IBM InfoSphere VDP 9.0.6 Release Notes

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IBM InfoSphere VDP 9.0.6 includes new features as well as assorted performance enhancements, security improvements, and bug fixes. To install or upgrade, please schedule a time with IBM InfoSphere Support.

Topics:

- What's New
- Upgrade Paths
- Resolved Issues
- Known Issues
- Limitations and Restrictions

What's New

The following are the new features, enhancements, and changes in IBM InfoSphere VDP 9.0.6 release:

CentOS 7.7, 8.0, and 8.1

VDP Connector is enhanced to support CentOS 7.7, 8.0, and 8.1 operating system versions.

> **Note:** *Cloud mobility (System state) functionality is not supported.*

SUSE Linux Enterprise Server 15 Service Pack (SP) 1 and Enterprise Server 12 Service Pack (SP) 5

VDP Connector is enhanced to support SLES 15 SP1 and SLES 12 SP5 on x86 machines.

> **Note:** *Cloud mobility (System State) functionality is not supported.*

Oracle Enterprise Linux Server 8.x

VDP Connector is enhanced to support Oracle Enterprise Linux Server release 8.0 and 8.1.

> **Note:** *CBT and Cloud mobility (System State) functionality is not supported.*

SUSE Linux Enterprise Server 12 Service Pack (SP) 4 on Power PC

VDP Connector is enhanced to support SLES 12 SP4 on Power PC servers.

> **Note:** *Cloud mobility (System State) functionality is not supported.*

Red Hat Enterprise Linux (RHEL) 8.1

VDP Connector is enhanced to support RHEL 8.1 operating system version.

> **Note:** *Cloud mobility (System State) functionality is not supported.*

See the Resolved Issues section for list of issues addressed in this release.

Upgrade Paths

IBM InfoSphere systems running 7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.6 can be upgraded directly to 9.0.6. Older versions (<7.x) should be upgraded first to one of these releases (7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.6).

Resolved Issues

Fixes in this release fall into three distinct categories as follows:

- • Functionality and Usability Fixes
- • Security and Vulnerability Fixes
- • Command Line Interface Fixes

Functionality and Usability Fixes

The following table lists issues that have been addressed in IBM InfoSphere VDP 9.0.6:

Functionality and Usability Fixes in IBM InfoSphere VDP 9.0.6

Tracking Number	Description
79104	Staging disk is not resized if first log backup fails with disk full error.
72670	Unable to run the scheduled workflow if the previous workflow fails.
77276	NAS Director backup with NetApp may fail due to exception in NetApp snapshot API.
78993	Intermittent backup fails with multiple staging disks due to LUN scan issue. This issue is found with Linux Connector.
78826	Remount with create controlfile fails for In-band ASM child databases.
78996	Connector goes into restart loop when crs_dependency_track file has unexpected data.
74898	AppAware mount may fail due to missing logs in archivelog backup.
79590	[PostgreSQL] Backup fails if OS user login throws warning message (Warning: your password will expire in).
79632	Database backup on data guard standby node fails when archive logs shipping delayed from primary to standby.

Tracking Number	Description
79244	Refresh LiveClone is copying the entire disk again and takes the longer time than LiveClone as it fail to find the relevant bitmaps to use.
45989	SystemState backup fails on Windows 2012 host when the host has un-initialized disk.
74048	Failed to set Static IP in Phase 2 recovery to VMware.
74254	Backup may fail for some applications when underlying physical volume is resized.
60282	For ESP configuration only: Newly added host transport mode defaults to NFS instead of Block.
79610	Db2 AppAware mount fails due to incorrect directory permission.
76002	Backup and mount may take more time on Windows 2012 or higher due to Windows VDS API issue.
79206	Workflow re-provision fails due to partial selection.
79445	Canceled restore from Dedup is not clearing the restore state of SQL databases.
39703	Hyper-V only: IBM InfoSphere Sky Appliance installation may fail due to duplicate by-path identities of volumes.
75873	Timeout issue is observed for workflow jobs.
68556	[Oracle only- Enhancement] While creating grandchild, if db image is used (without recovery point-in-time), connector uses all available log to roll forward which may lead to failure. This is now resolved by always selecting the db+log backup in the child application.
76441	[NAS Director]: Backup fails on Linux host and Sky with NFS staging disks format is set.
77177	[Oracle] Oracle staging disk calculation is set incorrectly for retried jobs resulting in backup failure.
73847	[ORACLE] Purge of production archive log may fail when crosscheck for backup of archivelog is enabled.
70667	In some cases, settings configured at policy level are not overridden with the values defined at the application level.
77183	NFS snapshot and streamsnap job fails with error "Fail to discover VG on staging disks".
79336	Sybase discovery process command output fails if there are more than DEFAULT number of characters in output.
77525	[Oracle] AppAware mount and recovery fails when "Loge Purge retention period" is set to 0 in application advanced settings.
76253	Mount from OnVault backup image fails when an OnVault volume size is not aligned to its block size.

Tracking Number	Description
80328	Added condition to catalog log backup based on the recovery time for ASM switch and restore. 144
77977	Older operating system (RHEL 5.10) do not support udev scripts in the connector for CDX.
78776	Enhancement: Added new script to mount and migrate (instant restore).
78649	Enhancement: Added new script to migrate AppAware mounted application to target storage.
79180	Restore job fails with error "Job_0296953 finished with status failed message VDP Connector: One or more required files were not backed up.
78589	Sometimes, InfoSphere VDP Appliance throws out of memory error and job creates multiple host with same IP.
68245	Corrected the argument from "hanaTennantDbkeyPrefix" to "hanaTenantDbkeyPrefix" in actHANADBM for type "protectApp",
77995	Job cancellation is not sending cancel request to connector in some cases.
78986	ESP logging to bitmap.log is filling /act/pg causing system outage.
80474	Incorrect log job entry is noticed in jobhistorydata for DB+Log jobs.
79135	Expiry jobs are failing when trying to remove already expired images.
78153	Accept() error in Linux CBT service can cause hangs in VDP Connector.
78753	ASM backups are failing when ASM is not configured to use SPFILE.
79913	[Oracle] Restore with recovery flag is not honored in non RAC AppAware mount scripts, especially when AppAware mount is performed with only recovery.
77077	All custom application databases now calculate the staging disk size and handle deletion of old files in staging disk similar to SAPHANA.
80233	Oracle RMAN restore failed with until time set incorrectly when only database backup was used.
77713	During ASM switch/re-balance, the udsinfo lsasmdevice command does not show ASM devices for ASM switched image. This occurs when hostname of backup host is different from the actual host.
80033	Creating a pool while Dedup is not running may cause the pool state to not checked properly when running jobs and an error "Getting pool state not supported for pool" is thrown repeatedly in the logs.
79408	Enhancement: Need to add shared authentication to VDP Connector.
75304	SLA Architect shows noneHTML.toString() when accessed Desktop UI in faded color.

Tracking Number	Description
79976	Adding iSCSI port via Desktop and CLI throws "Host Add iSCSI Error".
80322	VDP Desktop unable to retain mount mode selection while navigating through next and back buttons.
80263	The scheduler entry for vault replications is OFF by default, this issue is now fixed by enabling the vault replication ON by default.
80500	Deletion tracking on Appliance might be reported as false by accident, causing IVGM replication issues. This issue is now fixed by enabling deletion tracking unless user explicitly disable it.
77924	Unable to determine in advance about the base image is being used for recovery.
80602	The instance name is not populating in the Mount and Clone window while performing AppAware mount for a SQL application.
79279	VDP Connector does not authenticate loop-back connection allowing root compromise, this issue is now fixed.
80351	Sybase compression advanced setting and description for some Sybase provision option use the word Sybase instead of SAP ASE. This issue is now fixed by replacing Sybase and Sybase IQ with SAP ASE and SAP IQ in option labels and description.
75820	Enhancement: CAF Sybase ASE]: Need new script to migrate AppAware mounted application to target storage.
80947	SAPHANA: Log backups fails when the volume sync is unable to copy temporary files created while new logs are being written.
79639	ESP: Snaps fail if vdisk creation is accompanied by warning "CMMVC6372W".
79109	Improved error message when VDP Connector fails to find VSS snapshot volume.
80645	Connector port is not honored when host has an application accepting request at IBM InfoSphere reserved port 5106. This is now fixed, the connector port set for a host is always honored.
80860	Db2 on AIX backup is a full backup every time as Db2 on AIX does not support incremental backup. This issue is now fixed, customers can take a JFS2 snapshot and run a file system copy based backup.
77844	CIFS application backups fail if the request to enumerate alternate data streams fails with STATUS_NOT_IMPLEMENTED. This error no longer cause a backup failure.
78513	Enhancement: Added a new --ignore-open-files Connector Option for SmartCopy.
62593	Misleading failure message ("VDP Connector: Failed to change UUID of LVM volumes") returned when multipath is missing on a host.

Tracking Number	Description
77562	Canceled jobs may leave stale LUNs on the host in some cases, this issue is noticed when the connection to the VDP Connector aborts after processing remove LUNs.
78923	Unable to send the SNMP traps from the Appliance if Object Id exceeds short value (1610624438).
79966	Mounting a standalone Oracle child database backup to a RAC node fails.
79004	Enhancement: Support added for Linux CBT on RHEL 8.1, CentOS 8.0, CentOS 8.1 and SLES 12.5
80421	Child application mount fails with "No valid object selected for restore" error if child is created with Mount-point with default drive letter.
78529	Enhancement to allow user to terminate Oracle processes holding on to IBM InfoSphere disk groups after unmount job.
80026	Labels are not being applied when user running workflows.
73195	Log replay function is not working in SQL Clone operation.
69897	Sybase/Db2: "Data Copied" statistics are not calculated correctly for some custom application use cases.
78347	Oracle backups run with the option to unmap staging disk is sometimes bringing down the databases.
80251	[Oracle] AppAware mount on AIX fails due to some error in AppAware mount scripts.
79381	Db2: AppAware mount fails if storage path contains any additional files.
79758	[Oracle] Provided an options to run customized script after PDB refresh.
69028	Large backup using NFS Datastore causes 100% swap usage on IBM InfoSphere VDP Appliance.
80921	[Db2 Only] Some archive logs generated during log backup are not included in the log staging disk though they exists in the log archive location on the Host.
79890	SQL Server mount does not allow the special character ["."] in database name, this issue is now fixed.
80293	Consistency group backup fails with error "VDP Connector: SmartCopy failed with an unknown error code".
79068	One of the IBM InfoSphere service crashes while accessing a SLA which is marked as null when app is unprotected.
69164	Enhancement: Few ASM standalone and other options are missing in actIVGMDBM tool.

Tracking Number	Description
77558	Memory leak caused by nfs-utils is observed on InfoSphere VDP Appliance occasionally.
79321	Mount job may fail when IBM InfoSphere VDP Appliance tries to map the disk on incorrect LUN number.
80378	Improve support for connector based jobs in VMs with 3rd party snapshot activity.
70275	Remount is trying to revert the Microsoft persistent snapshots and fails.
69560	Enhancement: Added script to support The Resilient File System (ReFS) on Windows Data Volumes.
72289	The job class is being changed to an incorrect value when the OnVault job fails with vault connectivity issues. As a result the subsequent OnVault job fails.
80639	Shared buffer allocation verification in write_vmsnap issue is now fixed.
75251	Enhancement: SAP HANA: Added support for parallel tenant backups.
75206	Enhancement: Now backup jobs can handle stale devices on host.
79669	Enhancement: Added new text input field for GCP project ID for system.
71703	VMware vSphere 6.7 Update 3 is now qualified with InfoSphere VDP Appliance versions 9.0.3 and 8.1.6.
78500	Enhancement: VMware tools failure is now ignored in phase 2 and tries to connect to IP.
79933	Backups are not running as one of the not run job remained in memory table and the same job has been deleted in the job data table.
78276	Bitmap leaves corrupted files when failing, this issue is now fixed.
79628	Oracle database backup and AppAware may fail on Oracle 19c multi-node RAC.
78132	Latest Sky instances are updated with new target workers for all clouds.
78060	Oracle ASM backup may fail on 18c version during diskgroup creation.
75535	Enhancement: Added Windows 2019 Cloud Mobility support on AWS.
79530	Enhancement: Added support for SystemState recovery for more than 4TB disk in Azure.
81297	Fetch Connector logs now includes Windows system and core files.

Security and Vulnerability Fixes

Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.6 includes the common names for vulnerabilities and exposures (CVEs), IBM InfoSphere platform issues, and database liabilities resolved as of this release.

The following table lists Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.6.

Fixed Security and Vulnerabilities in IBM InfoSphere VDP 9.0.6

Tracking Number	Description
78578	CVE-2011-4969 CVE-2015-9251 CVE-2012-6708 CVE-2019-11358 WS-2016-0090
78074	CVE-2017-12611 CVE-2017-9804 CVE-2018-11776 CVE-2016-6795 CVE-2017-5638 CVE-2017-9787
78076	CVE-2016-1000031 WS-2014-0034
78080	CVE-2015-0254
78068	CVE-2019-17571
79736	WS-2019-0379
78066	CVE-2018-1000844 CVE-2018-1000850
78313	CVE-2016-0762
79855	CVE-2020-1938
78574	CVE-2018-14040 CVE-2018-14042 CVE-2018-20677 WS-2018-0021

Command Line Interface Fixes

CLI additions and improvements for IBM InfoSphere VDP 9.0.6 include deprecated commands, new arguments, and recommended usages in the latest version of the CLI, API, and SARG. Refer to the latest version of the following publications for more details:

- *CLI Reference*
- *RESTful API Reference*
- *SARG (Simple Report Generator) User Guide*

The following table lists CLI additions and improvements in IBM InfoSphere VDP 9.0.6.

CLI Changes in IBM InfoSphere VDP 9.0.6

Tracking Number	Description
72196	The udstask `mketchosts` command adds values into /data/etc/hosts file under the portion which gets deleted.
81165	Transport property is set to empty when it is not passed for `chhost` command.

The following table lists SARG additions and improvements in IBM InfoSphere VDP 9.0.6.

SARG Changes and Enhancements in 9.0.6

Tracking Number	Description
79010	Enhanced `reportrpo` command.
80120	The `reportimages` command is enhanced to provide Snapshot (dump) images on the appliance.
79719	The `reportcompliance` command is enhanced, Direct2OnVault and -m option support is added.
79174	The `reportaudit` command is enhanced to split out source of command.
77633	The `reportnet` command output displays incorrect Ethernet device for statistics on hardware with many interfaces.
80718	Enhancement: The `reportfailedjobs` command is added with -f option, not to show any applications where failures have been resolved.
78956	Enhancement: The `reportslaviolations` command is enhanced for streamsnap jobs with snapshot policy.

Known Issues

The following are the known issues in IBM InfoSphere VDP 9.0.6:

- Mount job takes more time than expected when VM backup image is mounted back to the same host. [65437]

- VM mount fails on SAS controller with mount mode as vRDM or NFS to Hypervisor. [41748]

- Uploading Sky patch file via VDP Desktop throws "system update failed" error as UI is not able to create IO stream from the AIR application. [77301]

- [Oracle only] ASM re-balance fails on Standalone ASM server. [80229]

- Backup/Mount job may fail on Linux when VDP Connector tries to scan and remove LUNs in parallel. [56767]

- The IMM firmware currently qualified for use on M4 is version 5.6. This needs to be updated to version 7.2 to address security and other fixes. [65655]

- CentOS 6.0 SystemState backup conversion to AWS fails with error "Could not connect to backup host. Failed to connect to connector on VM after power ON (after conversion)". [78379]

- Syncback is failed with error "Database: backup data object not found". This issue is noticed when Syncback and fail-back is triggered without performing fail-over operation. [70944]

- In rare cases, LVM snapshot command on RHEL 8.0, RHEL 8.1, CentOS 8.0, and CentOS 8.1 operating systems may cause the VDP backups to hang. This is a known Red Hat issue. Internal bug ID for this issue as maintained by Red Hat is 1758605. [81201]

  Workaround: IBM InfoSphere recommends that you upgrade the Linux kernel to the latest available one on RHEL/CentOS 8.1 release. Alternatively, customers can contact the Red Hat / CentOS support team for further assistance.

- SystemState backup conversion to GCP fails to convert volumes to virtual disk in RHEL 7.1. [76511]

- VDP Connector service does not start and multiple VDP Connector rpm's found on the host after the system recovery. [81401]

  Workaround: Remove the existing VDP Connector rpm and install the appropriate one.

