



**Rubrik CDM
Release Notes
Version 6.0
755-0171-01 Rev A13
January 10, 2022**

rubrik®

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Introduction

These release notes contain supplemental information about the General Availability release of Rubrik CDM version 6.0.

New features

Rubrik CDM version 6.0 has new features.

Feature	Description
Improved performance and larger workloads	
Large File Sharding	For file server workloads with small individual files, parallelized fetching of the files allows efficient and fast backups. For specialized workloads where individual files can range from hundreds of gigabytes to terabytes in size, the files are now sharded into multiple smaller chunks to allow for parallel ingest and restore.
Oracle Advanced Cloning Options	Oracle Advanced Cloning Options (AOC) offer the following improvements: <ul style="list-style-type: none">• Intuitive ACO UI allows easy data entry and validation of ACO parameters• Option for Pre/Post recovery scripts for managing additional tasks
Support for Oracle Data Guard backup from standby	Rubrik supports Oracle Active Data Guard environments protection through the following improvements: <ul style="list-style-type: none">• Enhanced SLA Domain automation for centralized management of primary and standby databases through Data Guard groups• Ability to offload database backups to a standby database• Failover and switchover awareness for Data Guard environments
Faster Hyper-V backups	Hyper-V backup and restore performance is improved and storage space is reduced through cross-deduplication.
Additional enterprise features	
Multifactor Authentication	Multifactor Authentication or TOTP-based two-step verification is critical protection against compromise due to stolen login credentials. Multifactor Authentication is an implementation of two-factor authentication (2FA) for local or LDAP users. TOTP-based two-step verification uses a standard mobile authentication application from Google, Microsoft, Okta, or other vendors to provide a single-use numeric code that serves as the second authentication factor.
Adaptive throttling of backups	Adaptive throttling reduces performance degradation on older or slower NAS hosts by measuring the latency during a file backup. If high latencies are detected, Rubrik will throttle down ongoing file backups to reduce the load on the host. If the degradation was caused by the Rubrik backup load, then reducing the concurrent file access should restore performance to an acceptable state.
CDP 24-hour log retention	CDP log retention is increased from 4 hours to 24 hours.
SQL Server host-level configurability	The most common SQL options are configurable at a SQL host level through Rubrik Support in addition to the previously available Rubrik cluster level.

Feature	Description
In-place recovery for virtual machines	VMware virtual machines are recovered through preserving the virtual machine identity and transferring only the delta changes (reverse CBT) by leveraging the existing data on the primary storage.
NetApp SnapMirror support	Rubrik supports a NetApp read-only SnapMirror copy as the source of data when backing up NetApp NAS.
Health Monitor v1	Health Monitor v1 supports on-demand health checks. If any failures are detected, potential causes and resolution steps are provided.
Rubrik cluster operation improvements	Rubrik cluster operations improve supportability and stability of Rubrik clusters.
Lower cloud costs	
Tiering existing archived snapshots	To lower cloud costs, tier previously archived snapshots from hot to cold storage. For Azure, archived snapshots are moved from Azure Hot or Cool storage to Archive storage. AWS Standard S3 or S3 Standard-Infrequent Access snapshots are moved to Glacier or Glacier Deep Archive.
Cloud Cluster Elastic Storage	Cloud Cluster Elastic Storage (Cloud Cluster ES) is a new Cloud Cluster that directly writes backups to AWS S3 or Azure Object Store to significantly reduce the running cost of Cloud Cluster instances in AWS or Azure.
Extended cloud protection	
Archiving to Azure Immutable Blob Storage	To meet data retention requirements and mitigate the risk of data loss, Rubrik can now write archival data to Azure Immutable Blob Storage utilizing a time-based container-level retention policy prohibiting archives from being modified or deleted.
Rubrik Cloud Cluster availability on Azure Marketplace	Rubrik Cloud Cluster can be discovered and launched from Azure Marketplace.
User-defined tags for Cloud Compute resources	Defines custom tags to be applied to all resources created by Rubrik with CloudOn and Archive consolidation. These custom tags are applied to temporary compute instances, EBS volumes, EBS snapshots, and images created by Rubrik.
Automated and intelligent backup operations	
Cloud Cost Insights	Cloud Cost Insights is supported by CloudOut to provide instantaneous cloud cost insights during SLA creation or edit to configure cost-optimal policies. Rubrik CDM provides clear recommendations on when to enable or disable consolidation and tiering policies and to compare costs during SLA Domain edits. This feature is through the Rubrik REST API.
Intelligent Oracle archive log deletion	Rubrik deletes Oracle archive logs after successful log backups if the first log deletion attempt fails.
Hardware enhancements	
Simplified installation of hardware appliances	Simplified installation of hardware appliance provides the following benefits: <ul style="list-style-type: none"> Increased flexibility by providing multiple CDM software versions preloaded on the nodes from factory to start on the latest releases. There are at least four Rubrik CDM releases to select from. Faster self-service UI driven process, which is easier to install without Rubrik engagement or through remote support from Rubrik Professional Services or through a Rubrik partner at the time of bootstrap.

Feature	Description
CLI enhancements	
Support for hostname changes	Hostnames can be edited through the Rubrik CLI.
Bulk node remove	Bulk node removal is supported through the Rubrik CLI.

Known issues

Some known issues exist for Rubrik CDM 6.0.

Ticket	Issue
CDM-282664	Spurious alert notifications regarding a policy failure in time shift detection can occur as frequently as every five minutes for each node in a Rubrik cluster. These alerts require no action.
CDM-280280	The Nutanix Live Mount feature has the following known issues. <ul style="list-style-type: none"> Write operations to a Nutanix Live Mount that uses a floating IP address fail after migrating the floating IP to another node. The write operation causes SDFS errors and the mounted virtual machine becomes unresponsive. Any other I/O operation after the write operation will also fail. As a workaround, use a Live Mount with optional migration. Nutanix mounts are not counted in the Dashboard page total mount count. Deleting the external repository used for the Live Mount can fail when the deletion is attempted while the unmount is in progress. Customer automation is not supported.
CDM-263878	Refreshing an Oracle database does not affect relic databases.
CDM-262635	When an AppFlows Blueprint uses a VMware Cloud instance as a recovery target, specifying vsanDatastore as the failover target datastore results in test and actual failover operations failing due to permissions issues. Using workloadDatastore as the failover target datastore works normally.
CDM-261417	In Rubrik CDM 6.0.0, the Rubrik CLI cluster command, <code>vlan_segregation_feature_control</code> , is not functional.
CDM-261364	When initiating a Live Mount or an Instant Recovery of a VMware virtual machine through the Rubrik CDM web UI, a new Select Networks step is added. VMware virtual machines using the Instantly Recover option must select the appropriate production network in the Select Networks step to ensure the Instantly Recover virtual machine is connected to the correct network.
CDM-246043	When a protected object is moved, the SLA Domain policy does not keep the original SLA Domain setting but inherits the settings of the new location. Settings lost through inheritance can include Retention Locks on the SLA Domain or loss of VMware tag settings. To work around this issue, any protected objects that are moved should have the SLA Domain settings reset to the original settings.
CDM-243864	A Windows virtual machine restored through a mount point to the original location might fail. To work around the issue, restore the virtual machine to the specified mount point.

Release 6.0.2 new features

Rubrik CDM version 6.0.2 includes new features.

New feature	Description
AHV exclude disk	Individual virtual disks can now be excluded from Nutanix virtual machine backups.
Nutanix/AHV Live Mount	Customers can create a Live Mount from a snapshot of a Nutanix virtual machine. Such a Live Mount can also migrate to a Nutanix storage container.
Oracle RAC Backup Distribution	Backup operations from a RAC to a Rubrik cluster can now use all nodes on the cluster.
Selective Throttling	Replication throttling can be overridden on a specific network relationship. Without this feature, throttling replication network traffic on a cluster, throttles all outgoing traffic from the cluster to all replication targets. This feature enables throttle overrides for replication to specific targets.
RHEL/SUSE on PowerPC fileset support	PowerPC hosts running the RHEL or SUSE Linux distributions now support filesets.
Nutanix segmented data services support	Nutanix virtual machines can use a segmented volumes network to isolate Rubrik backup traffic to a separate network.
AHV pre and post backup scripts	AHV virtual machines now support scripts to run before and after taking a backup snapshot.
AWS S3 PrivateLink endpoint support	Enables access to specific S3 API endpoints for archiving, overriding the default endpoints determined by region selection.

Version 6.0.2-p2 fixes

Rubrik CDM version 6.0.2-p2 includes fixes.

