardware Platforms*

Product Name	Machine Type (1Yr/3Yr Warranty)	Model	Minimum ClevOS
IBM COS Accesser® 3105	3401/3403	A00	3.8.1
IBM COS Accesser® 4105	3401/3403	A01	3.8.1
IBM COS Accesser® 3110	4958/4957	A10	3.14.4
IBM COS Manager™ 3105	3401/3403	M01	3.8.1
IBM COS Manager™ 3110	4958/4957	M10	3.14.4
IBM COS Slicestor® 2212	3401/3403	S00	3.8.1
IBM COS Slicestor® 2448	3401/3403	S01	3.8.1
IBM COS Slicestor® 3448	3401/3403	S02	3.8.3
IBM COS Slicestor® 2584 (AP-TL-1)	3401/3403	S03	3.8.1
IBM COS Slicestor® 2584 (AP-LS-1)	3401/3403	S03	3.13.1
IBM COS Slicestor® 2212A	3401/3403	S10	3.10.0
IBM COS Slicestor® 12	4958/4957	C10/J10	3.14.4
IBM COS Slicestor® 53	4958/4957	C10/J11	3.14.4
IBM COS Slicestor® 106	4958/4957	C10/J12	3.14.4
IBM COS Slicestor® 92 IBM Cloud Object Storage System™	4958/4957	C10/J15	3.15.5

**Note:** □ Requires RPQ

## Hewlett Packard Enterprise

*Table 20. Minimum Version of ClevOS Compatible with Hewlett Packard Enterprise Hardware*

Appliance	Model	Minimum ClevOS
Manager Appliance	DL360P Gen8	3.2.1
Manager Appliance	DL360 Gen9	3.5.0
Manager Appliance	DL380 Gen9	3.5.0
Manager Appliance	DL360 Gen10	3.14.0
Accesser® Device	DL360P Gen8	3.2.1
Accesser® Device	DL360 Gen9	3.5.0
Accesser® Device	DL360 Gen10	3.14.0
Accesser® Device	DL380 Gen9	3.5.0

Table 20. Minimum Version of ClevOS Compatible with Hewlett Packard Enterprise Hardware (continued)

Appliance	Model	Minimum ClevOS
Slicestor® Device	SL4540 Gen8	2.9.0
Slicestor® Device	DL380 Gen9	3.5.0
Slicestor® Device	Apollo 4200 Gen9	3.6.0
Slicestor® Device	Apollo 4200 Gen10	3.14.10
Slicestor® Device	Apollo 4510 Gen9	3.6.0
Slicestor® Device	Apollo 4510 Gen10	3.14.0
Slicestor® Device	Apollo 4530 Gen9	3.6.0

## Seagate

Table 21. Minimum Version of ClevOS Compatible with Seagate Hardware

Appliance	Model	Minimum ClevOS
Seagate OneStor®	AP-2584 1 AP-TL-1	3.4.2
Seagate Exos®	AP 5U84-Laguna Seca	3.15.0

## Cisco

Table 22. Minimum Version of ClevOS Compatible with Cisco Hardware

Appliance	Model	Minimum ClevOS
Cisco Slicestor® Device	UCS C3260	3.7.4
Cisco Slicestor® Device	UCS S3260 (Single Node)	3.12.0
Cisco Slicestor® Device	UCS S3260 (Dual Node)	3.12.0
Cisco Slicestor® Device	UCS S3260 M5 (56 drive configuration)	3.13.1
Cisco Slicestor® Device	UCS S3260 M5 (60 drive configuration)	3.14.3
Cisco Manager Appliance	UCS C220 M4	3.12.0
Cisco Accesser® Device	UCS C220 M4	3.12.0
Cisco Manager Appliance	UCS C220 M5	3.13.6
Cisco Accesser® Device	UCS C220 M5	3.13.6
Cisco Slicestor® Device	UCS C240	3.13.6

## Dell

Table 23. Minimum Version of ClevOS Compatible with Dell Hardware

Appliance	Model	Minimum ClevOS
Dell Slicestor® Device	DSS 7000	3.10.1

Table 23. Minimum Version of ClevOS Compatible with Dell Hardware (continued)

Appliance	Model	Minimum ClevOS
Dell Slicestor® Device	R740xd w/ HDD Support	3.14.1
Dell Slicestor® Device	R740xd w/ NVMe Support	3.14.2
Dell Slicestor® Device	R740xd2	3.14.9

## Lenovo

Table 24. Minimum Version of ClevOS Compatible with Lenovo Hardware

Appliance	Model	Minimum ClevOS
Lenovo Manager Appliance	X3550 M5	3.10.1
Lenovo Accesser® Device	X3550 M5	3.10.1
Lenovo Manager Appliance	X3650 M5	3.10.1
Lenovo Manager Appliance	SR630	3.13.6
Lenovo Accesser® Device	SR630	3.13.6
Lenovo Slicestor® Device	SR650	3.13.6

## Quanta Cloud Technology (QCT)

Table 25. Minimum Version of ClevOS Compatible with QCT Hardware

Appliance	Model	Minimum ClevOS
QCT Manager Appliance	QuantaGrid D51PH-1ULH	3.13.4
QCT Accesser® Device	QuantaGrid D51PH-1ULH	3.13.4
QCT Slicestor® Device	QuantaGrid D51PH-1ULH	3.13.4





## Chapter 8. Incompatible Hardware and Firmware with ClevOS

**The hardware components running firmware revisions listed below are incompatible with ClevOS due to the possibility of unexpected behavior.**

**Note:** If you have any hardware on this list running the firmware revisions listed, please contact L3 support immediately to create an upgrade plan. You can determine your firmware revisions using the Firmware Report that is found under the Maintenance menu.

### Broadcom

Table 26. Broadcom Hardware and Firmware Incompatibility with ClevOS

Type	Model	Firmware affected
RAID Controller	Broadcom MegaRAID 9361-8i	4.650.00-6121

### Hewlett Packard

Table 27. HP Hardware and Firmware Incompatibility with ClevOS

Type	Model	Firmware affected
RAID Controller	HP-SL4540 Smart Array	6.64
iLO	HPE SL4540 Gen 8	2.30

### IBM Cloud Object Storage Appliances

Table 28. IBM COS Hardware and Firmware Incompatibility with ClevOS

Type	Model	Firmware affected
USM	IBM COS Slicestor®2584 (AP-TL-1) 3401/3403 S03	4.1.7
BMC	A3105, A4105, M3105, S2212A, S2448	1.0.125362, 1.0.135362
BMC	A10,C10,M10	< .97
CPLD	A10,C10,M10	< 1818

Table 29. IBM COS Drive Feature Hardware and Firmware Incompatibility with ClevOS

Model Affected	Feature	Capacity	Part manufacturer/model	Firmware affected
J15	AL4D	18TB	WD/WUH721818AL4200	J6Y2

**Note:** 18TB drives of model WUH721818AL4200 running J6Y2 firmware may be quarantined at elevated rates and require a device power cycle to resume. This issue is resolved in firmware version J6Y3.

## Seagate

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Table 30. Seagate Hardware and Firmware Incompatibility with ClevOS

Type	Model	Firmware affected
HDD	Seagate ST1000NM0033-9ZM173	SN04

## Supermicro

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Table 31. Supermicro Hardware and Firmware Incompatibility with ClevOS

Type	Model	Firmware affected
BMC	Supermicro SSG-6048R- E1CR60N	3.60

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