- RHEL 8.0 SystemState backup conversion to GCP and VMware fails with error "Failed to convert volumes to virtual disk ". [81497]

- Failed clone job in VDP Connector deleting empty production mount point. [81620]

- [RHEL 8.0] SystemState backup recovery to AWS fails with error "VDP Connector: Failed to run meta-data script for SystemState backup". [77313]

- Corrupted snapshot bitmap files are not handled properly while loading the bitmaps. [78276]

- Remote Dedup job may fail if network error occurs during the data movement. [80934]

- Oracle backup fails as ASM fails to find the IBM InfoSphere ASM diskgroup. This issue occurs only when Oracle software is upgraded. [76074]

  Workaround: Remove and add the IBM InfoSphere disk string parameter again to find the IBM InfoSphere ASM diskgroup.

- Firewall rules and security groups validation is not handled properly. [61709]

- Child database restore from out-of-band backup fails due to missing pfile under DBMount\datafile. [79046]

- In rare cases, a job takes more slots than needed thus preventing OnVault jobs to run their sub jobs. [64052]

- In rare cases, Oracle fails to release IBM InfoSphere staging disks on AIX hosts even after dismounting the disk group leading to permanent failures. [63150]

- Oracle Child database restore fails on HP-UX host. [80297]

- Drive letter mismatch (target host label/drive letter is not same as source) is noticed after system recovery for some of the Windows versions. [81532]

- The "`udstask importvaultbackup`" command fails with NullPointerException error. [65456]

- AppAware fails if *sqlplus* output contains "\t \n" characters at the end. [61251]

- In MS-SQL Clone window, when the target host is changed after selecting a database, we might see prefix and suffix options for the SQL Server Database Name instead of SQL Server Database Name. [60539]

    Workaround: In regular workflow this is not an issue, it only happens if we change target host after selecting only one database, the workaround is to de-select the database and select again or use IVGM UI.

- [NFS Datastore only] DAR mount job is failing with error "VDP Connector failed to mount the logical volumes present on the LUN mapped from IBM InfoSphere". [62367]

- Job fails with error "terminated with signal 11, segmentation fault" when IBM InfoSphere appliance fails to send configuration files to VDP Connector. [60665]

- [SQL only] Issue in filtering child applications from the VDP Desktop, it displays duplicate entries in eligible members. [62013]

- System State conversion on Oracle Enterprise Linux 6.4 is failing with error "Failed to convert volumes to virtual disk". [62192]

- [Oracle only] Backups and mount jobs not working properly for ASM RAC on VMs that are in clustered ESX hosts. [26456]

- Remote protection check does not alert if there is no response from the remote cluster. [54523]

- Encrypted values should be handled differently when the appliances are in the shared mode as the values from the master appliances are replicated to slaves. [58175]

- Enhancement: On demand snapshot job should trigger downstream jobs like Dedup and OnVault. [55956]

- Mount job may fail for SQL database while mounting the database back to the original server, using the original name. [42654]

- Mount jobs to an OpenVMS host does not contain the UDID disks already mapped. [34795]

- In certain environments, Oracle backups fail if the instance have a different own for its process and its `ORACLE_HOME` location.

    Workaround: Discover the instance while using an Oracle OS user instead of a SAP user

- Hyper-V VMs only: Some disks go offline for mounted and cloned VMs. Mounts fail with following error: `Error Message: 5024: VDP Connector: Failed to create VSS snapshot for backup. The writer experienced a non-transient error. If the backup process is retried, the error is likely to reoccur.` [50142]

    Workaround: Find if there are offline disks and volumes on the VM, and bring those disks/volumes online.

- VMs with Japanese names do not permit incremental backups. [49599]

- In certain environments, VDP Appliance continuously reboots due to a VMXNET3 driver.

    Workaround: Update to ESXi 6.5 U1 or later.

- CLI only: Command `udstask runworkflow` does not return on workflows that have an "On Demand" schedule type.

    Workaround: Make a clone of the workflow, then run the cloned workflow. It is auto deleted after it is run.

    a. Clone the workflow you want to run:

    `udstask cloneworkflow <workflow ID>`

    b. To specify the source image to use when running this workflow, run:

```
                    udstask addflowproperty -name image -value <image name> <clone workflow ID>
```
    c.   To run the cloned workflow and auto-delete it upon completion:

```
                    udstask runworkflow <clone work flow ID>
```

- RHEL 7.2 only: In Red Hat Enterprise Linux 7.2, a bug exists in the caching daemon that causes LVM commands to hang. [29461]

  Workaround: Update to RHEL 7.3 or later.

- Solid state drives cannot be changed or re-assigned from ZFS Index Log (ZIL) to Dedup index functions in the VDP Desktop. [25073]

  Workaround: The ZIL SSD will have status "`act_ded_pool000`". You can perform this in the CLI using these commands:

  - o   `udsinfo lsssd`

  - o   `udstask rmssd -diskpool <id><wwid>`

  - o   `udstask addssd -diskpool <id><wwid>`

  For details on these commands, refer to the **_CLI Reference_**.

- If system user is not used as a backup user, then application-aware mount sets a default password for the system user. [31734]

  Workaround: The default password (identical to Oracle default password) is: `change_on_install`

- After switching to a temporary ASM disk group, and trying to use a different ASM disk group, an unmount +delete must occur in order for the operation to succeed. This un-mounts and drops the temporary ASM disk group before you can proceed with switch to the new ASM disk group. [31278]

  Workaround: To perform this unmount +delete, use the CLI command:

  ```
  udstask unmountimage -image <mounted image> -delete
  ```

- Work-flows with stale images are not cleaned during GC automatically. [30680]

  Workaround: Stale images must be cleaned manually.

- Vault to Azure only: When setting up an Azure instance, a short lived storage drive is available. This device can show up when editing or adding pools. As this drive is only short-lived, it doesn't stay added to the pools across reboots and there might be data corruption when it comes to data in all the zpools like Dedup and performance. [29648]

  Workaround: Do not use the default short-lived storage drive.

- After performing a restore operation on MS-SQL Always On Availability Group (AAG) database, the database might be in restoring state on secondary node of the group. [27512]

  Workaround: Manually bring the database in sync state by purging the database on the secondary node and re-initiating the replication.

- Post configuration of a VDP Appliance instance on a Hyper-V server, the Hyper-V server cannot get the IP address of VDP Appliance on Hyper-V manager's Networking tab. [26353]

  Workaround: Open the console for the VM by double clicking the VM name and get the IP address from command line at the VDP Appliance.

- Changing the IP address of the primary NIC using the configuration panel does not change the Cluster IP address and the Operative IP address. [24431]

  Workaround: Use the CLI command `udstask chcluster` to modify the cluster and operative IP address.

- Modified ACLs on folders are not copied during incremental CIFS backup on Isilon NAS storage. ACLs of files within the folders are correctly captured and updated. [21097]

- Snapshot and clone jobs fail after changing the IBM InfoSphere VDP Appliance instance IP address. [20759]

Workaround: Reboot the VDP Appliance instance after changing the IP address.

- Under certain circumstances, an expiration job may fail with following error message: [20041]
  `Omd: vdisk has dependent flash copies.`

  This happens only when the following criteria are all true:
    - o   The image being expired is the last snapshot image.
    - o   Backups have been taken from multiple nodes in the cluster.
    - o   One or more nodes previously used for backups are offline.

- If an Oracle host is rebooted while database mounts exist, those mounted databases will be offline after the reboot. [19378]

  Workaround: After host reboot, manually mount the needed file systems and start child database instance.

- If InfoSphere VDP Appliances are forcefully unjoined, protected applications configured to replicate between the appliances may not correctly show the selected template and profile. [16995]

  Workaround: Do not un-join appliances forcefully when they are associated with SLAs.

- Specifying mount point is not currently supported for in-band Oracle ASM databases. [16534]

  Workaround: When performing a mount operation on an in-band Oracle ASM database, leave the Mount Point field empty and proceed with the mount operation.

- Live Clone of a DedupAsync image fails with error '*When attaching a live clone, the parent must be a flash copy*', when a Live Clone operation is performed after a fail-back operation. [16355]

  Workaround: Wait until a successful DedupAsync job completes, and perform a Live Clone operation.

- During out-of-band file system restoration, the backup data replaces the same production data, but new data since the backup is ignored. [10298]

- When performing a Microsoft Exchange database restore, the restore operation is successful, but some log error messages are noticed in the event viewer, these are actually warning messages. You may safely ignore these messages. [9948]

- Microsoft SQL database has double-byte characters in the name are not supported. [8761]

  Workaround: Rename databases without double-byte characters.

- Windows only: Improper shutdown of VDP Desktop sessions using the cross (X) button may result in running the desktop service in the background. Due to this user may not be able to start a new VDP Desktop session again. [6592]

  Workaround: Kill the VDP Desktop process from the Task Manager and try again. To avoid this issue, close each session using the Desktop menu.

- Due to a known bug in RHEL 5.8 and earlier, and 6.0, out-of-band application backups may result in a kernel panic intermittently. [5253]

  Workaround: Upgrade RHEL version to 5.9 or 6.1 or higher. Additionally, out-of-band applications should be configured to "Keep staging disks mapped between jobs."

- Using unmount and delete option from VDP Desktop leaves duplicate application entries and throws the following error while performing re-provision work-flow of Oracle applications from IVGM.

  "Error mounting backup image on host: Cannot find AppAware data for application <app id> on host <host id> when re-provisioning work-flow of Oracle applications from IVGM." [71909]

  Workaround: Use the unmount and delete option from IVGM instead of VDP Desktop.

- Red Hat Enterprise Linux (RHEL) 5.11, CentOS 5.11 System State conversion to GCP fails with an error "Could not connect to backup host. Failed to connect to connector on VM after power ON (after conversion)". [71985]

- Red Hat Enterprise Linux (RHEL) 5.3 System State conversion to AWS fails with an error "Could not connect to backup host. Failed to connect to connector on VM after power ON (after conversion)". [71969]

- CentOS 7.0 System State conversion to AWS/GCP fails with an error "Failed to convert volumes to virtual disk". [71971]

- Sles11sp4 and Sles12sp4 System State backup conversions to AWS fail with an error "VDP Connector: Failed to mount file system". [71979]

- System Recovery fails on AWS target for Windows 2012 R2 Server. [71905]

- CentOS 7.6 recovery to AWS failed with an error "Failed to re-config and reboot VM used for conversion. VM bootup has timed out". [71911]

- Unable to connect to GCP target host on Windows 2008 R2 Server after conversion. [71913]

- System Recovery fails on Azure target for Windows 2016 Server. [71947]

- System State backup fails for VM with thin provisioned logical volumes configuration. [72179]

- Red Hat Enterprise Linux (RHEL) 7.0 System Recovery migration failed on Azure. [72291]

- Red Hat Enterprise Linux (RHEL) 5.2 System Recovery and Migration failed on Azure. [72296]

- CentOS 7.3 System Recovery fails on Azure. [72300]

- OEL 6.4 System Recovery failed on Azure. [72304]

- Retries of cloudbacker operations may exceed request signing time limit, resulting in 403 error during retries. [74001]

  Change the parameter timeout value from '--timeout=500' to '--timeout=2000 in '/act/scripts/cloudbacker.sh'.

- Dedup may fail sometimes when multiple jobs concurrently access the same object. [63254]

- Job cancellation may not work properly for SAP HANA and Sybase databases as the underline scripts on the backup host are not killed. [76169]

- VM backup conversion to GCP is failing for Red Hat Enterprise Linux (RHEL) 7.1. [77675]

Limitations and Restrictions

The following are the limitations and restrictions in IBM InfoSphere VDP 9.0.6:

- Deploying IBM InfoSphere VDP Appliance OVA on VMware 6.7 u2 requires SHA1 hashing algorithm to be converted to SHA256 hashing algorithm using ovftool.exe provided by VMware. Get in touch with IBM InfoSphere services team for more information if you want to deploy a VDP Appliance on VMware 6.7 u2.

- Dynamic disks are not supported for staging disks.

- Backups created on RHEL 7.3 systems cannot be mounted to RHEL 6.8 systems. [47664]

- Hyper-V only: VM runs a full backup instead of a low splash backup when VMs storage is moved from one cloud service vendor to another. [24783]

- ESXi hosts with time that does not match with its VMware jobs fail. This is as designed by VMware. [39241]

- SystemState Recovery fails if there are any security software in the backup image which can block execution of binaries during System State recovery. Consider exempting the target disk from the interfering software for the duration of the operation. [64152]

- Remote Dedup jobs cannot record ingest, post-dedup, and post-compress stats on remote side. [16938]

- Exchange virtual machines only: Snapshots with log truncation enabled occasionally fail with error: `5584: VDP Connector failed to truncate log with unknown error.`

  Workaround: If any databases are in a bad state (such as `Dismounted, Failed and Suspended`) Microsoft Exchange writer returns error `VSS_E_WRITER_RETRYABLE` during log truncation request. If all databases are in good state, then only the log truncation job will succeed. This is as designed.

- StreamSnap job duration grows exponentially when there is a delay between two clusters. [26746]

- On VVOL-based setups, if the appliance determines that LAN-free mode is applicable, VMware backups fail (VVOL-based VMDKs cannot be accessed in SAN mode). [38252]

- Image clones do not provide a GUI option for a mount point or ASM disk group. [31786]

- Database re-provision fails when Oracle database authentication is changed from OS to DB. [27586]

  Workaround: Create a new Application Aware mount database.

- (Linux Generic Applications only) The combined length of Logical Volume Name and Volume Group name hosting that Logical Volume should not exceed 108 characters. [26839]

- Rebooting a Linux host during a backup operation using IBM InfoSphere CBT driver may cause the next backup job to be a full backup rather than an incremental backup. [26880]

- Performing application aware mounts to multiple hosts in a single work-flow is not supported. [27174]

- Oracle 12c with PDB stored in File System format (not ASM) is only supported on Linux. Unix and Windows platforms are unsupported at this time. [23773]

- Reducing the disk group size is not supported due to Oracle ASM limitation. [23925]

- AIX, iSCSI only: Only single node Oracle ASM RAC clusters are supported on AIX using iSCSI. [23401]

- The log backup frequency mentioned in minutes via VDP Desktop SLA Architect is rounded to the nearest multiple of 5 minutes. [22901]

- If a NAS dataset consists of file streams, the backup job ignores these streams and captures rest of the data. [19262]

- Square brackets ([ ]) or forward slash (/) in a VMware datastore name are not supported. [8872]

- VDP Connector fails to auto-configure iSCSI ports of the third party iSCSI initiator on Windows. [7784]

- HP-UX PV Links on 11.23 will only allow 8 paths per volume group. Due to this restriction, it is important that the SAN zoning is configured to have no more than 8 paths per staging LUN and/or in-band disks. For best results, have separate zones configured for the Host-to-VDP and VDP-to-Storage.

Example: Perform Application Aware mount on host A using SID db1, then Unmount the database.Remount the database to target host B using SID Db2 while host B has a running database with name db1. Then the Application Aware remount operation may shutdown the database db1 on host B.

- Installtrustedcertificate command works in CLI, but does not work with REST API: [64579]

    Workaround: Log on to CLI, copy the `cert.pem` and `key.pem` to `/home/admin/upload` folders, and then execute the following command:

    `udstask installtrustedcertificate -certfile cert.pem -keyfile key.pem`

Limitation in LDAP usage with IBM InfoSphere VDP 9.0.6:

- Support of referral by default feature is ignored. However, you can optionally turn on this feature by changing the "ldap.referral.support" parameter value to true.

- For Active Directory, the Domain Users group is not supported in this release. It does not appear in the list of mappings.

2 IBM InfoSphere VDP 9.0.4 Release Notes

IBM InfoSphere VDP 9.0.4 includes new features as well as assorted performance enhancements, security improvements, and bug fixes. To install or upgrade, please schedule a time with IBM InfoSphere Support.

Topics:

What's New

The following are the new features, enhancements and changes in IBM InfoSphere VDP 9.0.4 release:

Enhanced integration with MySQL database management

IBM InfoSphere enhanced its out-of-the-box support for MySQL. Databases are discovered automatically, transaction logs are managed as part of the SLA associated with the databases, recovery to any point in time, and creation of virtual clones are done entirely from the UI, either on-demand or as part of automated workflows.

The following data capture methods and operating systems are supported:

- **MySQL on Linux can be captured at the volume level** in an incremental-forever fashion with instant access and virtual clone creation for TDM. This leverages Linux LVM and IBM InfoSphere's Changed Block Tracking capabilities and is the recommended alternative.

- For customers not using LVM or who cannot use volume level capture, **MySQL on Linux can alternatively be captured using full+incremental backup**. This uses the databases' traditional "dump" based backup, typically run as a weekly full and daily incrementals. Recovery involves reconstructing the incrementals on top of the latest full backup.

Benefits:

- Automated discovery, backup/capture, and recovery of MySQL databases.
- Log roll forward option to recover databases to any point in time.
- Automated deployment of virtual clones (application aware mount) for TDM use cases.
- No need for using customized scripts - support is out-of-the-box.

RHEL 7.7 and 8.0

VDP Connector is enhanced to support RHEL 7.7 and 8.0.