Ticket	Summary of issue
CDM-287177	Fileset backup jobs fail intermittently due to an error in the agent server.
CDM-286395	Updates the Apache Log4j reporting component used by Rubrik CDM to version 2.17.0.
CDM-280867	Syslog messages incorrectly include entire stack traces for specific error conditions instead of concise error messages.

Version 6.0.2-p1 fixes

Rubrik CDM version 6.0.2-p1 includes fixes.

Ticket	Summary of issue
CDM-285447	Updates the Apache log4j reporting component used by Rubrik CDM to version 2.16. The previous version of log4j was discovered to have a potentially exploitable vulnerability.
CDM-284996	Upgrading a Rubrik cluster to CDM version 6.0.2 results in automatic redirection to Polaris onboarding instead of continuing to the CDM web UI.

Ticket	Summary of issue
CDM-284012	Cloud Clusters hosted on Azure cannot upgrade to CDM version 6.0.2.
CDM-283404 SPARK-86369	NAS Direct filesets cannot be analyzed by Radar.
CDM-282664	Spurious time shift alerts due to the time shift detection policy not ignoring timestamp jitter under 10 seconds.
CDM-282641	After attaching a new disk, invoking the disk setup procedure fails.
CDM-282640	Archival upload jobs can become stuck when a snapshot in the upload job expires while the upload is ongoing.
CDM-282472	Isilon 9.2 changed authentication requirements from basic auth to session token, which prevents backup of NAS shares.
CDM-281812	An error in date-persistence logic occasionally causes backup jobs to remain in the Finishing state indefinitely.
CDM-280891	Restore for sharded files fails.
CDM-280797	Backups fails during the metadata scan phase with a Device or Resource busy error.
CDM-280281	Unable to add Nutanix host with API integration.
CDM-280030	Spurious SSL errors occurring between SQL Server hosts and the Rubrik cluster resulted in dropped connections and backup failures.
CDM-279187	Upgrading to Rubrik CDM version 6.0 or newer fails when root-sdfs is not the last logical volume in the root volume group.
CDM-277971	NFS archival location connectivity checks do not complete cleanup, leading to errors in the connectivity check and intermittent disconnection of the NFS archival location.
CDM-277472	Creating a Live Mount in the root partition mounts the root partition as read-only, causing system instability.
CDM-276822	Snapshots for cloud-native virtual machines do not appear in the web UI.
CDM-275626	Metadata inconsistencies for archived snapshots found when refreshing reader cluster after upgrade of blob storage method.
CDM-274261	Rubrik Bolt instances on AWS fail to launch, preventing jobs to take on-demand snapshots from succeeding.
CDM-273189	NFS archival location connectivity checks do not complete cleanup, leading to errors in the connectivity check and intermittent disconnection of the NFS archival location.
CDM-269886	Snapshot download from Amazon Glacier archival location fails due to expiration of Glacier retrieval jobs

Version 6.0.2 fixes

Rubrik CDM version 6.0.2 includes fixes.

Ticket	Summary of issue
CDM-280692	Existing Oracle databases discovered as dataguard groups are taking full backups after upgrade to 6.0.1

Ticket	Summary of issue
CDM-279187	Upgrading to Rubrik CDM version 6.0 or newer fails when root-sdfs is not the last logical volume in the root volume group.
CDM-278753	Upgrading slim cloud cluster nodes to Rubrik CDM 6.0 or later results in unstable nodes due to insufficient machine resources.
CDM-278376	Administrators of tenant organizations cannot create notification rules for the organization.
CDM-278113	Filter status for compute resources cannot be disabled from the web UI.
CDM-276701	Log backup jobs report missing sequence numbers for backup chains.
CDM-276453	Upgrading to 6.0.1 occasionally fails due to missing fstab entries.
CDM-274418	When restoring a virtual machine with an archived tag, and the "Remove Tags" checkbox is not selected, the restore job (Live mount, export, or instant recover) fails with an internal error.
CDM-274373	Node IPMI settings do not revert to DHCP after a reset.
CDM-274273	Deleting a reader archival location can fail when the archival location contains snapshots under a retention lock or that were protected by an SLA Domain with a retention lock at time of upload.
CDM-274231	When a protectable object has a large number of active snapshots, API response messages can grow larger than the default limit, causing failed API calls for that object.
CDM-274144	When a log snapshot job fails, the recovery chain for a protected Oracle database breaks.
CDM-273993	Checks for clock skew can take place before nodes have verified correct timekeeping, resulting in an incorrect baseline for measuring time shift.
CDM-273626	Temporary files from failed reporting jobs are not removed, causing a buildup of stale files that degrades performance of reporting jobs.
CDM-273514	Privileges to administer MSSQL data objects cannot be successfully granted.
CDM-273218	Glacier locations with an active vault lock can be marked as disconnected.
CDM-273188	A snapshot on a source archival location can expire before the snapshot fingerprint is cached. This can cause Archival Migration jobs to loop indefinitely.
CDM-272989	Metadata can persist after a purge, leading to upload job failure.
CDM-270650	Persistence retries for VMware objects can lead to cancellation of replication jobs.
CDM-270615	Backup jobs may fail intermittently with the exception of "snapshot random data verification failed".
CDM-270598	After upgrading to Rubrik CDM version 6.0, an Oracle database backup job for a dataguard database can get stuck in the FINISHING state during the EXPOSE task.
CDM-269436	Rubrik nodes fail because memory limits were set on Rubrik services inadvertently.
CDM-269212	Using the rkazurecli_cloud_compute.ps1 script to configure an Azure cloud account can fail with the error message 'CloudException "The role assignment already exists"'.
CDM-268988	Upload jobs to S3 locations using an SLA Domain configured with "Glacier Deep Archive Storage Class Only" can have poor upload performance.
CDM-268983	The web UI has decreased performance during VMware export, Live Mount, or Instant Recovery operations.

Ticket	Summary of issue
CDM-268859	When a server is forcing the use of SMB version 1, a restore operation configured with SMB version 2 restores to an internal directory instead of the selected mount point.
CDM-268686	In-place Recovery for VMware Cloud virtual machines fails unless the In-place Recovery operation uses NBDSSL.
CDM-268685	Conversion jobs fail after enabling default EBS encryption.
CDM-267576	A vApp backup job can fail when boot options are not successfully retrieved.
CDM-267257	Instant Recovery operations can fail when the storage profile of the target vApp is a datastore cluster instead of a single datastore.
CDM-267138	Jobs cannot be canceled until they move into the acquiring or running states. Archival jobs that have no snapshots to upload never exit the queued state and cannot be canceled.
CDM-266859	Archival Refresh or Recover jobs can become stuck if the service is interrupted.
CDM-265793	Discovery or delete host jobs fail when the Oracle oracle_db table is very large.
CDM-265648	The SQL Server object details page does not properly display Last Recovery Point when a Full recovery model database is switched to read-only.
CDM-265425	IPv6 networking can fail to come up after a kernel reset.
CDM-265318	Replacement hard drives for some Dell Rubrik hardware nodes can be of a larger capacity than specified, resulting in errors due to mismatched disk capacities on the node.
CDM-265299	File proliferation during upgrades can lead to inode exhaustion on the system.
CDM-264754	A device with a long read time from an archival location can be erroneously cleaned up as stale.
CDM-264413	Renaming the checkpoint fails if the virtual machine name contains the '&' character, leading to backup failure.
CDM-264407	Log backups on a standby database can fail when multiple threads exist.
CDM-264237	No user-friendly error message is shown to the user when VMware datastore is out of capacity.
CDM-263878	A same-host restore operation that involves a large number of databases can take a substantial amount of time.
CDM-263498	Conversion fails when default EBS encryption is enabled.
CDM-262659	When performing cluster prechecks, resolve the bad JobContext errors and allow the PERIODIC_UPGRADE_PRECHECKS_GLOBAL to complete quietly.
CDM-260743	Indexing jobs fail after a cluster upgrade when the previous index directory is deleted.
CDM-260083	Child virtual machines for a vCD vApp can have PULL_REPLICATION jobs remain in the QUEUED state indefinitely.
CDM-258501	Radar tasks fail on pass-through clusters.
CDM-257052	Hierarchy search API does not prioritize exact matches over substring matches.
CDM-252748	An NFS share with a file path that contains spaces cannot be added to the cluster.
CDM-250105	Archival traffic to an S3-compatible location can go through a global proxy even when the bypass-proxy option is selected.

Ticket	Summary of issue
CDM-249612	SQL Server export does not properly detect available space when using the advanced method with overwrite.
CDM-248612	Indexing issues can cause spurious Radar alerts.
CDM-244986	When a job finishes immediately before a cluster upgrade, the job is not pruned after the upgrade.
CDM-188005	Snapshot index and index cache sizes are not reported accurately.
CDM-171808	The disk UUIDs returned by Nutanix do not match the disk UUIDs in the virtual machine or snapshot details, leading to disk exclusion not working.

Release 6.0.1 new features

Rubrik CDM version 6.0.1 includes new features.

New feature	Description
Fileset sharding	For file server workloads with small individual files, parallelized fetching of the files allows for efficient and fast backups. For specialized workloads where individual files can range from hundreds of gigabytes to terabytes in size, the files are now sharded into multiple smaller chunks to allow for parallel ingest and restore.
Expanded Rubrik Edge capacity	Rubrik Edge expands support for up to 30 TB of disk capacity.
Bootstrap simplification	CDM hardware appliance bootstrap page has additional information about discovered nodes in the Rubrik CDM web UI to make hardware installs easier. New flagging of network issues makes troubleshooting easier.
Secure SSH logins	CLI logins via SSH may now be protected with SSH keys for added security.
API security	API security creates a default blocklist of APIs for critical changes to data (examples include retention and SLA Domain policies). APIs are unblocked or blocked based on administrative policy.
TOTP as two-factor adoption enhancements	Multifactor Authentication or TOTP-based two-step verification is an implementation of two-factor authentication (2FA) for local or LDAP users. TOTP-based two-step verification uses a standard mobile authentication application from Google, Microsoft, Okta, or other vendors to provide a single-use numeric code that serves as the second authentication factor.
Oracle archive log restores through Log Mount	Log Mount allows granular recovery of archive logs by mounting only the required log backups between two recovery points. Archive logs are restored from the mounted log backups using RMAN commands.
vSphere Metro Storage Cluster support	vSphere Metro Storage Cluster (vMSC) supports failover between sites. After failover, associated virtual machines only trigger incremental backups as opposed to full backups.
vCD 10.3 support	vCD 10.3 is supported.
Nutanix NAS integration	Nutanix AFS file shares expose an API to create an on-demand point-in-time snapshot similar to other NAS hosts. When taking a backup, Rubrik uses the API to create a snapshot and backup from the snapshot rather than from the live file system. This guarantees a consistent point-in-time backup for Nutanix AFS NAS.

Version 6.0.1-p2 fix

Rubrik CDM version 6.0.1-p2 includes a new fix.

Ticket	Summary of issue
CDM-278314	General security improvements.

Version 6.0.1-p1 fixes

Rubrik CDM version 6.0.1-p1 includes fixes.

Ticket	Summary of issue
CDM-276701	Log backup jobs report missing sequence numbers for backup chains.
CDM-276453	Upgrading to 6.0.1 occasionally fails due to missing fstab entries.
CDM-274418	When restoring a VM with an archived tag, and the "Remove Tags" checkbox is not selected, the restore job (Live mount, export, or instant recover) fails with an internal error.
CDM-274373	Node IPMI settings do not revert to DHCP after a reset.
CDM-270650	Persistence retries for VMware objects can lead to cancellation of replication jobs.
CDM-270615	Backup jobs may fail intermittently with the exception of "snapshot random data verification failed".
CDM-269436	Rubrik nodes fail due to incorrect memory limits on Rubrik services.
CDM-259222	An HPE DL360 cluster cannot be upgraded to Rubrik CDM 6.0.0.
CDM-188005	Snapshot index and index cache sizes are not reported accurately.

Version 6.0.1 fixes

Rubrik CDM version 6.0.1 includes fixes.

Ticket	Summary of issue
CDM-267869	In the Rubrik CDM web UI, the VMware VM Recovery page (Export, Live Mount, and Instant Recovery) show no compute resources available when logging into organization UI, if the organization is assigned with ESXi hosts and/or Compute Clusters and not vCenter.
CDM-267863	A Live Mount for a VMware virtual machine to a resource pool without using network selection may fail with an error, "The resource X is in use" if the original virtual machine's network is configured to use vSphere distributed switch (DVS).
CDM-267270	The cloud storage connectivity checker sometimes fails during bootstrap on Rubrik Cloud Cluster Elastic Storage.
CDM-266857	If the LDAP Server configuration is changed and multifactor authentication is enforced, multifactor authentication has to be disabled and enabled, or multifactor authentication is disabled.
CDM-266730	If a VMware UUID VMDK is not configured in vSphere, VMware backups can fail.

Ticket	Summary of issue
CDM-266381	After a Rubrik CDM upgrade, custom report update jobs might fail.
CDM-266378	VMware virtual machine upload and backup jobs for virtual machines sequentially instead of in parallel.
CDM-266300	There is a compliance status discrepancy for recent snapshots, when the snapshot is expired locally or instant archival is configured.
CDM-266280	If a SQL Server log backup job is running during a Rubrik CDM 6.0.0 upgrade, the job might fail.
CDM-266109	VMware snapshots are incorrectly expired if virtual machines are linked manually.
CDM-266085	A customized task report containing the column StartMethod/Node Name fails to complete.
CDM-265796	Oracle Live Mount fails with the error message "Neither racId nor oracleHostId set for database".
CDM-265457	After a Rubrik CDM upgrade, VMware virtual machines with the RBS registered may show it as disconnected.
CDM-265453	For Instant Recovery Network Selection for the newly created virtual machine might not connect to the expected network.
CDM-265415	A VMware virtual machine backup can fail for 64 KB unaligned VMDKs.
CDM-265315	Oracle restore jobs were failing due to the Oracle Home precheck when the Oracle Home was mounted over NFS.
CDM-265064	A failed index job causes the virtual machine to fail to restore.
CDM-264754	A VMware virtual machine failed a recovery operation from archival.
CDM-264509	If VMware Tools are not installed on a virtual machine, there is no warning icon that "VMware tool not installed" on the VM page.
CDM-264494	A stale entry in jobInstance in a Microsoft SQL log backup can cause a backup job to fail.
CDM-264266	Tiering jobs might fail for objects for snapshots protected with deleted SLA Domains.
CDM-264254	An Oracle database no longer appears on the Rubrik CDM web UI after manually refreshing the database using an RMAN duplicate.
CDM-263877	After a Rubrik CDM upgrade, deleted local user accounts reappear.
CDM-263748	VMware Backup followed by a previous In-Place Recovery job, fails with "access error" if "keepvSphereSnapshotPostRecovery" option is set.
CDM-263557	Cloud conversion might fail for snapshots tiered to a Cold storage tier.
CDM-263552	Oracle backup fails on a host with the umask 077 permission reset. RMAN is unable to write to the script log.
CDM-262659	When performing cluster prechecks, resolve the bad JobContext errors and allow the PERIODIC_UPGRADE_PRECHECKS_GLOBAL to complete quietly.
CDM-262643	Using a custom configuration for chiselServer causes the Support Tunnel to fail.
CDM-262585	If the SLA Domain is not properly configured for a Hyper-V cluster, Hyper-V virtual machines can miss backups.
CDM-262554	Cloud conversion might fail for virtual machines on the first try.

Ticket	Summary of issue
CDM-262154	Oracle log backup jobs that are missing log sequences have no recoverable chain created.
CDM-261756	The estimated time remaining for Fileset Snapshots in Rubrik CDM 6.0 are significantly higher than in previous versions of Rubrik CDM.
CDM-261697	After a Rubrik CDM upgrade, database log backups are failing with the error "No archived log files to backup".
CDM-261681	Cache initialization fails when nodes are in BAD state when SDFS restarts, which causes slow restore operations.
CDM-261680	An Oracle database Export failed with an "incompatible with Oracle release" error.
CDM-261630	A Rubrik download job failed during patch file checksum validation due to incorrect checksum stored in the metadata.
CDM-261513	Volume Group indexing fails with a "Failed to mount snapshot" error.
CDM-261459	If a Microsoft SQL log replicate job is restarted and the log is in an exposed state, when the job restarts, the Mssql Log Replicate job can fail.
CDM-261424	Bare Metal Recovery (BMR) failed on a server with multiple disks, where partitions were created on incorrect disks. After the BMR script finishes with no error, a server failed to boot.
CDM-261412	After a Rubrik CDM upgrade, VMware virtual machine snapshots are full instead of incremental if the virtual machine links to other virtual machines and the virtual machine linking happened before upgrading to Rubrik CDM 6.0.
CDM-261160	A Microsoft SQL filestream database download fails with a Rubrik Internal error.
CDM-261145	Radar tasks fail when the cluster is over subscribed.
CDM-261092	Snapshots created with previous versions of Rubrik CDM that do not use the blockSize field are unable to be restored from an archival location.
CDM-261028	After the SLA Domain local retention settings were changed automatically, the backups which were expected to be deleted were not deleted.
CDM-260912	LiveMount of a virtual machine using a resource pool or compute cluster fails if the operating system is not configured in the correct virtual disk order.
CDM-260700	TOTP as two-factor login fails if the request times out.
CDM-260590	Multiple events in Polaris are reported as out of compliance.
CDM-260538	The nmap-v command displays the Debian banner associated with OpenSSH.
CDM-260388	SQL Server database backups using Rubrik SQL Writer fail when SQL Server hosts are configured to communicate with a Rubrik CDM cluster using tagged VLANs.
CDM-260259	After a Rubrik CDM upgrade, replication fails because of metadata inconsistency in vCD virtual machines.
CDM-260061	Backups of SQL databases containing files with special characters fail when using SQL Writer.
CDM-259789	Rubrik cluster fails the Volume Filter Driver (VFD) installation due to missing of the required Microsoft update KB3033929 on the Windows system.
CDM-259576	RBS does not upgrade properly in a multi-cluster environment.
CDM-258964	A failover cluster node is unable to add a host using the Rubrik HOST ADD REST API.
CDM-258729	Oracle discovery fails if the Oracle database is in a disconnected state.