Note: *Cloud mobility (System State) functionality is not supported.*

See the Resolved Issues section for list of issues addressed in this release.

Upgrade Paths

IBM InfoSphere systems running 7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.6 can be upgraded directly to 9.0.4. Older versions (<7.x) should be upgraded first to one of these releases (7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.6).

Resolved Issues

Fixes in this release fall into three distinct categories as follows:

- Functionality and Usability Fixes
- Security and Vulnerability Fixes
- Command Line Interface Fixes

Note: *All the issues fixed prior to 8.1.3 release are already part of 9.0.4*

Functionality and Usability Fixes

The following table lists issues that have been addressed in IBM InfoSphere VDP 9.0.4:

Functionality and Usability Fixes in IBM InfoSphere VDP 9.0.4

Tracking Number	Description
69909	Failed NAS Director backups result in the next backup being a full copy of all data on the share. This issue is now fixed.
70261	CIFS application backup fails due to corrupted error file. This issue is now fixed.
71536	CIFS application backups may fail during SmartCopy with authentication issue even though authentication succeeds for other parts of the job.
74795	NAS Director fails to reboot after upgrading to IBM InfoSphere VDP Appliance 9.0.3.
71879	Hyper-V backup may fail sometimes with an internal error due to different block allocations issue.
67384	[Solaris] File system backup may fail due to invalid timestamps on files. This occurs when SmartCopy operation attempts to set the same timestamp on the backup file.
72221	When mounting multiple images from the same applications to a Windows 2016 host, the first mount succeeds. But the subsequent mount fails with an invalid error and Windows points to disk signature error.

Tracking Number	Description
73650	Db2 discovery fails if instance home is created in different locations.
71036	[Oracle] Restore may fail if there is a time zone difference between host and application.
71281	[Oracle] AppAware mount fails if ORACLE_BASE is not configured.
73787	[Oracle] ASM to filesystem incremental backups are going full instead of incremental when staging disk filesystem type is set as connector.
74096	[Oracle] Some Oracle processes are holding on to IBM InfoSphere disk groups causing unmount failures.
74093	[Oracle] Restore fails to bring up the database with open reset logs. This issue is now fixed.
74078	[Oracle] Incorrect recovery time displays while performing AppAware mount.
74310	[Oracle] Restore of 18c database failed when ORACLE_HOME not set properly.
71071	[NAS Director] Timeout value to copy CISF ACLs is now increased from 20 seconds to 2 minutes.
71164 71191	[NAS Director] Retrying a directory that failed to copy ACLs causes job failure.
74395	IBM InfoSphere appliance may fail occasionally while executing `reportcloneconsumption` command. This is due to huge memory consumption. This issue is now fixed.
72512	Non-admin user with SLA Manage rights cannot update the template policy when SLA Analysis option is enabled.
72001	Enhancement: Need to allow non-admin users to upgrade the VDP Connector. This issue is now fixed.
71252	MS-SQL operation to mount job fails with an error for the cluster host.
70042	Default NAS snapshot expiration (3 days) is too low. This value is now increased to 30 days.
69796	Mount from ESP to a VM may fail if host mapping is not done automatically on ESX.
69769	Partial images should not expire as per the retention by scheduler. This causes the backup to start from the beginning.
74641	[NAS Director] Upgrade fails with error "Failed to upgrade with error code 1".
75058	The /tmp and /dumps folders are now installed with mount option protections "nosuid,nodev".
71939	The `udstask nfstest` command ignores any -option parameter. This issue is now fixed.

Tracking Number	Description
72641	IBM InfoSphere appliances are communicating to ESX hosts every day at a specific time over the ports 5106 & 56789. This issue is now fixed by excluding ESX hosts from the nightly discovery.
72926	[Oracle] Underlying filesystem freezes while backing INBAND Oracle database that resides on JFS2.
75098	Enhancement: Need to display stale devices by adding `liststalesdevices` command in diag.log.
70420	Enhancement: Need to add a new command to show report memory utilization for admin users. This issue is fixed now by adding `reporthealth` command.
70688	Enhancement: Poor read performance (20 MB / sec) is noticed when using a LVM snapshot with default chunk size (4k).
73037	Stale device nodes are seen in the IBM InfoSphere VDP Appliance, even after ESP snaps are unmapped from the target ESP array.
74944	[Oracle] Sometimes VDP Connector may get incorrect OS user for Oracle process due to timezone issues, which results in discovery and backup failures.
74492	[Oracle] Controlfile backup fails if backup file with same name is in use.
69044	[Oracle] AppAware mount fails if temporary table space is empty.
75365	[Oracle] Enhancement: Need to exclude "disable_streams_pool_auto_tuning" parameter file while doing AppAware Mount.
57812	Enhancement: Need to provide an option to know the list of stale staging disks that supports across all the UNIX flavors. Support is extended for AIX and Linux hosts with a new command (`udsagent liststaledevices`).
67812	[Oracle] Improve the getOracleHome function call using the cache information. This issue is now fixed.
71505	[Oracle] Windows backup are failing while fetching the pfile with the init<instance>.ora as it is looking for init.ora instead.
70291	[Oracle] AppAware mount fails for OnVault backup images when the imageLogOffset parameter is not set by connector.
73590	[Oracle] Restore fails with ORA-19801 and ORA-16032 errors.
74137	Mount operation fails to use the source drive while performing System State backup in Windows environment.
73705	Backup and restore of clustered SQL goes to passive SQL cluster node.
72542	Custom App Framework (CAF) script fails as it is being triggered before bringing up the database.

Tracking Number	Description
64681	System State recovery fails for VMware backup with Data Disks Migration flag [Linux SLES 11].
70542	IBM InfoSphere enables the xp_cmdshell during MS-SQL user login during backup but the same is not disabled after the backup.
75971	[Oracle] Oracle backup may hang if ASM is installed but not running.
72647	Script parameters (pre and post scripts) on workflow do not appear in IVGM and VDP Desktop.
50677	[Oracle] After post script failures in scrub-mount, job fails but Oracle database is not properly stopped.
68842	Some file systems memory consumption is high during the depth scan on the application which has many directories and files. This issue is now fixed by limiting the memory consumption.
72405	ASM switch should have the same instance name as source. This is now fixed.
74551	Multiple user names are shown as a result while trying to get ASM user using ps command output. This issue is now fixed by adding a grep process.
62331	Enhancement: Need to add provisioning option for the parameter db_nk_cache_size.
75064	Self service network related API commands allowed shell command injection previously. This is now fixed.
74240	[MySQL] Restore fails when config file does not pass on the command line while starting MySQL server.
75323	[MySQL] Restore operation fails if config file parameter is set as empty during restore.
73458	[Oracle] In some cases, backup jobs for Oracle 11.2.0.4 database deletes the data file while cleaning up the duplicate data files.
70112	Consistency Group mount jobs using cluster names are not shown in System Monitor. This issue is now fixed.
71141	Newly added VM fetches IPV6 instead of IPV4 in VMware environment.
71518	[Oracle] Enhancement: "Incremental only" support is added for ESP arrays.
73287	[Oracle] When db_unique_name is configured different from db_name, it affects the backup operation and ASM switch. This issue is now fixed.
72544	Database discovery fails if Db2 database is cataloged with alias name. Remount and AppAware mount fails if logarchmeth1 is configured under previous log directory or NODE000 directory.
74766	NFS Datastore mount fails when NFS option is set on ESX but no client IP is configured.

Tracking Number	Description
73318	IVGM is not passing the IP address to appliance and unable to create a VM with user defined IP address.
73490	Enhancement: [SAP HANA] Need to support download of backup list file along with other metadata files for the HANA backup image to the appliance.
72793	Catalog recovery doesn't handle Symlinks properly that causes restore process into an infinite loop.
68950	VMware to AWS backup fails if LVM contains Snapshots.
73971	Unable to discover Db2 databases if the language is set to "ja_JP.UTF-8".
75696	System Recovery from iSCSI to EBS Volume is taking more than expected time in Windows environment.
74890	Backup fails on Solaris Exadata machine due to format or partition issue on staging disks.
76857	AppAware mount provisioning parameters are missing to pass values in the rest API in actDBM utility. This issue is now fixed.
73920	[SAP HANA] Backup image restore fails on AWS hosts.
76965	[Sybase ASE only] Some system databases (sybsecurity, saptools, saptempdb) are not considered during the backup.
76220	Recovery session timed out after one hour and failed with error "VDP Connector: Failed to run metadata script for System State backup".
72403	ASM Switch preflight check passes even though the database is still up and running.
73914	[SAP HANA] Enhancement: Need to provide an option to find out the reasons for tenant DB backup failures.
73642	[SAP HANA] Mounting back to standalone host is failing with error "init: Host xyz not part of a cluster" progress="1" status="running".
73485	Enhancement: For SAP HANA applications on first backup, avoid writing '0' blocks when running a volume level backup.
74688	Enhancement: Sybase single/multiple database can restore on new target using dump snapshot.
74862	Enhancement: Microsoft Azure P2V recovery to support multiple subscriptions.
72428	Enhancement: Need to support running rollup on configured appliances.
75769	Cleanup code deletes and fail to scan Luns when the /dev entry file is missing.

Tracking Number	Description
68091	Enhancement: Added CBT support for Red Hat Enterprise Linux (RHEL) 8.0 (x86_64) version.
75767	Maximum concurrent mount jobs are not shown properly even though jobs are mounted with -queue option.
73875	Enhancement: IBM InfoSphere now supports VMware VDDK 6.7.3 to capture and access VMware virtual disk storage.
73812	Application discovery fails with error "ACTERR-010005 IP address for host required".
69168	SAP HANA App type does not allow connector option to set in IVGM GUI or Appliance CLI. This is fixed by adding the connector options for application type SAPHANA in advanced options.
72054	Jobs fail when host logs off from the Pure Storage array.
73207	Enhancement: Need to show the "Connector Management" option for non-admin user if the user has "Host Manage" rights.
70575	Enhancement: Remove Report Manager's Deployment Guide from Resource Center.
74745 74611	Enhancement: Need to recover single database to source using LVM snapshot.
74816	Enhancement: Need to add new script for DB2 single/multiple databases restore on new target host.
72635	DB2 AppAware mount fails if source database db paths are configured under the same directory structure.
76085	MIB cannot parse and fails to pass MIB validation tool.
71671	Enhancement: Need to support NIFCLOUD based OnVault pools.
74149	Enhancement: Need to support Japan and other regions for Oracle cloud in Vault pool.
72306	Enhancement: Mount job fails if the captured image uses higher version connector.
73799	AIX Db2 Dump Restore with log roll forward option fails to bring up the database due to missing logs.
74609	On AIX, snapshot creation failures are ignored resulting in copying from live filesystem that could miss backing up some files.
74953	AIX connector crashes while mounting the Db2 child application. This issue is now fixed.
72118	Appliance does not allow adding an already protected application to an empty logical group. This issue is now fixed.

Tracking Number	Description
72474	Enhancement: Need to support Db2 on AIX with JFS2 file systems.
71034	Traditional clone for Sybase or Db2 is not supported. This issue is now fixed.
72147	Enhancement: VDP Connector is enhanced to support Red Hat Enterprise Linux (RHEL) 7.7 with IBM InfoSphere CBT.
60582	Workflow fails to select roll forward time for Oracle mounts in VDP Desktop.
72774	Dump backup flags are not set correctly for images created using StreamSnap or DedupAsync replication.
72732	Enhancement: Added support for Opaque Networks of VMware NSX.
71247	OnVault job fails without any retry when Vault Pool is not reachable and tolerateOnVaultAirgap parameter is enabled.
68905	The host file system table (fstab) entry sequence is not the same as that of the source system after performing System State recovery from the backup image.
72552	Enhancement: Need to support client IP address configuration for NFS settings.
73388	Bitmap files created on ESP have some issues.
68535	There is a possibility of SQL injection in appliance. This issue is now fixed.
70674	AppAware mount from vault image fails with error: "VDP Connector socket connection got terminated abnormally, while waiting for the response from the VDP Connector".
71235	DAR backup fails with error: "VDP Connector: The staging disk is full". This issue is now fixed.
35101	Database is not detached even after workflow fails with an error.
76804	Failed to fetch remote pool state due to holding lock for long running calculations.
71730	Enhancement: Need to add compression level for Sybase full+incremental (dump) backup.
69823	User was able to create a Dedup-Async Replication (DAR) Production to Mirror policy with an empty "Every" field. Subsequently however, managing an application with that policy failed.
70025	[SQL only] AppAware mount fails with error: "Failed to discover/reprotect mounted applications". This issue is now fixed.
73814	Backup fails with a SmartCopy error and a message about SetFileValidData is displayed in the log.
77333	System State backup fails with error: "Failed to prepare staging volumes, err 5577".

Tracking Number	Description
74500	SmartCopy fails with an error while running a System State recovery from Windows to cloud.
77197	For non-database based applications, the snap/streamsnap jobs are displayed as database jobs. This issue is now fixed.
71942	System State backup fails to recover for Windows 2016 when static IP address is configured on backup host.
72231	CBT fails to start after upgrading from CentOS 7.4 to CentOS 7.6.
66702	VMware System State recovery may fail due to time out issue while installing VM Tools.
76369	[SAP HANA] Tenant backup fails due to incorrect dump size calculation of the database.
68741	Re-mount job fails with error: "VDP Connector: Cannot leave database in Recovering state or replay logs when mounting from a previously mounted image".
75815	Enhancement: Need to increase the number of auto configured iSCSI sessions from 100 to 256.
65321	VMware system recovery with migrate VM flag fails with error: "Failed to convert volumes to virtual disk" for sles11sp4.
76669	Reads done during SmartCopy verification will not be accounted for in the "target read" and "source read" performance numbers logged by SmartCopy.
72621	Enhancement: App Manager Listing page has pop up messages for SQL Instance and Consistency Group protection.
76198	Enhancement: The actDBM.pl tool is now enhanced to use the latest version of TLSv1.1.
74167	Appropriate messages are displayed while performing system recovery.
53703	One or more symbolic links are missing in /dev/zvol/act_per_pool000 while performing mount and unmount operations. Contact IBM InfoSphere support team to fix the issue.
76348	Cluster node validation does not work properly on failover environment.
71936	VDP Connector may stop tracking the changed blocks if the corresponding script fails to freeze the database.
77246	Google Cloud Platform (GCP) tags and labels missing in System State recovery while creating VMs.
74734	Enhancement: Need to optimize the disk rescan when multiple jobs are running.
77391	During AppAware mount, connector changes the permission on mounted files if the system does not have free drive letter and volumes are mounted at C:\Windows.

Tracking Number	Description
69461	PSRV can run out of memory when processing large number of backup image entries on the AGM.
75329	Mounting operation may take longer time on VMware's VM. This issue is now fixed.
70678	Enhancement: Enhancement: VM restore should use NFS transport mode if all the nodes under cluster disk are configured as NFS.
77713	During ASM switch/re-balance, `udsinfo lsasmdevice` does not show ASM devices for ASM switched image. This occurs when hostname of backup host is different from the actual host.

Security and Vulnerability Fixes

Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.4 includes the common names for vulnerabilities and exposures (CVEs), IBM InfoSphere platform issues, and database liabilities resolved as of this release.

The following table lists Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.4.

Fixed Security and Vulnerabilities in IBM InfoSphere VDP 9.0.4

Tracking Number	Description
68433	CentOS Update for libXfont CESA-2015:1708 centos6
72844	CentOS Update for kernel CESA-2019:2736 centos6
75476	CentOS Update for java CESA-2019:3136 centos6
71712	CentOS Update for vim-common CESA-2019:1774 centos7
72848	CentOS Update for kernel CESA-2019:2863 centos6
70782	CVE-2018-1000632
75480	CVE-2018-13405
75830	CVE-2019-2999
75478	CVE-2019-14835
75494	CVE-2019-11810
75828	CVE-2019-2842

Tracking Number	Description
76301	CVE-2018-16871 CVE-2018-16884 CVE-2019-11085 CVE-2019-11811
76305	CVE-2018-20856 CVE-2019-3846 CVE-2019-9506 CVE-2019-10126
76307	CVE-2019-11477 CVE-2019-11478 CVE-2019-11479
76309	CVE-2017-17833
76311	CVE-2018-1312
76316	CVE-2019-6974 CVE-2019-7221
76319	CVE-2019-3862
76323	CVE-2019-0217 CVE-2019-0220
70780	CVE-2019-13990
76326	CVE-2019-10160 CVE-2019-9636
75025	Need new version of device-mapper-multipath.
72470	Corrected high pam_faillock value.
72104	SSH MAC algorithm (SHA1) has been deprecated and replaced with SAH256.
76814	nfs-utils package is not updated.
77362	Self-signed certificates are not compatible with Mac OS 10.15 Catalina.

Command Line Interface Fixes

CLI additions and improvements for IBM InfoSphere VDP 9.0.4 include deprecated commands, new arguments, and recommended usages in the latest version of the CLI, API, and SARG. Refer to the latest version of the following publications for more details:

- *CLI Reference*
- *RESTful API Reference*
- *SARG (Simple Report Generator) User Guide*

The following table lists CLI additions and improvements in IBM InfoSphere VDP 9.0.4.

CLI Changes in IBM InfoSphere VDP 9.0.4

Tracking Number	Description
33791	Enhancement: New udsinfo (`lsconnectorconfig`) and udstask (`chconnectorconfig`) commands are added to read/write in the connector configuration file from appliance CLI.
59043	Enhancement: Ned to enhance CLI method to display independent disks for VMs. The udsinfo (`lsapplication`) command is now enhanced to show additional 'vmvolumes' section when performed against a specific VM Application ID.
76238	Enhancement: Update the `fetchconnectorlogs` command to fetch P2V logs.
64859	The "udstask chhost -connect2actip" command fails with error ACTERR-010023.

The following table lists SARG additions and improvements in IBM InfoSphere VDP 9.0.4.

SARG Changes and Enhancements in 9.0.4

Tracking Number	Description
75114	Enhancement: SARG commands are now enhanced to support SAP HANA, DB2, MySQL, Maria, MaxDB, Sybase database types. The reports `reportcloneconsumption`, `reportmountedimages`, `reportworkflows` are enhanced.

Known Issues

The following are the known issues in IBM InfoSphere VDP 9.0.4:

- Hyper-V only: IBM InfoSphere VDP Appliance installation may fail due to duplicate by-path identities of volumes. [39703]

  Workaround: Create dummy disk in SCSI controller as LUN0, and all other disks are attached to one SCSI controller using other LUN numbers.

- Mount job takes more time than expected when VM backup image is mounted back to the same host. [65437]

- VM mount fails on SAS controller with mount mode as vRDM or NFS to hypervisor. [41748]

- System State backup fails on Windows 2012 host when the host has un-initialized disk. [45989]

- [HP-UX only] Remount of unmounted image with different Oracle SID is failing while creating the audit file destination. [68069]

- Backup/Mount job may fail on Linux when VDP Connector tries to scan and remove LUNs in parallel. [56767]

- In rare cases, a job takes more slots than needed, preventing OnVault jobs to run their sub jobs. [64052]

- In rare cases, Oracle fails to release IBM InfoSphere staging disks on AIX hosts even after dismounting the disk group leading to permanent failures. [63150]

- The "`udstask importvaultbackup`" command fails with NullPointerException error. [65456]

- AppAware fails if *sqlplus* output contains "\t \n" characters at the end. [61251]

- In MS-SQL Clone window, when the target host is changed after selecting a database, we might see prefix and suffix options for the SQL Server Database Name instead of SQL Server Database Name. [60539]

  Workaround: In regular workflow this is not an issue, it only happens if we change target host after selecting only one database, the workaround is to de-select the database and select again or use IVGM UI.

- [NFS Datastore only] DAR mount job is failing with error "VDP Connector failed to mount the logical volumes present on the LUN mapped from IBM InfoSphere". [62367]

- Job fails with error "terminated with signal 11, segmentation fault" when IBM InfoSphere appliance fails to send configuration files to VDP Connector. [60665]

- [SQL only] Issue in filtering child applications from the VDP Desktop, it displays duplicate entries in eligible members. [62013]

- System State conversion on Oracle Enterprise Linux 6.4 is failing with error "Failed to convert volumes to virtual disk". [62192]

- [Oracle only] Backups and mount jobs not working properly for ASM RAC on VMs that are in clustered ESX hosts. [26456]

- Remote protection check does not alert if there is no response from the remote cluster. [54523]

- Encrypted values should be handled differently when the appliances are in the shared mode as the values from the master appliances are replicated to slaves. [58175]

- Enhancement: On demand snapshot job should trigger downstream jobs like Dedup and OnVault. [55956]

- Mount job may fail for SQL database while mounting the database back to the original server, using the original name. [42654]

- Mount jobs to an OpenVMS host does not contain the UDID disks already mapped. [34795]

- In certain environments, Oracle backups fail if the instance have a different own for its process and its `ORACLE_HOME` location.

  Workaround: Discover the instance while using an Oracle OS user instead of a SAP user

- Hyper-V VMs only: Some disks go offline for mounted and cloned VMs. Mounts fail with following error: `Error Message: 5024: VDP Connector: Failed to create VSS snapshot for backup. The writer experienced a non-transient error. If the backup process is retried, the error is likely to reoccur.` [50142]

  Workaround: Find if there are offline disks and volumes on the VM, and bring those disks/volumes online.

- VMs with Japanese names do not permit incremental backups. [49599]

- In certain environments, VDP Appliance continuously reboots due to a VMXNET3 driver.

  Workaround: Update to ESXi 6.5 U1 or later.

- CLI only: Command `udstask runworkflow` does not return on workflows that have an "On Demand" schedule type.

  Workaround: Make a clone of the workflow, then run the cloned workflow. It is auto deleted after it is run.

  a. Clone the workflow you want to run:

     `udstask cloneworkflow <workflow ID>`

  b. To specify the source image to use when running this workflow, run:

     `udstask addflowproperty -name image -value <image name> <clone workflow ID>`

  c. To run the cloned workflow and auto-delete it upon completion:

     `udstask runworkflow <clone work flow ID>`

- RHEL 7.2 only: In Red Hat Enterprise Linux 7.2, a bug exists in the caching daemon that causes LVM commands to hang. [29461]

  Workaround: Update to RHEL 7.3 or later.

- SQL Server database names do not provide a suffix field in application-aware mounts work-flow windows.

- Solid state drives cannot be changed or re-assigned from ZFS Index Log (ZIL) to Dedup index functions in the VDP Desktop. [25073]

  Workaround: The ZIL SSD will have status "`act_ded_pool000`". You can perform this in the CLI using these commands:

  o `udsinfo lsssd`

  o `udstask rmssd -diskpool <id><wwid>`

  o `udstask addssd -diskpool <id><wwid>`

  For details on these commands, refer to the ***CLI Reference***.

- If system user is not used as a backup user, then application-aware mount sets a default password for the system user. [31734]

  Workaround: The default password (identical to Oracle default password) is: **change_on_install**

- After switching to a temporary ASM disk group, and trying to use a different ASM disk group, an unmount +delete must occur in order for the operation to succeed. This un-mounts and drops the temporary ASM disk group before you can proceed with switch to the new ASM disk group. [31278]

  Workaround: To perform this unmount +delete, use the CLI command:

  `udstask unmountimage -image <mounted image> -delete`

- Work-flows with stale images are not cleaned during GC automatically. [30680]

  Workaround: Stale images must be cleaned manually.

- Vault to Azure only: When setting up an Azure instance, a short lived storage drive is available. This device can show up when editing or adding pools. As this drive is only short-lived, it doesn't stay added to the pools across reboots and there might be data corruption when it comes to data in all the zpools like dedup and performance. [29648]

  Workaround: Do not use the default short-lived storage drive.

- After performing a restore operation on MS-SQL Always On Availability Group (AAG) database, the database might be in restoring state on secondary node of the group. [27512]

  Workaround: Manually bring the database in sync state by purging the database on the secondary node and re-initiating the replication.

- Post configuration of a VDP Appliance instance on a Hyper-V server, the Hyper-V server cannot get the IP address of VDP Appliance on Hyper-V manager's Networking tab. [26353]

  Workaround: Open the console for the VM by double clicking the VM name and get the IP address from command line at the VDP Appliance.

- Changing the IP address of the primary NIC using the configuration panel does not change the Cluster IP address and the Operative IP address. [24431]

  Workaround: Use the CLI command `udstask chcluster` to modify the cluster and operative IP address.

- Modified ACLs on folders are not copied during incremental CIFS backup on Isilon NAS storage. ACLs of files within the folders are correctly captured and updated. [21097]

- Snapshot and clone jobs fail after changing the IBM InfoSphere VDP Appliance instance IP address. [20759]

  Workaround: Reboot the VDP Appliance instance after changing the IP address.

- Under certain circumstances, an expiration job may fail with following error message: [20041]
  `0md: vdisk has dependent flash copies.`

  This happens only when the following criteria are all true:
    o   The image being expired is the last snapshot image.
    o   Backups have been taken from multiple nodes in the cluster.
    o   One or more nodes previously used for backups are offline.

- If an Oracle host is rebooted while database mounts exist, those mounted databases will be offline after the reboot. [19378]

  Workaround: After host reboot, manually mount the needed file systems and start child database instance.

- If InfoSphere VDP Appliances are forcefully unjoined, protected applications configured to replicate between the appliances may not correctly show the selected template and profile. [16995]

  Workaround: Do not un-join appliances forcefully when they are associated with SLAs.

- Specifying mount point is not currently supported for in-band Oracle ASM databases. [16534]

  Workaround: When performing a mount operation on an in-band Oracle ASM database, leave the Mount Point field empty and proceed with the mount operation.

- Live Clone of a DedupAsync image fails with error '*When attaching a live clone, the parent must be a flash copy*', when a Live Clone operation is performed after a failback operation. [16355]

  Workaround: Wait until a successful DedupAsync job completes, and perform a Live Clone operation.

- During out-of-band file system restoration, the backup data replaces the same production data, but new data since the backup is ignored. [10298]

- When performing a Microsoft Exchange database restore, the restore operation is successful, but some log error messages are noticed in the event viewer, these are actually warning messages. You may safely ignore these messages. [9948]

- Microsoft SQL database has double-byte characters in the name are not supported. [8761]

  Workaround: Rename databases without double-byte characters.

- Windows only: Improper shutdown of VDP Desktop sessions using the cross (X) button may result in running the desktop service in the background. Due to this user may not be able to start a new VDP Desktop session again. [6592]

  Workaround: Kill the VDP Desktop process from the Task Manager and try again. To avoid this issue, close each session using the Desktop menu.

- Due to a known bug in RHEL 5.8 and earlier, and 6.0, out-of-band application backups may result in a kernel panic intermittently. [5253]

  Workaround: Upgrade RHEL version to 5.9 or 6.1 or higher. Additionally, out-of-band applications should be configured to "Keep staging disks mapped between jobs."

- For ESP configuration only: Newly added host transport mode defaults to NFS instead of Block. [60282]

  Workaround: Modify the transport mode manually.

- SAP HANA: Database restore fails if iSCSI is not configured on the scale-out nodes. [69183]

- VMware Virtual Disk Development Kit (VDDK) 6.7 library panic observed on InfoSphere VDP Appliance. This issue is related to VMware's VixDiskLib library. [68537]

- MDL for Linux/Oracle application of size more than 100TB on ESP is shown incorrectly. [71043]

- In some cases, settings configured at policy level are not overridden with the values defined at the application level. [70667]

- Using unmount and delete option from VDP Desktop leaves duplicate app entries and throws the following error while performing re-provision work-flow of Oracle applications from IVGM.

  "Error mounting backup image on host: Cannot find AppAware data for application <app id> on host <host id> when re-provisioning work-flow of Oracle applications from IVGM." [71909]

  Workaround: Use the unmount and delete option from IVGM instead of VDP Desktop.

- Red Hat Enterprise Linux (RHEL) 7.2 conversion to AWS/GCP fails with an error "Failed to convert volumes to virtual disk". [68083]

- Red Hat Enterprise Linux (RHEL) 5.11, CentOS 5.11 System State conversion to GCP fails with an error "Could not connect to backup host. Failed to connect to connector on VM after power ON (after conversion)". [71985]

- Red Hat Enterprise Linux (RHEL) 5.3 System State conversion to AWS fails with an error "Could not connect to backup host. Failed to connect to connector on VM after power ON (after conversion)". [71969]

- CentOS 7.0 System State conversion to AWS/GCP fails with an error "Failed to convert volumes to virtual disk". [71971]

- Sles11sp4 and Sles12sp4 System State backup conversions to AWS fail with an error "VDP Connector: Failed to mount file system". [71979]

- System Recovery fails on AWS target for Windows 2012 R2 Server. [71905]

- CentOS 7.6 recovery to AWS failed with an error "Failed to re-config and reboot VM used for conversion. VM bootup has timed out". [71911]

- Unable to connect to GCP target host on Windows 2008 R2 Server after conversion. [71913]

- System Recovery fails on Azure target for Windows 2016 Server. [71947]

- System State backup fails for VM with thin provisioned logical volumes configuration. [72179]

- Red Hat Enterprise Linux (RHEL) 7.0 System Recovery migration failed on Azure. [72291]

- Red Hat Enterprise Linux (RHEL) 5.2 System Recovery and Migration failed on Azure. [72296]

- CentOS 7.3 System Recovery fails on Azure. [72300]

- OEL 6.4 System Recovery failed on Azure. [72304]

- Retries of cloudbacker operations may exceed request signing time limit, resulting in 403 error during retries. [74001]

- Unable to run the schedule workflow once the previous workflow fails. [72670]

- AppAware mount may fail sometimes due to missing logs in archivelog backup. [74898]

- Dedup may fail sometimes when multiple jobs concurrently access the same object. [63254]

- The IMM firmware currently qualified for use on M4 is version 5.6. This needs to be updated to version 7.2 to address security and other fixes. [65655]

- Failed to set Static IP in Phase 2 recovery to VMware. [74048]

- Backup and mount may hang or take more time on Windows 2012 or higher due to Windows VDS API issue. [76002]

- [ORACLE] Purge of production archive log may fail when crosscheck for backup of archivelog is enabled. [73847]

- NAS Director backup with Netapp may fail due to exception in Netapp snapshot API. [77276]

- Backup may fail for various applications, when underlying physical volume is resized. [74254]

- Job cancellation may not work properly for various DBs like SAP HANA, Sybase etc as the underline scripts on the backup host are not killed. [76169]

- VMbackup conversion to GCP is failing for Red Hat Enterprise Linux (RHEL) 7.1. [77675]

- [Oracle] Oracle staging disk calculation is set incorrectly for retried jobs resulting in backup failure. [77177]

- [Oracle] AppAware mount and recovery fails when "Loge Purge retention period" is set to 0 in application advanced settings. [77525]

- VDP Appliance only: Tomcat self-signed web certificate is valid only for one year when VDP Appliance upgrade path includes 9.0.2 or 9.0.3. [77963]

The following table lists the known Common Vulnerabilities and Exposures (CVEs) issues in IBM InfoSphere VDP 9.0.4:

Note: IBM InfoSphere has analyzed these vulnerabilities and believes these are not applicable or exploitable.