Ticket	Summary of issue
CDM-258686	An SLA Domain cannot be created if the retention value is less than the frequency value but still greater in unit size.
CDM-258673	After an Oracle upgrade, from 11g to 19c, Rubrik CDM failed to restore an Oracle database. due to a timeout error.
CDM-258501	Radar tasks fail on pass-through clusters.
CDM-257918	Archival consolidation fails with a fingerprint mismatch error because an incremental backup is performed before a full backup.
CDM-256276	An Oracle full database backup fails while creating blobstore directories.
CDM-256156	After an upgrade to Rubrik CDM 5.3, a virtual machine with vSphere replication configured, that creates a snapshot with a compute cluster/resource pool will fail to Live Mount.
CDM-254937	If a Microsoft SQL batch backups fails, metadata corruption can occur.
CDM-254560	Node addition gets stuck when canceled.
CDM-254383	Automated restore performance to an Oracle RAC target is very slow.
CDM-253838	Backup jobs terminated abnormally are displayed with Active status in the Rubrik CDM web UI.
CDM-253390	SLA Domain inheritance of protected objects does not retain the settings of the parent folders when changing from the SLA Domain setting from "Do Not Protect" and then back original SLA Domain setting.
CDM-251954	After a Rubrik CDM upgrade, the SLA Domain lists Azure tiering as Default Access Tier only instead of Archive Access Tier only, which was configured before the upgrade.
CDM-251651	The Rubrik REST API lists VMware virtual machines that are archived and have snapshots expired, which should not be displayed.
CDM-251286	During a rkcli install, the sdreset flag did not work properly.
CDM-250721	After a Rubrik CDM upgrade, the CloudonSetupVerification tool was failing in Azure.
CDM-250354	The Oracle database detail page takes excessive time to load.
CDM-249608	An incorrect syslog config caused error messages to display as dashes.
CDM-249606	After a Rubrik CDM upgrade, Oracle database backups are slow.
CDM-249405	Solaris RBS recovery of sparse files might fail.
CDM-248775	Occasionally the dNFS check used to checks for directories in the Oracle Home does not provide the correct information, which causes Oracle database backups to fail.
CDM-247590	Parallel node addition times out even though individual node additions are still running.
CDM-246762	An Oracle database Live Mount fails due to stale files pre-existing in the recovery area on the target host.
CDM-246703	Archival consolidation operations log spurious completion events even when no meaningful consolidation work was performed.
CDM-245083	Frequent metadata updates can cause large Oracle databases to fail to load to an archival location.
CDM-244182	After an archival recovery, the Reader Archive Cluster does not display the calendar page for the fileset object preventing restores.
CDM-243892	Oracle Live Mount jobs fail when canceling and cannot be deleted.

Ticket	Summary of issue
CDM-242972	Compliance for on-demand snapshots should have been computed according to the SLA Domain configured on the snapshot, rather than the SLA Domain configured for the protected object, which resulted in incorrect compliance-related alerts.
CDM-242001	Microsoft SQL restores of large databases are slow.
CDM-241587	During a Rubrik upgrade, required directories can be created in the root partition instead of within SDFS, which prevents SDFS from starting.
CDM-240795	For a SQL Server database, a Scheduled event is sent estimating when the next snapshot is taken based on the SLA Domain frequency. However, when a database becomes unprotected, the Scheduled Event remains and is not updated.
CDM-240696	A virtual machine with retention locked SLA Domain setting is unprotected after it is moved.
CDM-240636	If the Rubrik Service account does not have the correct permissions, backup jobs fail without an error message to indicate permissions should be updated.
CDM-239601	When configuring CloudOn with Azure, the tenant ID and subscription IDs are not auto-populating the Rubrik CDM web UI due to out-of-memory issues.
CDM-236492	Backup of sparse files with specific layouts can fail when enableLinuxSparseFileSupport is enabled.
CDM-233632	vCD APP_SNAPSHOT jobs are intermittently failing to fetch vCD resources.
CDM-232426	Live Mount and same-host recovery fail on Oracle RAC due to NFS locking errors.
CDM-200976	Recovery of an Oracle RAC database can fail during the post-recovery process if the Oracle RAC instance numbers of the source database instances do not match the node numbers of the Oracle RAC nodes.
CDM-185721	A Live Mount of a SQL database with over 250 data files fails.

Version 6.0.0-p3 fixes

Rubrik CDM version 6.0.0-p3 includes fixes.

Ticket	Summary of issue
CDM-267752	Archival Consolidation and Archival Reverse jobs might fail for S3/ S3 Compatible locations in Rubrik CDM 6.0.0.
CDM-267749	Oracle RAC databases that have db_name \!= db_unique_name are not automatically discovered.
CDM-267688	A NAS DA fileset job might fail when the backup size is larger than 64 GB.
CDM-266280	If a SQL Server log backup job is running during a Rubrik CDM 6.0.0 upgrade, the job might fail.
CDM-265415	A VMware virtual machine backup can fail for 64 KB unaligned VMDKs.
CDM-264494	A stale entry in jobInstance in a Microsoft SQL log backup can cause a backup job to fail.

Version 6.0.0-p2 fixes

Rubrik CDM version 6.0.0-p2 includes fixes.

Ticket	Summary of issue
CDM-266378	VMware virtual machine upload and backup jobs for virtual machines sequentially instead of in parallel.
CDM-265796	Oracle Live Mount fails with the error message "Neither racId nor oracleHostId set for database".
CDM-265457	After a Rubrik CDM upgrade, VMware virtual machines with the RBS registered may show it as disconnected.
CDM-263748	VMware Backup followed by a previous In-Place Recovery job, fails with "access error" if "keepvSphereSnapshotPostRecovery" option is set.
CDM-262154	Oracle log backup jobs that are missing log sequences have no recoverable chain created.
CDM-260912	LiveMount of a virtual machine using a resource pool or compute cluster fails if the operating system is not configured in the correct virtual disk order.

Version 6.0.0-p1 fix

Rubrik CDM version 6.0.0-p1 includes a fix.

Ticket	Summary of issue
CDM-261412	After an upgrade to Rubrik CDM 6.0.0, linked VMware backups use full backups instead of incremental backups.

Version 6.0.0 GA fixes

Rubrik CDM version 6.0.0 General Availability (GA) includes fixes.

Ticket	Summary of issue
CDM-260682	Rubrik Edge is unable to open a Rubrik Support Tunnel after a hostname change.
CDM-260594	After a Rubrik node name is changed, the Rubrik Support tunnel cannot be accessed.
CDM-258690	If a snapshot has expired locally (but not expired in the archived location), it will not be included when calculating the oldest recovery point.
CDM-258684	Cloud Image Conversion fails during Live Mount when there is an etc/path identified but is not a part of root.
CDM-258353	If the OS partition length is unaligned to 1 MB, BMR fails to restore to the original hardware, with an error of failing to create the OS partition on a disk.
CDM-257466	The capacity over time report shows incorrect values for some duplicated remote objects.
CDM-257414	After a Rubrik CDM upgrade, Managed Volumes are unavailable after a reset or resize if the reset check does not validate.

Ticket	Summary of issue
CDM-256493	CloudOn of a Linux virtual machine with Live Volume Mount on data disk with an entry in /etc/fstab with an unsupported format fails.
CDM-256405	Snapshot downloads might fail for snapshots uploaded from Rubrik CDM 4.0 or earlier.
CDM-256008	Reports lists empty values for Windows and Linux clustered filesets.
CDM-255763	Managed Volume fails due to a reset during an ongoing backup.
CDM-255759	If virtual machines are migrated during a backup job, subsequent backups can fail because of invalid checkpoints.
CDM-254067	A Rubrik cluster might fail to detect a host as a Hyper-V host if the Hyper-V Virtual Machine Management service is not running. The Hyper-V Server can also be archived, which causes the creation of a new identity of the virtual machines hosted on the Hyper-V Server.
CDM-251535	After a Volume Group snapshot is placed on legal hold, and the Rubrik CDM web UI page is refreshed, the expected "Remove Legal Hold" in the snapshot menu options is not shown. Instead, a "Place on Legal Hold" option is still shown, and if it is clicked, a failure message is displayed.
CDM-251170	After node replacement due to bad boot drive, the cluster performing node replacement can fail with the following error message, "Error with setting up add nodes job: Failed to Set key encryption key".
CDM-250509	An NFS mount end snapshot operation on a Managed Volume can fail due to "Mount being busy" error.
CDM-249133	An SCVMM refresh job can fail if the Hyper-V Server fails, even after the Hyper-V Server is restored.
CDM-247317	The node-monitor fails to create an email notification when there is a CMOS battery issue.
CDM-245535	A Garbage Collection event can fail when trying to delete an event that is not present on the Rubrik cluster.
CDM-244867	The pfile created by an Oracle clone cannot be accessed if permissions are not explicitly specified.
CDM-240685	Archival jobs fail due to out-of-memory issues on CDM virtual deployments.
CDM-236833	Archival Upload jobs show a negative value for "Data Remaining" on the Monitoring page.
CDM-229579	In VMware, when Windows 2019 Server virtual machines with UEFI enabled are Live Mounted, the boot manager is unable to identify the boot drive.

Version 6.0 DA fixes

Rubrik CDM version 6.0 Directed Availability (DA) includes fixes.

Ticket	Summary of issue
CDM-257074	KMIP key rotation hangs when one of KMIP servers is down instead of rotating to another configured KMIP server.
CDM-256015	SLA Domains can show an incorrect hourly retention value after enabling and disabling advanced UI configuration.

Ticket	Summary of issue
CDM-254111	The user interface for Live Mount operations does not enable users to specify a virtual machine by name.
CDM-253879	Failed to monitor backup status.
CDM-253392	After a Rubrik CDM upgrade, compute resource selection lists local and remote clusters, instead of filtering for local clusters.
CDM-253333	Fileset restore jobs can become stuck when a node decommission operation happens during the fileset restore operation.
CDM-252756	After a Rubrik CDM upgrade, search fields are no longer correctly updating search result boxes.
CDM-252248	The UI shows some Volume Group backup jobs that have failed as still running.
CDM-250656	Changes to the backup order for Oracle RAC databases propagate incorrectly, leading to backups not using the new backup order. Additionally, a UI error made a button in the node ordering flow unavailable for interaction.
CDM-249004	Adding or archiving an Oracle database does not trigger a metadata refresh job and these changes do not appear in the UI for some minutes.
CDM-246583	Replacing a disk that hosts the /sd/scratch directory can lead to failed metadata refresh jobs.
CDM-243009	An error in metadata generation for relics causes stuck replication jobs.
CDM-242691	Configuration information for devices is not being completely cleaned up after detaching a device.
CDM-240323	Oracle log snapshots for an unprotected database do not expire at the archival location after the retention time elapses.
CDM-235604	Sorting by the Quarter attribute does not work correctly.

Technical notes

The following notes provide information related to features in this release.

Deprecation of Rubrik Support decryption for disaster recovery

In Rubrik CDM 6.0, the One-Time Key Rotation dialog box deprecates the option to allow Rubrik to decrypt data in the event of a disaster recovery scenario. Any existing recovery keys cannot be decrypted.

SNMP trap deprecation

Starting with Rubrik CDM 6.0, the Job > Failed backup for a protected object SNMP trap is deprecated.

Oracle Data Guard

Rubrik CDM 6.0 supports new features related to Oracle Data Guard to protect Oracle workloads. The protection of Oracle databases in Data Guard configuration gets consolidated into Data Guard Groups. See <https://support.rubrik.com/s/article/000005630> before upgrading to Rubrik CDM 6.0 to assess the impact of the upgrade for Oracle environments.

Rubrik Edge and Rubrik Air resource requirements

Starting with Rubrik CDM 6.0, Rubrik Edge and Rubrik Air instances have a minimum 16 GB memory requirement. The minimum and recommended amount of memory and IOPS configuration for different Rubrik Edge and Rubrik Air is specified in the *Rubrik Edge Installation and Upgrade Guide* and the *Rubrik Air Installation and Upgrade Guide*.

Rubrik CDM bootstrap enhancements

Starting with Rubrik CDM 6.0.1, Supermicro systems have bootstrap enhancements, which include information on chassis ID, node position, and bond0/bond1 link status.

Automated Garbage Collection

Starting with Rubrik CDM 6.0.1, automated garbage collection of metadata of remote VMware and Microsoft SQL archived objects without usable snapshots is enabled. After an upgrade to Rubrik CDM 6.0.1, anything removed by the automated garbage collection is not displayed in the Rubrik CDM web UI in capacity reports. This enhances automated garbage collection that was implemented in Rubrik CDM 5.3.1 for metadata of source-side VMware and Microsoft SQL objects.

Rubrik CDM 6.0.2 API Changelog

The internal and v1 paths of the Rubrik CDM REST API have several changes.

Internal API

The Rubrik CDM REST API internal path has changes in Rubrik CDM 6.0.2.

Feature additions and improvements

- Added new optional field `shouldDistributeBackupsAutomatically` to the object `OracleHierarchyObjectSummary` used by `GET /oracle/hierarchy/{id}`, `GET /oracle/hierarchy/{id}/children`, and `GET /oracle/hierarchy/{id}/descendants`.
- Added optional fields to `NutanixVmPatch` to update pre- and post-scripts via `PATCH /nutanix/vm/{id}`. The response of `GET /nutanix/vm/{id}` is also impacted because it includes `NutanixVmPatch` in the `NutanixVmDetail` object.
- Removed field `uuid` from object `NutanixVirtualDiskSummary` used by `GET /nutanix/vm/{id}` and `GET /nutanix/vm`.
- Added new field `vmDiskUuid` for object `NutanixVirtualDiskSummary` used by `GET /nutanix/vm/{id}` and `GET /nutanix/vm`.
- Added new field `label` for object `NutanixVirtualDiskSummary` used by `GET /nutanix/vm/{id}` and `GET /nutanix/vm`.
- Added new field `isSnapshottable` for object `NutanixVirtualDiskSummary` used by `GET /nutanix/vm/{id}` and `GET /nutanix/vm`.
- Added new optional boolean field `shouldDistributeBackupsAutomatically` to the `OracleUpdate` object, to be used by `PATCH /oracle/rac/{id}`.
- Added a new optional field `s3KmsEndpoint` to `ObjectStoreLocationSummary` object used by other objects `ObjectStoreLocationDefinition` and `ObjectStoreLocationDetail`.
- Added a new optional field `s3KmsEndpoint` to `ObjectStoreUpdateDefinition` object used by `PATCH /archive/object_store/{id}`.
- Added a new optional field `s3KmsEndpoint` to `ArchivalLocationSummary` object used by `GET /archive/location`.

- Added a new optional field `s3KmsEndpoint` to `ObjectStoreReaderConnectDefinition` object used by `POST /archive/object_store/reader/connect`.
- Added new optional field `isAllCopper` to the object `BootstrappableNodeInfo` used by `GET /cluster/{id}/discover`.
- Added new optional field `url` to the `GlobalManagerConnectionInfo` object returned by `GET /cluster/{id}/global_manager`.
- Added new optional fields `objectLocationId`, `replicationSourceId` and `replicationTargetId` and `archivalTargetId` to the object `ReportTaskEntry` used by `GET /polaris/report/report_job_instance`.

v1 API

The Rubrik CDM REST API v1 path has changes in Rubrik CDM 6.0.2.

New features

- Added new endpoint to refresh an Oracle database: `POST /oracle/db/{id}/refresh`.
- Added new optional field `vmcProvider` to `VirtualMachineDetail` returned by `GET /vmware/vm/{id}`.
- Added new endpoint `POST /nutanix/vm/snapshot/{id}/mount` to request a Live Mount from a Nutanix virtual machine snapshot.
- Added new endpoint `DELETE /nutanix/vm/snapshot/mount/{id}` to request the removal of a Live Mount of a Nutanix virtual machine snapshot.
- Added new endpoint `GET /nutanix/vm/snapshot/mount` to query the summary information about Nutanix Live Mounts.
- Added new endpoint `GET /nutanix/vm/snapshot/mount/{id}` to get the detailed information about a Nutanix Live Mount.
- Added new endpoint `PATCH /nutanix/vm/snapshot/mount/{id}` to change the power status of a mounted Nutanix virtual machine.
- Added new endpoint `POST /nutanix/vm/snapshot/mount/{id}/migrate` to request the migration of a Nutanix Live Mount to another storage container.
- Added new endpoints to retrieve and update replication network throttle settings: `GET /network_throttle/replication/target` `GET /network_throttle/replication/target/{id}` `PATCH /network_throttle/replication/target/{id}`.
- Added new endpoint `GET /cluster/{id}/is_entitled` to get entitlement statuses of the specified nodes.
- Added new endpoint `POST /event/pause_resume` to pause and resume jobs that support this functionality.
- Added new optional fields `sourceClusterId`, `targetClusterName` and `targetClusterId` to the object `JobMonitoringInfo` used by `GET /job_monitoring` and `GET /polaris/job_monitoring`.