Known CVEs

Description	CVE #
In Apache Struts 2.0.0 through 2.3.33 and 2.5 through 2.5.10.1, using an unintentional expression in a Freemarker tag instead of string literals can lead to a RCE attack.	CVE-2017-12611
In Apache Struts 2.3.7 through 2.3.33 and 2.5 through 2.5.12, if an application allows entering a URL in a form field and built-in URLValidator is used, it is possible to prepare a special URL which will be used to overload server process when performing validation of the URL. NOTE: This vulnerability exists because of an incomplete fix for S2-047 / CVE-2017-7672.	CVE-2017-9804
Square Open Source Retrofit version Prior to commit 4a693c5aeeef2be6c7ecf80e7b5ec79f6ab59437 contains a XML External Entity (XXE) vulnerability in JAXB that can result in An attacker could use this to remotely read files from the file system or to perform SSRF.. This vulnerability appears to have been fixed in After commit 4a693c5aeeef2be6c7ecf80e7b5ec79f6ab59437.	CVE-2018-1000844
Square Retrofit version versions from (including) 2.0 and 2.5.0 (excluding) contains a Directory Traversal vulnerability in RequestBuilder class, method addPathParameter that can result in By manipulating the URL an attacker could add or delete resources otherwise unavailable to her.. This attack appears to be exploitable via An attacker should have access to an encoded path parameter on POST, PUT or DELETE request. This vulnerability appears to have been fixed in 2.5.0 and later.	CVE-2018-1000850
Included in Log4j 1.2 is a SocketServer class that is vulnerable to deserialization of untrusted data which can be exploited to remotely execute arbitrary code when combined with a deserialization gadget when listening to untrusted network traffic for log data. This affects Log4j versions up to 1.2 up to 1.2.17.	CVE-2019-17571
Python's elementtree C accelerator failed to initialise Expat's hash salt during initialization. This could make it easy to conduct denial of service attacks against Expat by constructing an XML document that would cause pathological hash collisions in Expat's internal data structures, consuming large amounts CPU and RAM. Python 3.8, 3.7, 3.6, 3.5, 3.4, 2.7 are believed to be vulnerable.	CVE-2018-14647
Apache Struts versions 2.3 to 2.3.34 and 2.5 to 2.5.16 suffer from possible Remote Code Execution when alwaysSelectFullNamespace is true (either by user or a plugin like Convention Plugin) and then: results are used with no namespace and in same time, its upper package have no or wildcard namespace and similar to results, same possibility when using url tag which doesn't have value and action set and in same time, its upper package have no or wildcard namespace.	CVE-2018-11776

Known CVEs

Description	CVE #
In the Convention plugin in Apache Struts 2.3.x before 2.3.31, and 2.5.x before 2.5.5, it is possible to prepare a special URL which will be used for path traversal and execution of arbitrary code on server side.	CVE-2016-6795
The Jakarta Multipart parser in Apache Struts 2 2.3.x before 2.3.32 and 2.5.x before 2.5.10.1 has incorrect exception handling and error-message generation during file-upload attempts, which allows remote attackers to execute arbitrary commands via a crafted Content-Type, Content-Disposition, or Content-Length HTTP header, as exploited in the wild in March 2017 with a Content-Type header containing a #cmd= string.	CVE-2017-5638
When using a Spring AOP functionality to secure Struts actions it is possible to perform a DoS attack. Solution is to upgrade to Apache Struts version 2.5.12 or 2.3.33.	CVE-2017-9787
Apache Commons FileUpload before 1.3.3 DiskFileItem File Manipulation Remote Code Execution.	CVE-2016-1000031
The class FileUploadBase in Apache Commons Fileupload before 1.4 has potential resource leak - InputStream not closed on exception.	WS-2014-0034
Apache Standard Taglibs before 1.2.3 allows remote attackers to execute arbitrary code or conduct external XML entity (XXE) attacks via a crafted XSLT extension in a (1) <x:parse> or (2) <x:transform> JSTL XML tag.	CVE-2015-0254
Cross-site scripting (XSS) vulnerability in jQuery before 1.6.3, when using location.hash to select elements, allows remote attackers to inject arbitrary web script or HTML via a crafted tag.	CVE-2011-4969
jQuery before 1.9.0 is vulnerable to Cross-site Scripting (XSS) attacks. The jQuery(strInput) function does not differentiate selectors from HTML in a reliable fashion. In vulnerable versions, jQuery determined whether the input was HTML by looking for the '<' character anywhere in the string, giving attackers more flexibility when attempting to construct a malicious payload. In fixed versions, jQuery only deems the input to be HTML if it explicitly starts with the '<' character, limiting exploitability only to attackers who can control the beginning of a string, which is far less common.	CVE-2012-6708
jQuery before 3.0.0 is vulnerable to Cross-site Scripting (XSS) attacks when a cross-domain Ajax request is performed without the dataType option, causing text/javascript responses to be executed.	CVE-2015-9251
iQuery, before 2.2.0, is vulnerable to Cross-site Scripting (XSS) attacks via text/javascript response with arbitrary code execution.	WS-2016-0090

Known CVEs

Description	CVE #
jQuery before 3.4.0, as used in Drupal, Backdrop CMS, and other products, mishandles jQuery.extend(true, {}, ...) because of Object.prototype pollution. If an unsanitized source object contained an enumerable __proto__ property, it could extend the native Object.prototype.	CVE-2019-11358
In Bootstrap before 4.1.2, XSS is possible in the collapse data-parent attribute.	CVE-2018-14040
In Bootstrap before 4.1.2, XSS is possible in the data-container property of tooltip.	CVE-2018-14042
In Bootstrap before 3.4.0, XSS is possible in the affix configuration target property.	CVE-2018-20677
Prototype Pollution vulnerability found in Angular before 1.7.9.	WS-2019-0367
XSS in data-target in bootstrap (3.3.7 and before).	WS-2018-0021

Limitations and Restrictions

The following are the limitations and restrictions in IBM InfoSphere VDP 9.0.4:

- Deploying IBM InfoSphere VDP Appliance OVA on VMware 6.7 u2 requires SHA1 hashing algorithm to be converted to SHA256 hashing algorithm using ovftool.exe provided by VMware. Get in touch with IBM InfoSphere services team for more information if you want to deploy a VDP Appliance on VMware 6.7 u2.

- Dynamic disks are not supported for staging disks.

- Backups created on RHEL 7.3 systems cannot be mounted to RHEL 6.8 systems. [47664]

- Hyper-V only: VM runs a full backup instead of a low splash backup when VMs storage is moved from one cloud service vendor to another. [24783]

- ESXi hosts with time that does not match with its VMware jobs fail. This is as designed by VMware. [39241]

- System State Recovery fails if there are any security software in the backup image which can block execution of binaries during System State recovery. Consider exempting the target disk from the interfering software for the duration of the operation. [64152]

- Remote dedup jobs cannot record ingest, post-dedup, and post-compress stats on remote side. [16938]

- Exchange virtual machines only: Snapshots with log truncation enabled occasionally fail with error: `5584: VDP Connector failed to truncate log with unknown error.`

  Workaround: If any databases are in a bad state (such as `Dismounted, Failed and Suspended`) Microsoft Exchange writer returns error `VSS_E_WRITER_RETRYABLE` during log truncation request. If all databases are in good state, then only the log truncation job will succeed. This is as designed.

- StreamSnap job duration grows exponentially when there is a delay between two clusters. [26746]

- On VVOL-based setups, if the appliance determines that LAN-free mode is applicable, VMware backups fail (VVOL-based VMDKs cannot be accessed in SAN mode). [38252]

- Image clones do not provide a GUI option for a mount point or ASM disk group. [31786]

- Database re-provision fails when Oracle database authentication is changed from OS to DB. [27586]

  Workaround: Create a new Application Aware mount database.

- (Linux Generic Applications only) The combined length of Logical Volume Name and Volume Group name hosting that Logical Volume should not exceed 108 characters. [26839]

- Rebooting a Linux host during a backup operation using IBM InfoSphere CBT driver may cause the next backup job to be a full backup rather than an incremental backup. [26880]

- Performing application aware mounts to multiple hosts in a single work-flow is not supported. [27174]

- Oracle 12c with PDB stored in File System format (not ASM) is only supported on Linux. Unix and Windows platforms are unsupported at this time. [23773]

- Reducing the disk group size is not supported due to Oracle ASM limitation. [23925]

- AIX, iSCSI only: Only single node Oracle ASM RAC clusters are supported on AIX using iSCSI. [23401]

- The log backup frequency mentioned in minutes via VDP Desktop SLA Architect is rounded to the nearest multiple of 5 minutes. [22901]

- If a NAS dataset consists of file streams, the backup job ignores these file streams and captures the rest of the data. [19262]

- Square brackets ([ ]) or forward slash (/) in a VMware datastore name are not supported. [8872]

- VDP Connector fails to auto-configure iSCSI ports of the third party iSCSI initiator on Windows. [7784]

- HP-UX PV Links on 11.23 will only allow 8 paths per volume group. Due to this restriction, it is important that the SAN zoning is configured to have no more than 8 paths per staging LUN and/or in-band disks. For best results, have separate zones configured for the Host-to-VDP and VDP-to-Storage.

  Example: Perform Application Aware mount on host A using SID db1, then Unmount the database. Remount the database to target host B using SID db2 while host B has a running database with name db1. Then the Application Aware remount operation may shutdown the database db1 on host B.

- Installtrustedcertificate command works in CLI, but does not work with REST API: [64579]

  Workaround: Log on to CLI, copy the `cert.pem` and `key.pem` to `/home/admin/upload` folders, and execute the following command:

  `udstask installtrustedcertificate -certfile cert.pem -keyfile key.pem`

Limitation in LDAP usage with IBM InfoSphere VDP 9.0.4:

- Support of referral by default feature is ignored. However, you can optionally turn on this feature by changing the "ldap.referral.support" parameter value to true.

- For Active Directory, the Domain Users group is not supported. It does not appear in the list of mappings.

3   IBM InfoSphere VDP 9.0.3 Release Notes

IBM InfoSphere VDP 9.0.3 includes major new features as well as assorted performance enhancements, security improvements, and bug fixes. To install or upgrade, please schedule a time with IBM InfoSphere Support.

Topics:

- What's New
- Upgrade Paths
- Resolved Issues
- Known Issues
- Limitations and Restrictions

What's New

The following are the new features, enhancements and changes in IBM InfoSphere VDP 9.0.3 release:

Enhanced integration with IBM Db2 and SAP ASE (formerly Sybase ASE) database management

IBM InfoSphere enhanced its out-of-the-box support for IBM Db2 and SAP ASE (formerly Sybase ASE). Databases are discovered automatically, transactions logs are managed as part of the SLA associated with the databases, and recovery to any point in time and creation of virtual clones are done entirely from the UI, either on-demand or as part of automated workflows.

The following data capture methods and operating systems are supported:

- **Db2 and SAP ASE on Linux can be captured at the volume level** in an incremental-forever fashion with instant access and virtual clone creation for TDM. This leverages Linux LVM and IBM InfoSphere's Changed Block Tracking capabilities and is the recommended alternative.

- For customers not using LVM or who cannot use volume level capture, **Db2 and SAP ASE on Linux can alternatively be captured using full+incremental backup**. This uses the databases' traditional "dump"-based backup, typically run as a weekly full and daily incrementals. Recovery involves reconstructing the incrementals on top of the latest full backup.

- **Db2 on AIX can be captured at the volume level** in an incremental-forever fashion with instant access and virtual clone creation for TDM. This leverages GPFS or JFS snapshots and synthesizes the incremental captures by running a full scan of the database to look for changed blocks. This alternative is recommended for TDM.

- For customers not using GPFS or JFS or who cannot use volume level capture, **Db2 on AIX can alternatively be captured using full+incremental backup**. This uses the databases' traditional "dump"-based backup, typically run as a weekly full and daily incrementals. Recovery involves reconstructing the incrementals on top of the latest full backup and therefore is not recommended for TDM.

Benefits:

- Automated discovery, backup/capture, and recovery of Db2 and SAP ASE databases.
- Log roll forward option to recover databases to any point in time.

- Automated deployment of virtual clones (application aware mount) for TDM use cases.

- No need for using customized scripts - support is out-of-the-box.

Note: *SAP ASE and IBM Db2 database management require IBM InfoSphere VDP - Global Manager 9.0.4 or later.*

SUSE Linux Enterprise Server 12 Service Pack (SP) 4

VDP Connector is enhanced to support SLES 12 SP4.

Note: *Cloud mobility (System State) functionality is not supported.*

See the Resolved Issues section for list of issues addressed in this release.

Upgrade Paths

IBM InfoSphere systems running 7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.6 can be upgraded directly to 9.0.3. Older versions (<7.x) should be upgraded first to one of these releases (7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.6).

Resolved Issues

Fixes in this release fall into three distinct categories as follows:

- Functionality and Usability Fixes

- Security and Vulnerability Fixes

- Command Line Interface Fixes

Note: *All the issues fixed prior to 8.1.3 release are already part of 9.0.3*

Functionality and Usability Fixes

The following table lists issues that have been addressed in IBM InfoSphere VDP 9.0.3:

Functionality and Usability Fixes in IBM InfoSphere VDP 9.0.3

Tracking Number	Description
66037	Enhancement: Child application should have enough log history to allow accurate staging disk calculation.
67725	Hyper-V mount fails if VM configuration file is placed on root volume without a trailing backslash character.
67790	SQL Only - Transaction log replay fails if the captured log file does not have any new transactions during mount/restore/clone.
68554	While scan job is running, the process may delete a change list or change list directory.
68492	Un-mark ignored link is displaying after VM migration for protected application.

Tracking Number	Description
68224	Unable to pick PRDM as default mode for all restore jobs if the backup is IVGM and host is ASM.
67159	Clone of Oracle ASM backup to VMware VM fails with "Failed to find IBM InfoSphere node for ASM disk"
66814	Enhancement: Need an option to skip inaccessible logs.
68473	VDP Connector fails to extend disk group when new staging disk is added to a staging disk group with file system type as ext4.
67862	[Oracle] Oracle Home discovery fails if soft-link exists.
68361	Oracle AppAware mount/Restore job fails and log backup succeeds without any new log being backed up.
67474	[Oracle] Fail to found incarnation if the version is lower.
61944	NAS incremental backup fails with Java Null Pointer Exception during snap-diff process.
67354	MDL calculation for Oracle child database application is wrongly calculated.
67938	[Oracle] Backup fails due to some issue in fetching the right group owner of RMAN background process.
67238	Enhancement: For log mount and log unmount operations time consumed is optimized from the VDP Connector.
63453	Out of memory issue occurs when platform is checking for large number of unapproved backups.
65431	ASM Switch and Re-balance may fail during restore operation.
53457	Deletion of custom snapshot pool fails when created with default name.
68488	On-demand work-flow mount Job label missing in the Active Images section.
63942	Enhancement: System StateSystem State backup to support Dynamic Volumes.
68145	Enhancement: Extend Dedup queue policy up to 24 hours.
68018	Sometimes the internal API to communicate among processes can get a request for the size of data to be too big for the process to handle. Resulting in hanging process. This issue is now fixed resulting in error, instead of hanging processes.
66507	[Oracle Windows] All jobs fail if TNSNAMES.ora file is in non-default location.
69673	SAP HANA Log backup fails during discovery phase when multiple base path log backup entries are present in the global.ini file.

Tracking Number	Description
68027	Unable to set "D" flag for Differential backup for SAP HANA sump based backup schedule.
69191	SAP HANA Scale out backup and restore failure as VDP Connector is unable to determine the master node.
69218	SAP HANA - Restore job should be marked as "failed" if any of the restore script fails.
67567	Enhancement: (SAP HANA) Allows the user to use system DB user store key to backup tenant databases.
69688	Full backup is not purging the staging disk after a differential backup.
69087	Partial restore of exchange fails with consistency group.
67829	[Oracle] ASM diskgroup is deleted if remount fails.
70027	AppAware mount and restore fails when SQL backup with NFSDS gets a corrupted staging disk.
68948	Restore MAC address does not work properly on VMs with static MAC addresses.
68303	[Oracle] oratab (/etc/oratab) file corrupts if AppAware mount fails.
68521	Some times VM fails to connect with NFS datastore disks.
67675	NFS mode is not used during restore for the application back up. This issue is fixed now and NFS mode is supported with rdmmode parameter.
66650	Regular cleanup of job history records may result in out of memory issue when there are many records.
66965	Fixed a security issue that was potentially allowing upload of malicious code into an appliance that could then be executed to bypass rbash security.
69150	Fixed a memory leak in jobs to object storage.
48093	In-band (incremental only) volume names are limited to 15 characters. This issue is now fixed and allows volumes with long names.
68014	Enhancement: VSS writer applications are not excluded as part application discovery that causes problem in protecting the applications.
69082	Policy manager crashes if vault pools are forcefully removed with unexpired images.
69515	Oracle Bequeath listener process holding ASM diskgroup devices even after unmount of diskgroup, causing refresh to fail.
70317	Need to change the advanced setting name for storage snapshot backups of custom App databases.

Tracking Number	Description
69496	Missing Asia-southeast1-c zone in UI. This issue is now fixed.
70515	SAP HANA backup jobs fails to find master node when FQDN and short name aliases are not added for virtual hostname.
70144	VDP Desktop is redirecting to IVGM login page when user clicks the Report Manager icon.
70575	Remove **Report Manager Deployment Guide** from the Resource Center. This issue is now fixed.
69303	Compression is not working in 9.0.2 with Azure pool. This issue is now fixed.
71034	Traditional clone for Sybase or DB2 is not supported. This issue is now fixed.
68535 71283	There is a possibility of SQL injection in appliance. This issue is now fixed.
71252	MS-SQL operation to mount job is failing for the cluster host.
49678	Disabled status is not showing in IVGM dashboard.
70674	AppAware mount of custom database applications from vault image tries to load some settings from restore-init xml as stored in backup-data. As these options are not populated correctly for vault images, connector is crashing.
71671	Enhancement: Support OnVault pool for NIFCLOUD.
54228	TLS 1.0 will no longer be enabled by default. This means any custom API integration that uses TLS 1.0 will need to be updated to use TLS 1.1 or 1.2. We strongly recommend the use of TLS 1.2.

Security and Vulnerability Fixes

Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.3 includes the common names for vulnerabilities and exposures (CVEs), IBM InfoSphere platform issues, and database liabilities resolved as of this release.

The following table lists Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.3.

Fixed Security and Vulnerabilities in IBM InfoSphere VDP 9.0.3

Tracking Number	Description
69074	CentOS Update for libssh2 CESA-2019:1652 centos6
69099	CentOS Update for bind CESA-2019:1492 centos6
69101	CentOS Update for openssh CESA-2019:0711 centos6
69103	CentOS Update for python CESA-2019:1467 centos6
68433	CentOS Update for libXfont CESA-2015:1708 centos6
68435	CentOS Update for kernel CESA-2019:1488 centos6
69501	CentOS Update for vim-common CESA-2019:1774 centos6
69503	CentOS Update for java CESA-2019:1811 centos6
68480	CentOS Update for openssh CESA-2019:0711 centos6
69629	CentOS Update for vim-common CESA-2019:1774 centos6
68352	CentOS Update for libXfont CESA-2015:1708 centos6
70663	CentOS Update for openssl CESA-2019:2471 centos6
70683	CentOS Update for dbus CESA-2019:1726 centos6
71712	CentOS Update for vim-common CESA-2019:1774 centos7
70807	CVE-2019-14439
70782	CVE-2018-1000632

Command Line Interface Fixes

CLI additions and improvements for IBM InfoSphere VDP 9.0.3 include deprecated commands, new arguments, and recommended usages in the latest version of the CLI, API, and SARG. Refer to the latest version of the following publications for more details:

- *CLI Reference*
- *RESTful API Reference*
- *SARG (Simple Report Generator) User Guide*

The following table lists CLI additions and improvements in IBM InfoSphere VDP 9.0.3.

CLI Changes in IBM InfoSphere VDP 9.0.3

Tracking Number	Description
68200	RPO value in the `mkpolicy` command accepts value as zero. This issue is now fixed.

Known Issues

The following are the known issues in IBM InfoSphere VDP 9.0.3:

- Hyper-V only: IBM InfoSphere VDP Appliance install may fail due to duplicate by-path identities of volumes. [39703]

  Workaround: Create dummy disk in SCSI controller as LUN0, and all other disks are attached to one SCSI controller using other LUN numbers.

- Mount job takes more time than expected when VM backup image is mounted back to the same host. [65437]

- VM mount fails on SAS controller with mount mode as vRDM or NFS to hypervisor. [41748]

- System State backup fails on Windows 2012 host when the host has un-initialized disk. [45989]

- P2V Recovery fails with incorrect error message if the internal IP is in use.[65753]

- [HP-UX only] Remount of unmounted image with different Oracle SID is failing while creating the audit file destination. [68069]

- [Oracle Enhancement] Need to improve the getOracleHome function call using the cache information. [67812]

- VMware system recovery with Migrate-VM flag fails with error "Failed to convert volumes to virtual disk" for sles11sp4. [65321]

- VMware System State recovery may fail due to time out issue while installing VMTools.[66702]

- Backup/Mount job could fail on Linux when VDP Connector tries to scan and remove LUNs in parallel. [56767]

- AppAware mount to a Clustered SQL Instance fails, if the CG has SQL and file system. [66175]

- In rare cases, a job takes more slots than needed thus preventing OnVault jobs to run their sub jobs. [64052]

- In rare cases, Oracle fails to release IBM InfoSphere staging disks on AIX hosts even after dismounting the disk group leading to permanent failures. [63150]

- The "udstask importvaultbackup" command fails with NullPointerException error. [65456]

- AppAware fails if *sqlplus* output contains "\t \n" characters at the end. [61251]

- Sometimes IBM InfoSphere appliance process (udpmqd) hangs and terminates abnormally while closing a client session. [65736]
- System State recovery fails for VMBackup with Data Disks Migration flag [Linux SLES 11] [64681]
- In MS-SQL Clone window, when the target host is changed after selecting a database, we might see prefix and suffix options for the SQL Server Database Name instead of SQL Server Database Name. [60539]

  Workaround: In regular workflow this is not an issue, it only happens if we change target host after selecting only one database, the workaround is to de-select the database and select again or use IVGM UI.

- [NFS Datastore only] DAR mount job is failing with error "VDP Connector failed to mount the logical volumes present on the LUN mapped from IBM InfoSphere". [62367]
- Job fails with error "terminated with signal 11, segmentation fault" when IBM InfoSphere appliance fails to send configuration files to VDP Connector [60665]
- [SQL only] Issue in filtering child applications from the VDP Desktop, it displays duplicate entries in eligible members. [62013]
- System state conversion on Oracle Enterprise Linux 6.4 is failing with error "Failed to convert volumes to virtual disk". [62192]
- System state conversion on Windows 2003 is failing with error "1106: Failed to get IP address of virtual machine after conversion". [62130]
- [Oracle only] Backups and mount jobs not working properly for ASM RAC on VMs that are in clustered ESX hosts. [26456]
- Remote protection check does not alert if there is no response from the remote cluster. [54523]
- Encrypted values should be handled differently when the appliances are in the shared mode as the values from the master appliances are replicated to slaves. [58175]
- Enhancement: On demand snapshot job should trigger downstream jobs like Dedup and OnVault. [55956]
- Mount job may fail for SQL database while mounting the database back to the original server, using the original name. [42654]
- Mount jobs to an OpenVMS host does not contain the UDID disks already mapped. [34795]
- In certain environments, Oracle backups fail if the instance have a different own for its process and its `ORACLE_HOME` location.

  Workaround: Discover the instance while using an Oracle OS user instead of a SAP user

- Hyper-V VMs only: Some disks go offline for mounted and cloned VMs. Mounts fail with following error: `Error Message: 5024: VDP Connector: Failed to create VSS snapshot for backup. The writer experienced a non-transient error. If the backup process is retried, the error is likely to reoccur.` [50142]

  Workaround: Find if there are offline disks and volumes on the VM, and bring those disks/volumes online.

- VMs with Japanese names do not permit incremental backups. [49599]
- In certain environments, VDP Appliance continuously reboots due to a VMXNET3 driver.

  Workaround: Update to ESXi 6.5 U1 or later.

- CLI only: Command `udstask runworkflow` does not return on workflows that have an "On Demand" schedule type.

  Workaround: Make a clone of the workflow, then run the cloned workflow. It is auto deleted after it is run.

  a. Clone the workflow you want to run:

     `udstask cloneworkflow <workflow ID>`

  b. To specify the source image to use when running this workflow, run:

     `udstask addflowproperty -name image -value <image name> <clone workflow ID>`

      c.   To run the cloned workflow and auto-delete it upon completion:

```
udstask runworkflow <clone work flow ID>
```

- RHEL 7.2 only: In Red Hat Enterprise Linux 7.2, a bug exists in the caching daemon that causes LVM commands to hang. [29461]

  Workaround: Update to RHEL 7.3 or later.

- SQL Server database names do not provide a suffix field in application-aware mounts work-flow windows.

- Solid state drives cannot be changed or re-assigned from ZFS Index Log (ZIL) to Dedup index functions in the VDP Desktop. [25073]

  Workaround: The ZIL SSD will have status "`act_ded_pool000`". You can perform this in the CLI using these commands:

  - o   `udsinfo lsssd`

  - o   `udstask rmssd -diskpool <id><wwid>`

  - o   `udstask addssd -diskpool <id><wwid>`

  For details on these commands, refer to the ***CLI Reference***.

- If system user is not used as a backup user, then application-aware mount sets a default password for the system user. [31734]

  Workaround: The default password (identical to Oracle default password) is: **`change_on_install`**

- After switching to a temporary ASM disk group, and trying to use a different ASM disk group, an unmount +delete must occur in order for the operation to succeed. This un-mounts and drops the temporary ASM disk group before you can proceed with switch to the new ASM disk group. [31278]

  Workaround: To perform this unmount +delete, use the CLI command:

```
udstask unmountimage -image <mounted image> -delete
```

- Work-flows with stale images are not cleaned during GC automatically. [30680]

  Workaround: Stale images must be cleaned manually.

- Vault to Azure only: When setting up an Azure instance, a short lived storage drive is available. This device can show up when editing or adding pools. As this drive is only short-lived, it doesn't stay added to the pools across reboots and there might be data corruption when it comes to data in all the zpools like dedup and performance. [29648]

  Workaround: Do not use the default short-lived storage drive.

- After performing a restore operation on MS-SQL Always On Availability Group (AAG) database, the database might be in restoring state on secondary node of the group. [27512]

  Workaround: Manually bring the database in sync state by purging the database on the secondary node and re-initiating the replication.

- Post configuration of a VDP Appliance instance on a Hyper-V server, the Hyper-V server cannot get the IP address of VDP Appliance on Hyper-V manager's Networking tab. [26353]

  Workaround: Open the console for the VM by double clicking the VM name and get the IP address from command line at the VDP Appliance.

- Sometimes Oracle child backup may fail due to missing TNS domain name from *tnsnames.ora* file. [26923]

  Workaround: Unmount and Delete the child application created by the workflow and rerun the same.

- Changing the IP address of the primary NIC using the configuration panel does not change the Cluster IP address and the Operative IP address. [24431]

  Workaround: Use the CLI command `udstask chcluster` to modify the cluster and operative IP address.

- Modified ACLs on folders are not copied during incremental CIFS backup on Isilon NAS storage. ACLs of files within the folders are correctly captured and updated. [21097]

- Snapshot and clone jobs fail after changing the IBM InfoSphere VDP Appliance instance IP address. [20759]

  Workaround: Reboot the VDP Appliance instance after changing the IP address.

- The percentage (%) special character is not supported when specified in a datastore name of an ESX Server. [20544]

- The Managed Data License (MDL) is counted twice when an Oracle database and the file system holding the Oracle data reside in the same consistency group. [20051]

- Under certain circumstances, an expiration job may fail with following error message: [20041]
  `Omd: vdisk has dependent flash copies.`

  This happens only when the following criteria are all true:
  - o   The image being expired is the last snapshot image.
  - o   Backups have been taken from multiple nodes in the cluster.
  - o   One or more nodes previously used for backups are offline.

- If an Oracle host is rebooted while database mounts exist, those mounted databases will be offline after the reboot. [19378]

  Workaround: After host reboot, manually mount the needed file systems and start child database instance.

- If InfoSphere VDP Appliances are forcefully unjoined, protected applications configured to replicate between the appliances may not correctly show the selected template and profile. [16995]

  Workaround: Do not un-join appliances forcefully when they are associated with SLAs.

- Specifying mount point is not currently supported for in-band Oracle ASM databases. [16534]

  Workaround: When performing a mount operation on an in-band Oracle ASM database, leave the Mount Point field empty and proceed with the mount operation.

- Live Clone of a DedupAsync image fails with error '*When attaching a live clone, the parent must be a flash copy*', when a Live Clone operation is performed after a failback operation. [16355]

  Workaround: Wait until a successful DedupAsync job completes, and perform a Live Clone operation.

- During out-of-band file system restoration, the backup data replaces the same production data, but new data since the backup is ignored. [10298]

- When performing a Microsoft Exchange database restore, the restore operation is successful, but some log error messages are noticed in the event viewer, these are actually warning messages. You may safely ignore these messages. [9948]

- Microsoft SQL database has double-byte characters in the name are not supported. [8761]

  Workaround: Rename databases without double-byte characters.

- Windows only: Improper shutdown of VDP Desktop sessions using the cross (X) button may result in running the desktop service in the background. Due to this user may not be able to start a new VDP Desktop session again. [6592]

  Workaround: Kill the VDP Desktop process from the Task Manager and try again. To avoid this issue, close each session using the Desktop menu.

- Due to a known bug in RHEL 5.8 and earlier, and 6.0, out-of-band application backups may result in a kernel panic intermittently. [5253]

  Workaround: Upgrade RHEL version to 5.9 or 6.1 or higher. Additionally, out-of-band applications should be configured to "Keep staging disks mapped between jobs."

- For ESP configuration only: Newly added host transport mode defaults to NFS instead of Block. [60282]

Workaround: Modify the transport mode manually.

- Backup job may fail when large number of jobs running on an appliance for various hosts. [68907]

- SAP HANA: Database restore fails if iSCSI is not configured on the scale-out nodes. [69183]

- [Oracle] AppAware mount job fails for OnVault backup images. [70291]

- [Oracle] In some cases, backup jobs for Oracle 11.2.0.4 database deletes the data file while cleaning up the duplicate data files. [69792]

- Mount job is not shown in System Monitor when using the cluster name for MS-SQL consistency group. [70112]

- File system backup causes out of memory issue when file system has huge list of directories. [68842]

- The host file system table (fstab) entry sequence is not the same as that of the source system after the System State recovery is performed from the backup image. [68905]

- P2V conversion fails if LVM contains Snapshots. [68950]

- Mount from ESP to a VM may fail if host mapping is not done automatically on ESX. [69796]

- MDL calculation is incorrect when the VMDK file resides on NFS datastore. [70003]

- PSRV can run out of memory when processing large number of backup image entries on the IVGM. [69461]

- VMware Virtual Disk Development Kit (VDDK) 6.7 library panic observed on InfoSphere VDP Appliance. This issue is related to VMware's VixDiskLib library.[68537]

- Default NAS snapshot expiration (3 days) is too low and may not be enough to perform the first backup. [70042]

  Workaround: Change the default expiration manually.

- Newly added VM fetches IPV6 instead of IPV4 in VMware environment. [71141]

- MDL for Linux/Oracle application of size more than 100TB on ESP is shown incorrectly. [71043]

- Oracle restore may fail if there is a time zone difference between host and application. [71036]

- Partial images should not expire as per the retention by scheduler. This causes the backup to start from beginning. [69769]

- In some cases, Hyper-V VM backups may fail with an internal error "The allocated extents do not match". [71879]

- System State backup fails to recover for Windows 2016 when static IP address is configured on it. [71942]

- In some cases, settings configured at policy level are not overridden with the values defined at the application level. [70667]

- Using unmount and delete option from Desktop manager on the work-flow mounted leaves duplicate app entries in IVGM. This results in "Error mounting backup image on host: Cannot find AppAware data for application <app id> on host <host id> when re-provisioning work-flow of Oracle applications from IVGM." [71909]

  Workaround: Use the unmount and delete option from IVGM instead of Desktop Manager.

- Windows oracle backup fails while fetching the pfile. [71505]

- Red Hat Enterprise Linux (RHEL) 7.2 conversion to AWS/GCP fails with an error "Failed to convert volumes to virtual disk". [68083]

- OEL6.4 VM backup conversion to AWS fails to mount the volume on target host. [71701]

- Red Hat Enterprise Linux (RHEL) 5.11, CentOS 5.11 System State conversion to GCP fails with an error "Could not connect to backup host. Failed to connect to connector on VM after power ON (after conversion)". [71985]

- Red Hat Enterprise Linux (RHEL) 5.3 System State conversion to AWS fails with an error "Could not connect to backup host. Failed to connect to connector on VM after power ON (after conversion)". [71969]

- CentOS 7.0 System State conversion to AWS/GCP fails with an error "Failed to convert volumes to virtual disk". [71971]

- Sles11sp4 and Sles12sp4 System State backup conversions to AWS fail with an error "VDP Connector: Failed to mount file system". [71979]

- System Recovery failed on AWS target for Windows 2012 R2 Server. [71905]

- CentOS 7.6 recovery to AWS failed with an error "Failed to re-config and reboot VM used for conversion. VM bootup has timed out". [71911]

- Unable to connect to GCP target host on Windows 2008 R2 Server after conversion. [71913]

- System Recovery fails on Azure target for Windows 2016 Server. [71947]

- System State backup is failing for VM with thin provisioned logical volumes configuration. [72179]

- System Recovery is failing with an error "Changing property 'osDisk.osType' is not allowed". [72309]

- Red Hat Enterprise Linux (RHEL) 7.0 System Recovery migration failed on Azure. [72291]

- Red Hat Enterprise Linux (RHEL) 5.2 System Recovery and Migration failed on Azure. [72296]

- CentOS 7.3 System Recovery failed on Azure. [72300]

- OEL 6.4 System Recovery failed on Azure. [72304]

Limitations and Restrictions

The following are the limitations and restrictions in IBM InfoSphere VDP 9.0.3:

- Deploying IBM InfoSphere VDP Appliance OVA on VMware 6.7 u2 requires SHA1 hashing algorithm to be converted to SHA256 hashing algorithm using ovftool.exe provided by VMware. Get in touch with IBM InfoSphere services team for more information if you want to deploy a VDP Appliance on VMware 6.7 u2.

- Dynamic disks are not supported for staging disks.

- Backups created on RHEL 7.3 systems cannot be mounted to RHEL 6.8 systems. [47664]

- Hyper-V only: VM runs a full backup instead of a low splash backup when VMs storage is moved from one cloud service vendor to another. [24783]

- ESXi hosts with time that does not match with its VMware jobs fail. This is as designed by VMware. [39241]

- System State Recovery fails if there are any security software in the backup image which can block execution of binaries during System State recovery. Consider exempting the target disk from the interfering software for the duration of the operation. [64152]

- Remote dedup jobs cannot record ingest, post-dedup, and post-compress stats on remote side. [16938]

- Exchange virtual machines only: Snapshots with log truncation enabled occasionally fail with error: `5584: VDP Connector failed to truncate log with unknown error.`

  Workaround: If any databases are in a bad state (such as `Dismounted, Failed and Suspended`) Microsoft Exchange writer returns error `VSS_E_WRITER_RETRYABLE` during log truncation request. If all databases are in good state, then only the log truncation job will succeed. This is as designed.