Rubrik CDM 6.0.1 API Changelog

The internal and v1 paths of the Rubrik CDM REST API have several changes.

Internal API

The Rubrik CDM REST API internal path has changes in Rubrik CDM 6.0.1.

Feature additions and improvements

- Added new optional field `totpReminderType` with type `TotpReminderType` to `SessionResponse` returned by `POST /session`.

- Added new string enum `TotpReminderType` with valid values including `SkippableReminderAdmin`, `SkippableReminderNonAdmin` and `NonSkippableReminder`.
- Added new optional field `sshKey` to `UserDefinition` object used by `POST /user` and `PATCH /user/{id}`.
- Added new optional fields `platformName`, `chassisId`, `nodePosition`, `isBond0Eth0Enabled`, `isBond0Eth1Enabled`, `isBond1Eth2Enabled` and `isBond1Eth3Enabled` to the object `BoostrappableNodeInfo` used by `GET /cluster/{id}/discover`.
- Added a new optional field `rCsUseCase` to `ObjectStoreLocationSummary` object used by other objects `ObjectStoreLocationDefinition` and `ObjectStoreLocationDetail`. Added new enum `RcsUseCase` for this field.
- Added a new optional field `isRcsLocation` to `ObjectStoreLocationSummary` object used by other objects `ObjectStoreLocationDefinition` and `ObjectStoreLocationDetail`.
- Added a new optional field `isRcsLocation` to `ObjectStoreUpdateDefinition` object used by `PATCH /archive/object_store/{id}`.
- Added a new optional field `isRcsLocation` to `ArchivalLocationSummary` object used by `GET /archive/location`.
- Added a new optional field `isRcsLocation` to `ObjectStoreReaderConnectDefinition` object used by `POST /archive/object_store/reader/connect`.
- Added new optional field `mfaRememberToken` to `SessionResponse` returned by `POST /session`.
- Added new optional field `isMfaRememberDeviceEnabled` to `MfaAuthResponse` object used by `POST /session`.
- Added new optional field `shouldRememberDevice` to `MfaAuthRequest` object used by `POST /session` to specify whether or not to skip the MFA challenge for this device.
- Added a new optional field `terminatedEventSeriesStatus` to `EventStatusSummary` object used by `GET /event_series/status` and `GET /event_series/{id}/status`.

v1 API

The Rubrik CDM REST API v1 path has changes in Rubrik CDM 6.0.1.

New features

- Added new endpoints to retrieve and update admin SSH authentication setting: `GET /cluster/{id}/security/admin_ssh_auth/setting` `PATCH /cluster/{id}/security/admin_ssh_auth/setting`.
- Added new optional field `isVmwareMetroStorageCluster` to the `ClusterVisibilityConfig` object, which is used by the `GET /vmware/vcenter/{id}`, `POST /vmware/vcenter` and `PUT /vmware/vcenter` endpoints.
- Added new endpoint `POST /oracle/db/{id}/restore_logs`. This endpoint creates an asynchronous job to restore archive logs of an Oracle database.
- Added a new endpoint `POST /archive/cold_storage_tier` to set the cold storage tier configuration.
- Added a new endpoint `GET /archive/cold_storage_tier` to get the cold storage tier configuration.
- Added a new object `ColdStorageTierConfig` used by the endpoint `POST /archive/cold_storage_tier`.
- Added optional field `isTotpEnforceUndecided` to `TotpGlobalSetting` used by `GET /cluster/{id}/security/totp/setting` endpoint.
- Added new optional field `isReminderEnabled` to `TotpGlobalSetting` and `TotpGlobalSettingUpdate` which are used by API: `GET /cluster/{id}/security/totp/setting` `PUT /cluster/{id}/security/totp/setting`
- Added new endpoints to retrieve and update global MFA setting: `GET /cluster/{id}/security/mfa/setting` `PUT /cluster/{id}/security/mfa/setting`.
- Added new endpoint `GET /cluster/{id}/security/api_token_whitelist`. This endpoint retrieves the whitelist configuration for API Token credentials.

- Added new endpoint `PUT /cluster/{id}/security/api_token_whitelist`. This endpoint sets the whitelist configuration for API Token credentials.
- Corrected specification in `MssqlDbDetail`, `MssqlInstanceSummary`, and `OracleDbDetail` to correctly identify `date-time` as the response format for date-time properties.

Rubrik CDM 6.0.0 API Changelog

The Rubrik CDM REST API paths, internal, v1,v2, and v3 have several changes.

Internal API

The Rubrik CDM REST API internal path has changes in Rubrik CDM 6.0.0.

Deprecation

Deprecated the following Oracle endpoints:

- `GET /oracle/db`
- `GET /oracle/db/{id}`
- `PATCH /oracle/db/{id}`

Deprecated the following vCD hierarchy endpoints:

- `GET /vcd/hierarchy/{id}`
- `GET /vcd/hierarchy/{id}/children`
- `GET /vcd/hierarchy/{id}/descendants`

Deprecated the following vCD cluster endpoints:

- `GET /vcd/cluster`
- `POST /vcd/cluster`
- `GET /vcd/cluster/{id}/vimserver`
- `POST /vcd/cluster/{id}/refresh`
- `GET /vcd/cluster/{id}`
- `PATCH /vcd/cluster/{id}`
- `DELETE /vcd/cluster/{id}`
- `GET /vcd/cluster/request/{id}`

Deprecated the following vCD vApp endpoints:

- `GET /vcd/vapp`
- `GET /vcd/vapp/{id}`
- `PATCH /vcd/vapp/{id}`
- `GET /vcd/vapp/{id}/snapshot`
- `POST /vcd/vapp/{id}/snapshot`
- `DELETE /vcd/vapp/{id}/snapshot`
- `GET /vcd/vapp/snapshot/{id}`
- `DELETE /vcd/vapp/snapshot/{id}`
- `GET /vcd/vapp`
- `GET /vcd/vapp/{id}/missed_snapshot`
- `GET /vcd/vapp/snapshot/{snapshot_id}/export/options`
- `POST /vcd/vapp/snapshot/{snapshot_id}/export`
- `POST /vcd/vapp/snapshot/{snapshot_id}/instant_recover`
- `GET /vcd/vapp/snapshot/{snapshot_id}/instant_recover/options`

- GET /vcd/vapp/request/{id}
- GET /vcd/vapp/{id}/search
- POST /vcd/vapp/snapshot/{id}/download

Breaking changes

- Renamed field `node` to `nodeId` for object `NetworkInterface` used by GET /cluster/{id}/network_interface.
- Removed `compliance24HourStatus` in `DataSourceTableRequest` for POST /report/data_source/table. Use `complianceStatus`, `awaitingFirstFull`, and `snapshotRange` as replacements.
- Changed the `sort_by` attribute of GET /vcd/vapp to use `VcdVappObjectSortAttribute`. This attribute no longer uses the `VappCount` or `ConnectionStatus` parameters from the previously used `VcdHierarchyObjectSortAttribute`.