- StreamSnap job duration grows exponentially when there is a delay between two clusters. [26746]

- On VVOL-based setups, if the appliance determines that LAN-free mode is applicable, VMware backups fail (VVOL-based VMDKs cannot be accessed in SAN mode). [38252]

- Image clones do not provide a GUI option for a mount point or ASM disk group. [31786]

- Database re-provision fails when Oracle database authentication is changed from OS to DB. [27586]

Workaround: Create a new Application Aware mount database.

- (Linux Generic Applications only) The combined length of Logical Volume Name and Volume Group name hosting that Logical Volume should not exceed 108 characters. [26839]

- Rebooting a Linux host during a backup operation using IBM InfoSphere CBT driver may cause the next backup job to be a full backup rather than an incremental backup. [26880]

- Performing application aware mounts to multiple hosts in a single work-flow is not supported. [27174]

- Oracle 12c with PDB stored in File System format (not ASM) is only supported on Linux. Unix and Windows platforms are unsupported at this time. [23773]

- Reducing the disk group size is not supported due to Oracle ASM limitation. [23925]

- AIX, iSCSI only: Only single node Oracle ASM RAC clusters are supported on AIX using iSCSI. [23401]

- The log backup frequency mentioned in minutes via VDP Desktop SLA Architect is rounded to the nearest multiple of 5 minutes. [22901]

- If a NAS dataset consists of file streams, the backup job ignores these file streams and captures the rest of the data. [19262]

- Square brackets ([ ]) or forward slash (/) in a VMware datastore name are not supported. [8872]

- VDP Connector fails to auto-configure iSCSI ports of the third party iSCSI initiator on Windows. [7784]

- HP-UX PV Links on 11.23 will only allow 8 paths per volume group. Due to this restriction, it is important that the SAN zoning is configured to have no more than 8 paths per staging LUN and/or in-band disks. For best results, have separate zones configured for the Host-to-VDP and VDP-to-Storage.

  Example: Perform Application Aware mount on host A using SID db1, then Unmount the database.Remount the database to target host B using SID db2 while host B has a running database with name db1. Then the Application Aware remount operation may shutdown the database db1 on host B.

- Installtrustedcertificate command works in CLI, but does not work with REST API: [64579]

  Workaround: Log on to CLI, copy the `cert.pem` and `key.pem` to `/home/admin/upload` folders, and execute the following command:

  ```
  udstask installtrustedcertificate -certfile cert.pem -keyfile key.pem
  ```

Limitation in LDAP usage with IBM InfoSphere VDP 9.0.3:

- Support of referral by default feature is ignored. However, you can optionally turn on this feature by changing the "ldap.referral.support" parameter value to true.

- For Active Directory, the Domain Users group is not supported in this release. It does not appear in the list of mappings.

4   IBM InfoSphere VDP 9.0.2 Release Notes

IBM InfoSphere VDP 9.0.2 includes major new features as well as assorted performance enhancements, security improvements, and bug fixes. To install or upgrade, please schedule a time with IBM InfoSphere Support.

Topics:

- What's New
- Upgrade Paths
- Resolved Issues
- Known Issues
- Limitations and Restrictions

What's New

The following are the new features, enhancements and changes in IBM InfoSphere VDP 9.0.2:

- Added support to send data for one application to multiple OnVault pools. Included in this feature are templates containing snapshot policies, and also those containing direct to OnVault policies.
- Added support for the System Management web interface to display IP information for VDP Appliances in the cloud, as well as allowing configuration for DNS, NTP, manual HOSTS file updates, and network troubleshooting skills for these appliances.
- Oracle 19c: IBM InfoSphere VDP now supports protecting Oracle 19c databases.

Note: *Supported only on Linux operating systems.*

- See the Resolved Issues section for list of issues addressed in this release.

Upgrade Paths

IBM InfoSphere VDP systems running 7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.5 can be upgraded directly to 9.0.2. Older versions (<7.x) should be upgraded first to one of these releases (7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.5).

Resolved Issues

Fixes in this release fall into three distinct categories as follows:

- Functionality and Usability Fixes
- Security and Vulnerability Fixes
- Command Line Interface Fixes

Note: *All the issues fixed prior to 8.1.3 release are already part of 9.0.2*

Functionality and Usability Fixes

The following table lists issues that have been addressed in IBM InfoSphere VDP 9.0.2:

Functionality and Usability Fixes in IBM InfoSphere VDP 9.0.2

Tracking Number	Description
27488	IBM InfoSphere VDP Appliance database is now backed up to a different directory and the same is available even when primary pool is inaccessible.
64536	Relax preflight checks to allow racnodelist to be specified for standalone mount also.
66092	AppAware mount job fails with following error when /act is a symbolic link: "VDP Connector failed to mount the logical volumes present on the LUN mapped from VDP."
65282	If VDP Connector is not running on some nodes of RAC cluster or some production nodes are not accessible or never discovered from IBM InfoSphere appliance, ASM switch restore does not fail anymore. It performs switch mount to available nodes.
62227	Ignoring failures in removing old staging disks on some RAC nodes after production application is expanded causes all further jobs to fail for ASM backups with error "5180: ASM preferred disk group already exists".
64527	Oracle backup creates new staging disks and performs full backup even for a small increase in application size. This issue is fixed now, new staging disks are created only when the application size crosses 10% threshold of the existing staging disk size.
64716	Oracle ASM backup and mount fails when "compatible.rdbms" attribute value is set as 12.0.0.
64370	PostgreSQL database backup hangs if password is required to connect to database.
65365	ASM Re-balance: Need to show ASM disks from Oracle nodes for all supported scenarios.
66177	Consistency group backup fails with offline application error even after enabling "skip offline applications" option in the advanced settings.
61969	Large number of vDisks (9000) can cause space on /var/log to run low.
65572	Enhancement: Discovering a CIFS application currently requires some drive mapping and other specific things.
66189	[Windows with Filter Driver only] In very rare cases, upgrading the VDP Connector could cause Windows to crash with a BSOD. This has been fixed.
65601	If iSCSI sessions reaches to 100 on a specific host, subsequent iSCSI session fails to establish connectivity with InfoSphere VDP Appliances.
34793	Unable to unmap LUN-0 properly while un-mapping all the mapped LUNs from the host.
61210	Rest API 'OPTIONS' method exposes WADL information without requiring authentication.

Tracking Number	Description
65839	Unable create partition on GPT disk in Windows 2003 R2.
66793	System State backup fails if some System Writer application is spanned on multiple volumes.
66149	Log truncation functionality does not work for DirectOnVault jobs.
62591	PSRV may hang or crash during initialization due to removal iSCSI information of host.
65821	Fail to get Oracle user name in case of multiple Oracle users and homes are present in same host.
64428	Oracle ASM backup runs as full every time due to oracle backup script logic issue.
66153	Oracle AppAware mount fails if backup image contains multiple log images.
65061	Enhancement: Provided a new provisioning option "Use existing Oracle password file" with a default value of false. If this option is selected during AppAware mount, then the mount/unmount jobs will not create or delete orapw file. They will continue to use any existing file under standard ORACLE_HOME path.
65702	If ASM disk group name is not explicitly selected during mount or workflow, VDP Connector generates a random name. In the rare case where this random disk group name is already in use, job uses the incorrect disk group leading to unpredictable results. With this fix, random disk group name is validated before use.
64500	Oracle log staging disk may contain files older than retention period.
65073	Mount job fails when application name discovered in VDP is in different case than the one found in MSSQL.
67000	NFS staging mount hangs when Oracle backup job is canceled on Oracle Enterprise Linux host.
64258	Unable to run RESTAPI call for the command udsinfo lsslaviolation.
65736	Sometimes InfoSphere VDP Appliance process (udpmqd) hangs and terminates abnormally while closing a client session.
66908	Dedup Clone fails to honor user specified pools.
66414	Unable to un-protect the application that has remote images on remote side.
61397	Unable to list OnVault images when host ID prefixed with alphabets.
66342	AppAware mount to VMware fails during cleanup due to active state of application. This issue is now fixed now by allowing the application to shut down before cleanup.
66778	Oracle AppAware mount fails as /etc/oratab does not contain $ORACLE_HOME for ASM.

Tracking Number	Description
67740	Enhancement: Oracle 19c support now available on Linux.
65927	Device details for ASM disk-group are not fetched correctly resulting in out of band backups for Oracle child applications.
67395	Added a new connector configuration option to disable obsolete file deletion. Delete Oracle Obsolete can be set to "false" in connector.conf to disable deletion of obsolete files for Oracle backups.
63685	Enhancement: Added support for In-band backup using Microsoft VSS provider.
61271	Object storage jobs could sometimes fail due to an incorrect year for request signing. This issue is now fixed.
64395	Cannot execute CLI commands on VDP Appliance using remote host.
31631	DB + Log jobs report failure even when the db backup succeeds.
65305	An error occurred while cloning service level template (SLT).
66029	When some of the node in an ASM is not available, the preflight check may fail.
66192	Unable to run pre and post scripts during workflow-unmount operation.
61397	Unable to list OnVault images when host ID prefixed with alphabets.
64487	Inode count in /tmp partition of Appliance is increasing in long run.
64632	Temporary files not deleted properly from tmp folder after performing import operation.
19378	If an Oracle host is rebooted while database mounts exist, those mounted databases will be offline after the reboot.
67135	Cluster name value shows as null in email alert summary, this issue is now fixed.
67669	System Monitor page displays "Error communicating with the Appliance" pop-up message when selecting filter options.
67717	Backup images not displayed under restore tab of applications.
65425	Enhancement: Prevent Windows from zero-initializing portions of large files.
66799	StreamSnap image with SQL user login fails to perform mount operations.
67185	During NFS backups when application got resized and backup job failed, subsequent backup jobs fail with failed to discover VG on staging disk.

Tracking Number	Description
66972	The reserved user name check is performed during user updating even if the user name is not changed.
62546	Conversion on AWS fails with larger instance flavor (r4.8xlarge) on Linux. This issue is now fixed.
67335	Daily backup of the actnet configuration does not work after upgrade to 9.0.x release.
67065	Upgrade of a point release with hotfix to major release resulted in an error.
66303	NFS OnVault mount job gets stuck sometimes during mount operation, this issue is now fixed.
65473	[Oracle] On Demand LiveClone workflow fails due to incorrect handling of PDB directory structure.
64936	Enhancement: Provided advanced parameters for SQL log backup.
67356	SQL DB and Log backup jobs are failing with error 175.
47562	System State backup fails for Non-English hosts, this issue is now fixed.
66700	Backup of a new mounted VM with NFS Datastore fails with null UUID.
66992	During System Recovery VDP Connector fails to download rpms from the appliance when cluster IP of the appliance is not reachable from recovery VM.
60717	RCT-enabled Hyper-V backups may fail with fingerprint verification errors due to unmapped portions of the disk being different.
67290	Large file size changes in SQL applications result in staging disk full errors.
66668	Dedup jobs are not run as per the schedule.
64628	OnVault expiration job may fail due to retry timeout logic issue.
61866	Enhancement: HTTPS protocol must be used instead of HTTP during VDP Appliance configuration.
63713	Getting NumberFormat exception while discovering larger size NFS file systems, the issue is noticed with file systems size greater than 9223372036854775807. This issue is now fixed.
66607	Enhancement: Added China Beijing and Ningxia and EU regions for OnVault.
67894	If a consistency group (with skip offline database set to true) has SQL databases from multiple instances and database are of the same name then and 1 of them is offline, backup skips both the databases.
66607	Cloud-backer process not responding due to some issue resulting in all expiration slots unavailable for a prolonged period leading to excessive snapshot and vDisk utilization.

Tracking Number	Description
64511	SSD status always shows as "None" through CLI and GUI even after SSD is configured.
64262	OutOfMemory issue occurs when replication of huge number of backups are performed from VDP Appliance to IVGM.
67623	ESX 6.0. systems are using incompatible VDDK libraries. This issue is now fixed.

Security and Vulnerability Fixes

Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.2 include the common names for vulnerabilities and exposures (CVEs), IBM InfoSphere platform issues, and database liabilities resolved as of this release.

The following table lists Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.2.

Fixed Security and Vulnerabilities in IBM InfoSphere VDP 9.0.2

Tracking Number	Description
63993	CentOS Update for sos CESA-2016:0152
66159	CentOS Update for openssh CESA-2019:0711
66161	CentOS Update for kernel CESA-2019:0717
66751	CentOS Update for openssh CESA-2019:0711
65198	CentOS Update for sos CESA-2016:0152
65200	CentOS Update for polkit CESA-2019:0420

Command Line Interface Fixes

CLI additions and improvements for IBM InfoSphere VDP 9.0.2 include deprecated commands, new arguments, and recommended usages in the latest version of the CLI, API, and SARG. Refer to the latest version of the following publications for more details:

- ***CLI Reference***
- ***RESTful API Reference***
- ***SARG (Simple Report Generator) User Guide***

The following table lists CLI additions and improvements in IBM InfoSphere VDP 9.0.2.

CLI Changes in IBM InfoSphere VDP 9.0.2

Tracking Number	Description
65458	The lsvaultstat command not refreshing the details after Vault image expiration.
64859	The "udstask chhost -connect2actip" command fails with error ACTERR-010023.
67163	Clone command does not support rdmmode setting, nor does it support honoring transport setting for VMs. This issue is now fixed that the transport for a VM is honored. It allows setting NFS for the vCenter so all VMs of the vCenter honors the NFS rdmmode setting.

The following table lists SARG additions and improvements in IBM InfoSphere VDP 9.0.2.

SARG Changes and Enhancements in 9.0.2

Tracking Number	Description
64227	**reportapphistory**: New report to display MDL and snapshot pool usage history between two points in time (now and x days ago). **reportcloneconsumption**: Enhanced the report to improve the quality of the data after extensive testing. **reportdisables**: Added -u option to print username of user who did the disable where possible **reporthealth**: Added extra disk health check for VDP Appliance **reportiostats**: Blocked reportiostats from running via REST Command **reportjobs**: In CSV mode, show queue date and queue time and constraint info for all jobs. This will help to debug **reportlist**: Added reportapphistory **reportmountedimages**: If a single DB inside a Consistency Group is mounted, the mount is shown as 'NotAppAware', when this is not true. Fix is to correctly detect this and show the database name of the relevant DB. **reportorgusage**: Added -p to report usage per host **reportsnappool**: Handle rare case where replicated logs are counted twice and/or are only counted as staging disk not log disk.

Known Issues

The following are the known issues in IBM InfoSphere VDP 9.0.2:

- Hyper-V only: IBM InfoSphere VDP Appliance install may fail due to duplicate by-path identities of volumes. [39703]

    Workaround: Create dummy disk in SCSI controller as LUN0, and all other disks are attached to one SCSI controller using other LUN numbers.

- Clone of Oracle ASM backup to VMware VM fails with "Failed to find IBM InfoSphere node for ASM disk". [67159]

- Mount job takes more time than expected when VM backup image is mounted back to the same host. [65437]

- VM mount fails on SAS controller with mount mode as vRDM or NFS to hypervisor. [41748]

- System State backup fails on Windows 2012 host when the host has un-initialized disk. [45989]

- P2V Recovery fails with incorrect error message if the internal IP is in use.[65753]

- ASM switch and re-balance is leaving some legacy parameters and dependencies that point to source disk groups. [65431]

- Sometimes Oracle AppAware mount instance name fetching taking longer time depending on the number of instances running on the host. [67812]

- VDP Connector fails to extend disk group when new staging disk is added to a staging disk group with file system type as ext4. [68473]

- Unable to pick PRDM as default mode for all restore jobs if the backup is IVGM and host is ASM. [68224]

- Oracle AppAware mount/Restore job fails and log backup succeeds without any new log being backed up. [68361]

- Hyper-V mount fails if VM configuration file is placed on root volume without a trailing backslash character. [67725]

- OnVault jobs are failing due to wrong values passed to cloud-backer. [55471]

- Some times VM fails to connect with NFS datastore disks. [68521]

- While scan job is running, the process may delete a change list or change list directory. [68554]

- Un-mark ignored link is displaying after VM migration for protected application. [68492]

- [HP-UX only] Remount of unmounted image with different Oracle SID is failing while creating the audit file destination. [68069]

- MS-SQL consistency group backup fails to capture a database, if the consistency group has skip offline database enabled, and it has another offline database with same name from a different instance. [67894]

- SQL Only - Transaction log replay fails if the captured log file does not have any new transactions during mount/restore/clone.[67790]

- [Oracle-Live Clone Workflow] Post Live clone AppAware mount fails due to incorrect control file parameter. [62337]

- [Oracle Enhancement] Improved the getOracleHome function call using the cache information. [67812]

- [Oracle] Oracle Home discovery fails if soft-link exists. [67862]

- [Oracle] Backup fails due to some issue in fetching the right group owner of RMAN background process. [67938]

- VMware system recovery with Migrate-VM flag fails with error "Failed to convert volumes to virtual disk" for sles11sp4. [65321]

- Deletion of custom snapshot pool fails when created with default name. [53457]

Workaround: Create snapshot pool with non default name.