Feature additions and improvements

- Added the GET /sla_domain/{id}/protected_objects endpoint to return objects explicitly protected by the SLA Domain with direct assignments.
- Added new field `nodeName` for object `NetworkInterface` used by GET /cluster/{id}/network_interface.
- Added the POST /cluster/{id}/remove_nodes endpoint to trigger a bulk node removal job.
- Added new optional field `numChannels` to `ExportOracleDbConfig` object specifying the number of channels used during Oracle clone or same-host recovery.
- Added new optional fields `forceFull` to the object `HypervVirtualMachineSummary` used by GET /hyperv/vm. This field is also used in `HypervVirtualMachineDetail` used by GET /hyperv/vm/{id} and PATCH /hyperv/vm/{id}.
- Added the GET /cluster/{id}/bootstrap_config endpoint to enable Rubrik CDM to retrieve Rubrik cluster configuration information for the cluster nodes.
- Added new optional field `clusterUuid` to the `ClusterConfig` object used by POST /cluster/{id}/bootstrap and POST /cluster/{id}/setupnetwork.
- Added new optional fields `dataGuardGroupId` and `dataGuardGroupName` to the object `OracleHierarchyObjectSummary` used by GET /oracle/hierarchy/{id}, GET /oracle/hierarchy/{id}/children, and GET /oracle/hierarchy/{id}/descendants.
- Added new optional fields `dataGuardGroupId` and `dataGuardGroupName` to the object `OracleDbSummary` used by GET /oracle/db.
- Added new optional fields `dataGuardGroupId` and `dataGuardGroupName` to the object `OracleDbDetail` used by GET /oracle/db/{id} and PATCH /oracle/db/{id}.
- Added a new optional field `immutabilityLockSummary` to the object `ArchivalLocationSummary` returned by GET /archive/location and GET /organization/{id}/archive/location
- Added new optional fields `dbUniqueName` and `databaseRole` to the object `OracleHierarchyObjectSummary` used by GET /oracle/hierarchy/{id}, GET /oracle/hierarchy/{id}/children, and GET /oracle/hierarchy/{id}/descendants.
- Added new required fields `dbUniqueName` and `databaseRole` to the object `OracleDbSummary` used by GET /oracle/db.
- Added a new required field `databaseRole` to the object `OracleDbDetail` used by GET /oracle/db/{id} and PATCH /oracle/db/{id}.
- Added a new optional field `subnet` to `ManagedVolumeUpdate`, used by PATCH /managed_volume/{id} for updating the subnet to which the node IPs will belong during an SLA MV backup.
- Added new optional field `numChannels` to `RecoverOracleDbConfig` and `MountOracleDbConfig` objects specifying the number of channels used during Oracle recovery.

- Added a new optional field `immutabilityLockSummary` to the object `ObjectStoreLocationSummary` and `ObjectStoreUpdateDefinition` used by `GET/POST /archive/object_store` and `GET/POST /archive/object_store/{id}`
- Added a new optional field `errorMessage` to `SupportTunnelInfo` object used by `GET /node/{id}/support_tunnel` and `PATCH /node/{id}/support_tunnel`.
- Added new optional field `cloudStorageLocation` to the `ClusterConfig` object used by `POST /cluster/{id}/bootstrap`.
- Added new enum `Disabled` to `DataLocationOwnershipStatus` used by `ArchivalLocationSummary`
- Added a new optional field `installTarball` to the `ClusterConfig` object used by `POST /cluster/{id}/bootstrap`.
- Added a new optional field `clusterInstall` to the `ClusterConfigStatus` object used by `GET /cluster/{id}/bootstrap`.
- Added the `GET /cluster/{id}/install` endpoint to return the current status of Rubrik CDM install on a cluster.
- Added the `POST /cluster/{id}/install` endpoint to allow Rubrik CDM install on cluster nodes which are not bootstrapped.
- Added the `GET /cluster/{id}/packages` endpoint to return the list of Rubrik CDM packages available for installation.
- Updated `request_id` parameter in the `GET /cluster/{id}/bootstrap` endpoint, as not required.
- Updated `request_id` parameter in the `GET /cluster/{id}/install` endpoint, as not required.
- Updated `BootstrappableNodeInfo` returned by `GET /cluster/{id}/discover` endpoint to include the `version` field, to indicate the Rubrik CDM software version.
- Added a new optional field `isSetupNetworkOnly` to the `ClusterConfig` object used by `POST /cluster/{id}/setupnetwork`.
- Added the `POST /cluster/{id}/setupnetwork` endpoint to enable Rubrik CDM to perform network setup on nodes that are not bootstrapped.
- Added the `GET /cluster/{id}/setupnetwork` endpoint to return the current status of setup network command on node or nodes.
- Added a new optional field `hostname` to the `NodeStatus` object used by `GET /cluster/{id}/node`, `GET /node`, `GET /node/stats`, `GET /node/{id}`, and `GET /node/{id}/stats`.
- Added new optional fields `usedFastVhdx` and `fileSizeInBytes` to the `HypervVirtualMachineSnapshotSummary` returned by the API `GET /hyperv/vm/{id}/snapshot`.
- Added the `GET /archive/location/request/{id}` endpoint to query the status of asynchronous archival location requests.

v1 API

The Rubrik CDM REST API v1 path has changes in Rubrik CDM 6.0.0.

Feature additions and improvements

- Added optional fields: `id`(type: string) and `networkType`(type: `VmwareNetworkType Enum`) to `VmwareNetworkInfo`, which is used by: `Get /vmware/vm/{id}/snapshot` `Get /vmware/config/recovery/networks`
- Added new optional field `maxLocalRetentionLimit` to `CloudOutForecastSlaParameters`.
- Added following new endpoints for health monitor: `POST /health_monitor/run_policy` `GET /health_monitor/policies` `GET /health_monitor/policy_status`
- Added new endpoints `POST /sap_hana/db/{id}/configure_restore` and `/sap_hana/db/{id}/unconfigure_restore` to configure and unconfigure system copy restore on the target SAP HANA database.
- Added new endpoint `POST /sla_domain/assign_to_downloaded_snapshots` to assign retention SLA only to snapshots at downloaded locations.

- Copied the following endpoints from the internal Rubrik REST API listing to the v1 listing: GET /oracle/db GET /oracle/db/{id} PATCH /oracle/db/{id} Added a new optional parameter `is_data_guard_group` to GET /oracle/db.
- Added new optional fields `advancedRecoveryConfigMap`, `preScriptPath`, `postScriptPath`, and `shouldStopRecoveryOnPreScriptFailure` to `ExportOracleDbConfig` and `MountOracleDbConfig` which specify the Advanced Cloning Options (ACO) map, pre script path, post script path, and whether to stop the recovery on pre-script failure, respectively.
- Added new endpoint POST /oracle/validate_aco_file to validate the given Advanced Cloning Options (ACO) file and retrieve the validation results.
- Added new endpoint GET /oracle/aco_parameter_list to fetch the list of supported Advanced Cloning Options (ACO) parameter names.
- Added new endpoint PATCH /oracle/data_guard_group/{id} to update the SLA and user settings for a Data Guard group.
- Added new endpoints to get and change hostnames of nodes in a Rubrik cluster. 'GET /cluster/{id}/node_hostname', 'POST /cluster/{id}/node_hostname'.
- Added a new object `NodeHostnameInfo` used by GET /cluster/{id}/node_hostname and POST /cluster/{id}/node_hostname.
- Added new endpoint to get Rubrik Backup Service details for a host. GET /host/rbs
- Added new endpoint to install Rubrik Backup Service on a host. POST /host/rbs/install
- Added new endpoint to uninstall Rubrik Backup Service from a host. POST /host/rbs/uninstall
- Added new endpoint to upgrade Rubrik Backup Service on a host. POST /host/rbs/upgrade
- Added new endpoints for user-defined tags management GET /user_defined_tag POST /user_defined_tag DELETE /user_defined_tag GET /user_defined_tag/{id} PATCH /user_defined_tag/{id} DELETE /user_defined_tag/{id}
- Added new optional field 'numChannels' to 'OracleValidateConfig' object. This field specifies the number of channels used when validating Oracle backups.
- Added new endpoint for batch VM snapshots query. POST /vmware/vm/snapshots
- Added new endpoints for SQL Server host configuration. GET /mssql/host/configuration, POST /mssql/host/configuration, GET /mssql/host/configuration/{host_id}, PATCH /mssql/host/configuration/{host_id}, DELETE /mssql/host/configuration/{host_id}
- Added new optional field `dataRetrievalCostInUSD` to `CloudOutStorageForecastSummary`.
- Added POST /cloud_utilization/cloud_out_forecast endpoint to forecast cloud utilization for archival use case.
- Changed `lastUpdatedTime` to be required in
- Changed `retryStatus` to be required in `JobMonitoringInfo` which is used in endpoints GET /job_monitoring and GET /polaris/job_monitoring.
- Changed `lastUpdatedTime` to be required in `JobMonitoringInfo` which is used in endpoints GET /job_monitoring and GET /polaris/job_monitoring.
- Added a new endpoint to bulk tier existing snapshots POST /unmanaged_object/snapshot/bulk_archive_tier
- Added new field `snapshotVerificationInfo` to `VerificationResponse` to include event information about snapshots.
- Added new optional fields `errorInfo` and `retryStatus` to `JobMonitoringInfo` to include backup failure remediation status.
- Added new optional fields `snapMirrorLabelForFullBackup` and `snapMirrorLabelForIncrementalBackup` to `FilesetSummary`, `FilesetUpdate` and `FilesetCreate` to support `SnapMirror` destination volume backup. `FilesetSummary` is used by endpoints: GET /v1/fileset, GET /v1/fileset/{id}. `FilesetUpdate` is used by endpoints: PATCH /v1/fileset/{id}. `FilesetCreate` is used by endpoints: POST /internal/fileset/bulk, POST /v1/fileset.
- Added new values of `IoFilterStatus` and `HostUiFilterStatus` to help distinguish cluster and ESXi host states when there is a mismatch between the installed IO filter and ESXi host versions, instead of defaulting to `Unsupported`.

- Added new endpoints `GET /cluster/{id}/security/totp/setting` and `PUT /cluster/{id}/security/totp/setting` for retrieving and updating the 2-Step Verification global setting, respectively.
- Added new optional field `computeVisibilityFilter` to `GET /vmware/vcenter/{id}`, `POST /vmware/vcenter` and `PUT /vmware/vcenter` to specify compute resource visibility.

New features

- Added new endpoint for querying LDAP domain names. `GET /ldap_service/domain_name`
- Added new endpoints for supporting truststores `GET /v1/cluster/{id}/security/truststore` `DELETE /v1/cluster/{id}/security/truststore` `PATCH /v1/cluster/{id}/security/truststore`
- Added new field `isOnSnapMirrorDestVolume` to `HostHierarchyObjectSummary` returned by `GET /host/hierarchy/{id}/children`.
- Added new endpoint, `GET /volume_group/{id}/request/force_full_snapshot`. This endpoint retrieves the configuration used to force a full snapshot of a Volume Group.
- Added new endpoint, `POST /volume_group/{id}/request/force_full_snapshot`. This endpoint requests to force a full snapshot of a Volume Group.
- Added new endpoint, `POST /archive/location/{id}/owner/disable` to disable archival location.
- Added new endpoint, `POST /archive/location/{id}/owner/enable` to enable archival location.
- Added new optional field `dataPathSpec` to `SapHanaSystemConfig` include details of SAP HANA system data path
- Copied the following endpoints from the internal Rubrik REST API listing to the v1 listings:
 - `GET /vcd/hierarchy/{id}` to get summary of a vCD hierarchy object.
 - `GET /vcd/hierarchy/{id}/children` to get immediate descendant objects.
 - `GET /vcd/hierarchy/{id}/descendants` to get list of descendant objects.
 - `GET /vcd/cluster` to get summary for all vCD Clusters.
 - `POST /vcd/cluster` to add a vCD Cluster.
 - `GET /vcd/cluster/{id}/vimserver` to get `VimServers` of a vCD Cluster.
 - `POST /vcd/cluster/{id}/refresh` to refresh a vCD Cluster.
 - `GET /vcd/cluster/{id}` to get vCD Cluster details.
 - `PATCH /vcd/cluster/{id}` to modify the hostname and credentials of a specified vCD Cluster object.
 - `DELETE /vcd/cluster/{id}` to remove vCD Cluster.
 - `GET /vcd/cluster/request/{id}` to get vCD Cluster job status.
 - `GET /vcd/vapp` to get summary for vApps.
 - `GET /vcd/vapp/{id}` to get vApp details.
 - `PATCH /vcd/vapp/{id}` to make changes to the parameters of a specified vApp object.
 - `GET /vcd/vapp/{id}/snapshot` to retrieve summary information for each of the snapshot objects of a specified vApp object.
 - `POST /vcd/vapp/{id}/snapshot` to start an asynchronous job to create an on-demand snapshot for a specified vApp object.
 - `DELETE /vcd/vapp/{id}/snapshot` to delete all snapshots of vApp.
 - `GET /vcd/vapp/snapshot/{id}` to get vApp snapshot details.
 - `DELETE /vcd/vapp/snapshot/{id}` to delete vApp snapshot.
 - `GET /vcd/vapp/{id}/missed_snapshot` to get details about missed snapshots for a vApp.
 - `GET /vcd/vapp/snapshot/{snapshot_id}/export/options` to get exportable network configurations.
 - `POST /vcd/vapp/snapshot/{snapshot_id}/export` to export vApp snapshot.
 - `POST /vcd/vapp/snapshot/{snapshot_id}/instant_recover` to instant Recovery of vApp virtual machines.

- GET `/vcd/vapp/snapshot/{snapshot_id}/instant_recover/options` to get Instant Recovery information.
- GET `/vcd/vapp/request/{id}` to retrieve the details of a specified asynchronous job for a vApp.
- GET `/vcd/vapp/{id}/search` to search for a file from a vApp.
- POST `/vcd/vapp/snapshot/{id}/download` to download snapshot from archive.
- Added new endpoint, GET `/hyperv/vm/{id}/request/force_full_snapshot`. This endpoint retrieves the configuration used to force a full snapshot of a Hyper-V virtual machine.
- Added new endpoint, POST `/hyperv/vm/{id}/request/force_full_snapshot`. This endpoint requests to force a full snapshot of a Hyper-V virtual machine.
- Added new endpoint, GET `/vmware/vm/{id}/request/force_full_snapshot`. This endpoint retrieves the configuration used to force a full snapshot of a VMware virtual machine.
- Added new endpoint POST `/vmware/vm/{id}/request/force_full_snapshot`. This endpoint requests to force a full snapshot of a VMware virtual machine.

v2 API

The Rubrik CDM REST API v2 path has changes in Rubrik CDM 6.0.0.

Feature additions and improvements

- Added new field `primaryClusterSlaVersion` and an optional field `replicationTargetSlaVersion` in `SlaDomainSummaryV2` to return the SLA version of primary cluster and replication target in get, list, create, and edit SLA REST API responses.
- Added new optional field `resourcePoolId` and `clusterId` in `MountSnapshotJobConfigV2`, `InstantRecoveryJobConfigV2` and `MountSnapshotJobConfigInternalTest` to handle mount and instant recovery to resource pool and compute cluster requirement.
- Added optional field `differentialFrequency` in `SlaDomainDefinitionV2`. This field can be used to include the frequency for a differential backup of SAP HANA databases in the response returned by a GET request to retrieve the SLA Domain definition.
- Added optional field `differentialFrequency` in `SlaDomainPatchDefinitionV2`. This field can be used to set the frequency for a differential backup of SAP HANA databases in a PATCH request to update the SLA Domain definition.
- Added new optional field `shouldApplyToNonPolicySnapshots` in `UnmanagedObjectSlaAssignmentInfo` to handle retention of on-demand snapshots.
- Added new optional parameter `should_apply_to_non_policy_snapshots` in PATCH `/sla_domain/{id}`.
- Added new endpoint POST `/vmware/vm/batch_export` to export a snapshot each from a batch of virtual machines.
- Added new endpoint POST `/vmware/vm/batch_instant_recover` to mount a snapshot each from a batch of virtual machines by using Instant Recovery.
- Added new endpoint POST `/vmware/vm/batch_in_place_recover` to trigger in-place recovery jobs for a batch of virtual machines.
- Added new endpoint POST `/vmware/vm/batch_mount` to mount a snapshot each from a batch of virtual machines.

v3 API

The Rubrik CDM REST API v3 path has changes in Rubrik CDM 6.0.0.

New features and improvements

- Added new field `primaryClusterSlaVersion` and an optional field `replicationTargetSlaVersion` in `SlaDomainSummaryV2` to return SLA version of primary cluster and replication target in get, list, create, and edit SLA REST API responses.
- Added new optional parameter `should_apply_to_non_policy_snapshots` in `PATCH /sla_domain/{id}`.

Compatibility Matrix

See the *Rubrik CDM Compatibility Matrix* for information about features, requirements, and compatibility for Rubrik CDM software.

Rubrik Build

Rubrik hosts community-based tools through the Rubrik Build program and associated GitHub repositories for community-supplied tools.

[Rubrik Build](#) is an open source program that provides access to a growing community of enthusiasts and experts across a number of languages and tools. Rubrik Build is used to create and improve projects that simplify monitoring, testing, development, and automated workflows for Rubrik product deployments.

Rubrik Build includes the following resources:

- [Software Development Kits](#)
- [Tooling Integrations](#)
- [Use Cases](#)
- [Community Projects](#)
- [Rubrik REST API documentation](#)

Important: USE AT YOUR OWN RISK. Rubrik does not officially support the community tools. Carefully investigate a community tool before using it. Always test a community tool on non-production data before using the tool with production data.

Support

Use one of the following methods to contact Rubrik Support.

Web	Rubrik Support Portal
Phone	See Get In Touch for contact options.
Email	support@rubrik.com

Comments and suggestions

We welcome your comments and suggestions about our products and our product documentation.

Products

To provide comments and suggestions about our products contact Rubrik Support, as described in [Support](#).

Product documentation

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