- Incorrect transport mode is selected during restore for NFS based backup images. [67675]
- VMware System State recovery may fail due to time out issue while installing VMTools. [66702]
- Unable to set "D" flag for Differential backup for SAP HANA dump-based backup schedule. [68027]
- MDL calculation for Oracle child database application is wrongly calculated. [67354]
- [Oracle] Permanent staging disk drop due to remount failure. [67829]
- [Oracle] Fail to find incarnation if the version is lower. [67474]

  Workaround: Take a new level-0 backup.

- Backup/Mount job could fail on Linux when VDP Connector tries to scan and remove LUNs in parallel. [56767]
- Priority of the job is not reflected correctly on IVGM UI when it is modified using "actIVGMDBM" utility. [60160]
- AppAware mount to a Clustered SQL Instance fails, if the CG has SQL and file system. [66175]
- In rare cases, catchup jobs can get into dequeuing and queuing cycle when they do not get job slot. [65088]

  Workaround: Increase the job slots for appropriate job types.

- In rare cases, a job takes more slots than needed thus preventing OnVault jobs to run their sub jobs. [64052]
- In rare cases, Oracle fails to release VDP staging disks on AIX hosts even after dismounting the disk group leading to permanent failures. [63150]
- Users are not warned about unsupported configuration when an Oracle application is protected with ESP pool in the profile and Oracle LUNs are presented using pRDM. [60282]
- The "udstask importvaultbackup" command fails with NullPointerException error. [65456]
- AppAware fails if *sqlplus* output contains "\t \n" characters at the end. [61251]
- Sometimes InfoSphere VDP Appliance process (udpmqd) hangs and terminates abnormally while closing a client session. [65736]
- The host deletion confirmation pop-up continue to remain visible even though a host is deleted. Successive click on "Yes" may result in "Application Node Delete Error". [64805]

  Workaround: This message can be safely ignored by clicking on "No" button.

  SSD configuration on VDP Appliance deployed on Hyper-V is throwing an error "Fatal error: could not determine WWID for <disk device>". [65922]

- Snapshot of VM using VDPUser results in the following error "Failed to create disk reader for fingerprint calculation" [61634]

  Workaround: Use Administrator user.

- System State recovery fails for VMBackup with Data Disks Migration flag [Linux SLES 11] [64681]
- Unable to list OnVault images when host ID prefixed with alphabets. [61397]
- Creation of Template clone fails due to API call timeout. [65305]
- P2V (Physical to Virtual) job fails with an improper error message if internal IP is already reserved. [65753]
- In MS-SQL Clone window, when the target host is changed after selecting a database, we might see prefix and suffix options for the SQL Server Database Name instead of SQL Server Database Name. [60539]

  Workaround: In regular workflow this is not an issue, it only happens if we change target host after selecting only one database, the workaround is to de-select the database and select again or use IVGM UI.

- [NFS Datastore only] DAR mount job is failing with error "VDP Connector failed to mount the logical volumes present on the LUN mapped from VDP". [62367]
- Job fails with error "terminated with signal 11, segmentation fault" when InfoSphere VDP Appliance fails to send configuration files to VDP Connector [60665]
- [SQL only] Issue in filtering child applications from the VDP Desktop, it displays duplicate entries in eligible members. [62013]
- System State conversion on Oracle Enterprise Linux 6.4 is failing with error "Failed to convert volumes to virtual disk". [62192]
- System State conversion on Windows 2003 is failing with error "1106: Failed to get IP address of virtual machine after conversion". [62130]
- [Oracle only] Backups and mount jobs not working properly for ASM RAC on VMs that are in clustered ESX hosts. [26456]
- Application Aware mount fails when there is a space in datafile name. [61768]

  Workaround: Create the datafile names without space.
- Consistency dates for database + log backups are using the start dates instead of the database or log consistency dates. [39020]
- Remote protection check does not alert if there is no response from the remote cluster. [54523]
- Encrypted values should be handled differently when the appliances are in the shared mode as the values from the master appliances are replicated to slaves. [58175]
- Enhancement: On demand snapshot job should trigger downstream jobs like Dedup and OnVault. [55956]
- Hyper-V only: VDP Appliance install may fail due to duplicate by-path identities of volumes. [39703]

  Workaround: Create dummy disk in SCSI controller as LUN0, and all other disks are attached to one SCSI controller using other LUN numbers.
- Mount job may fail for SQL database while mounting the database back to the original server, using the original name. [42654]
- Remote protection check does not alert when there is no response from the remote cluster. [54523]
- Consistency dates for database + log backups are using the start dates instead of the database or log consistency dates. [39020]
- Mount jobs to an OpenVMS host does not contain the UDID disks already mapped. [34795]
- In certain environments, Oracle backups fail if the instance have a different own for its process and its `ORACLE_HOME` location.

  Workaround: Discover the instance while using an Oracle OS user instead of a SAP user
- Hyper-V VMs only: Some disks go offline for mounted and cloned VMs. Mounts fail with following error: `Error Message: 5024: VDP Connector: Failed to create VSS snapshot for backup. The writer experienced a non-transient error. If the backup process is retried, the error is likely to reoccur.` [50142]

  Workaround: Find if there are offline disks and volumes on the VM, and bring those disks/volumes online.
- VMs with Japanese names do not permit incremental backups. [49599]
- In certain environments, VDP Appliance continuously reboots due to a VMXNET3 driver.

  Workaround: Update to ESXi 6.5 U1 or later.
- CLI only: Command `udstask runworkflow` does not return on workflows that have an "On Demand" schedule type.

  Workaround: Make a clone of the workflow, then run the cloned workflow. It is auto deleted after it is run.

a. Clone the workflow you want to run:

```
udstask cloneworkflow <workflow ID>
```

b. To specify the source image to use when running this workflow, run:

```
udstask addflowproperty -name image -value <image name> <clone workflow ID>
```

c. To run the cloned workflow and auto-delete it upon completion:

```
udstask runworkflow <clone work flow ID>
```

- RHEL 7.2 only: In Red Hat Enterprise Linux 7.2, a bug exists in the caching daemon that causes LVM commands to hang. [29461]

   Workaround: Update to RHEL 7.3 or later.

- SQL Server database names do not provide a suffix field in application-aware mounts work-flow windows.

- Solid state drives cannot be changed or re-assigned from ZFS Index Log (ZIL) to Dedup index functions in the VDP Desktop. [25073]

   Workaround: The ZIL SSD will have status "act_ded_pool000". You can perform this in the CLI using these commands:

   o   udsinfo lsssd

   o   udstask rmssd -diskpool <id><wwid>

   o   udstask addssd -diskpool <id><wwid>

   For details on these commands, refer to the ***CLI Reference***.

- If system user is not used as a backup user, then application-aware mount sets a default password for the system user. [31734]

   Workaround: The default password (identical to Oracle default password) is: **change_on_install**

- After switching to a temporary ASM disk group, and trying to use a different ASM disk group, an unmount +delete must occur in order for the operation to succeed. This un-mounts and drops the temporary ASM disk group before you can proceed with switch to the new ASM disk group. [31278]

   Workaround: To perform this unmount +delete, use the CLI command:

```
udstask unmountimage -image <mounted image> -delete
```

- Work-flows with stale images are not cleaned during GC automatically. [30680]

   Workaround: Stale images must be cleaned manually.

- Vault to Azure only: When setting up an Azure instance, a short lived storage drive is available. This device can show up when editing or adding pools. As this drive is only short-lived, it doesn't stay added to the pools across reboots and there might be data corruption when it comes to data in all the zpools like dedup and performance. [29648]

   Workaround: Do not use the default short-lived storage drive.

- After performing a restore operation on MS-SQL Always On Availability Group (AAG) database, the database might be in restoring state on secondary node of the group. [27512]

   Workaround: Manually bring the database in sync state by purging the database on the secondary node and re-initiating the replication.

- Post configuration of a VDP Appliance instance on a Hyper-V server, the Hyper-V server cannot get the IP address of VDP Appliance on Hyper-V manager's Networking tab. [26353]

   Workaround: Open the console for the VM by double clicking the VM name and get the IP address from command line at VDP Appliance.

- Sometimes Oracle child backup may fail due to missing TNS domain name from *tnsnames.ora* file. [26923]

   Workaround: Unmount and Delete the child application created by the workflow and rerun the same.

- Changing the IP address of the primary NIC using the configuration panel does not change the Cluster IP address and the Operative IP address. [24431]

  Workaround: Use the CLI command `udstask chcluster` to modify the cluster and operative IP address.

- Modified ACLs on folders are not copied during incremental CIFS backup on Isilon NAS storage. ACLs of files within the folders are correctly captured and updated. [21097]

- Snapshot and clone jobs fail after changing the VDP Appliance instance IP address. [20759]

  Workaround: Reboot the VDP Appliance instance after changing the IP address.

- The percentage (%) special character is not supported when specified in a datastore name of an ESX Server. [20544]

- The Managed Data License (MDL) is counted twice when an Oracle database and the file system holding the Oracle data reside in the same consistency group. [20051]

- Under certain circumstances, an expiration job may fail with following error message: [20041]
  `Omd: vdisk has dependent flash copies.`

  This happens only when the following criteria are all true:
    - The image being expired is the last snapshot image.
    - Backups have been taken from multiple nodes in the cluster.
    - One or more nodes previously used for backups are offline.

- If an Oracle host is rebooted while database mounts exist, those mounted databases will be offline after the reboot. [19378]

  Workaround: After host reboot, manually mount the needed file systems and start child database instance.

- If VDP Appliances are forcefully unjoined, protected applications configured to replicate between the appliances may not correctly show the selected template and profile. [16995]

  Workaround: Do not un-join appliances forcefully when they are associated with SLAs.

- LiveClone of a DedupAsync image fails with error '*When attaching a live clone, the parent must be a flash copy*', when a Live Clone operation is performed after a failback operation. [16355]

  Workaround: Wait until a successful DedupAsync job completes, and perform a LiveClone operation.

- During out-of-band file system restoration, the backup data replaces the same production data, but new data since the backup is ignored. [10298]

- When performing a Microsoft Exchange database restore, the restore operation is successful, but some log error messages are noticed in the event viewer, these are actually warning messages. You may safely ignore them. [9948]

- Microsoft SQL database has double-byte characters in the name are not supported. [8761]

  Workaround: Rename databases without double-byte characters.

- Due to a known bug in RHEL 5.8 and earlier, and 6.0, out-of-band application backups may result in a kernel panic intermittently. [5253]

  Workaround: No alternative or patch exists. If possible, upgrade RHEL version to 5.9 or 6.1 or higher. Additionally, out-of-band applications should be configured to "Keep staging disks mapped between jobs."

Limitations and Restrictions

The following are the limitations and restrictions in IBM InfoSphere VDP 9.0.2:

- Dynamic disks are not supported for staging disks.
- Backups created on RHEL 7.3 systems cannot be mounted to RHEL 6.8 systems. [47664]
- Job fails with error "terminated with signal 11, segmentation fault" when appliance fails to send configuration files to VDP Connector [60665]
- Hyper-V only: VM runs a full backup instead of a low splash backup when VMs storage is moved from one cloud service vendor to another. [24783]
- ESXi hosts with time that does not match with its VMware jobs fail. This is as designed by VMware. [39241]
- System State Recovery fails if there are any security software in the backup image which can block execution of binaries during System State recovery. Consider exempting the target disk from the interfering software for the duration of the operation. [64152]
- Remote dedup jobs cannot record ingest, post-dedup, and post-compress stats on remote side. [16938]
- Exchange virtual machines only: Snapshots with log truncation enabled occasionally fail with error: `5584: VDP Connector failed to truncate log with unknown error.`

  Workaround: If any databases are in a bad state (such as `Dismounted, Failed and Suspended`) Microsoft Exchange writer returns error `VSS_E_WRITER_RETRYABLE` during log truncation request. If all databases are in good state, then only the log truncation job will succeed. This is as designed.
- StreamSnap job duration grows exponentially when there is a delay between two clusters. [26746]
- On VVOL-based setups, if the appliance determines that LAN- free mode is applicable, VMware backups fail (VVOL-based VMDKs cannot be accessed in SAN mode). [38252]
- Image clones do not provide a GUI option for a mount point or ASM disk group. [31786]
- Database re-provision fails when Oracle database authentication is changed from OS to DB. [27586]

  Workaround: Create a new Application Aware mount database.
- (Linux Generic Applications only) The combined length of Logical Volume Name and Volume Group name hosting that Logical Volume should not exceed 108 characters. [26839]
- Rebooting a Linux host during a backup operation using VDP CBT driver may cause the next backup job to be a full backup rather than an incremental backup. [26880]
- Performing application aware mounts to multiple hosts in a single work-flow is not supported. [27174]
- Oracle 12c with PDB stored in File System format (not ASM) is only supported on Linux. Unix and Windows platforms are unsupported at this time. [23773]
- Reducing the disk group size is not supported due to Oracle ASM limitation. [23925]
- AIX, iSCSI only: Only single node Oracle ASM RAC clusters are supported on AIX using iSCSI. [23401]
- The log backup frequency mentioned in minutes via VDP Desktop SLA Architect is rounded to the nearest multiple of 5 minutes. [22901]
- If a NAS dataset consists of file streams, the backup job ignores these file streams and captures the rest of the data. [19262]
- Square brackets ([ ]) or forward slash (/) in a VMware datastore name are not supported. [8872]
- VDP Connector fails to auto-configure iSCSI ports of the third party iSCSI initiator on Windows. [7784]
- Installtrustedcertificate command works in CLI, but does not work with REST API: [64579]

  Workaround: Log on to CLI, copy the `cert.pem` and `key.pem` to `/home/admin/upload` folders, and execute the following command:

```
udstask installtrustedcertificate -certfile cert.pem -keyfile key.pem
```

Limitation in LDAP usage with VDP 9.0.2:

- Support of referral by default feature is ignored. However, you can optionally turn on this feature by changing the "ldap.referral.support" parameter value to true.

- For Active Directory, the Domain Users group is not supported in this release. It does not appear in the list of mappings.

5 IBM InfoSphere VDP 9.0.1 Release Notes

IBM InfoSphere VDP 9.0.1 includes major new features as well as assorted performance enhancements, security improvements, and bug fixes. To install or upgrade, please schedule a time with IBM InfoSphere Support.

Topics:

- What's New
- Upgrade Paths
- Resolved Issues
- Known Issues
- Limitations and Restrictions

What's New

The following are the new features, enhancements and changes in IBM InfoSphere VDP 9.0.1:

- **CentOS 7.5 and 7.6 Server Support**: VDP Connector is enhanced to support CentOS Server 7.5 and 7.6 releases and includes CBT and System State support.
- **VDP on Alibaba Cloud**: IBM InfoSphere now supports VDP Appliance deployment on Alibaba cloud.
- **Oracle 18c**: IBM InfoSphere VDP 9.0.1 now supports protecting Oracle 18c databases.
- **Oracle Cloud Object Storage**: IBM InfoSphere VDP 9.0.1 now support Oracle Cloud Object Storage using S3 compatibility API.
- Support for VMware vSAN 6.7 and 6.7 U1 releases.
- See the Resolved Issues section for list of issues addressed in this release.

Upgrade Paths

IBM InfoSphere VDP systems running 7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.4 can be upgraded directly to 9.0.1. Older versions (<7.x) should be upgraded first to one of these releases (7.x, 8.0.0 - 8.0.10 or 8.1.0 - 8.1.4).

Resolved Issues

Fixes in this release fall into three distinct categories as follows:

- Functionality and Usability Fixes
- Security and Vulnerability Fixes
- Command Line Interface Fixes

Note: All the issues fixed prior to 8.1.3 release are already part of 9.0.1

Functionality and Usability Fixes

The following table lists issues that have been addressed in IBM InfoSphere VDP 9.0.1:

Functionality and Usability Fixes in IBM InfoSphere VDP 9.0.1

Tracking Number	Description
46220	In rare scenarios, ingesting same VM multiple times results in ingestion failure after few hundred attempts. The same issue is also noticed when few hundred VM images of same sizes are ingested.
60432	Added support for CentOS, RHEL, OEL 6.10 of AWS, GCP, and Azure for both System State and VMBackup.
64291	Unable to create partition on GPT disk in Windows 2003
62078	Snapshot Jobs are failing with an Error "message 868: Failed to create Virtual SCSI Adapter on LPAR host. Failed to map disks"
62381	After adding new staging disks if that backup job fails for some reason then the subsequent backup jobs may fail while creating or extending ASM disk group.
60158	When using actIVGMDBM.pl tool, --wait option is not working properly if newly created jobs are in queued state.
60500	[Oracle only] AppAware mount job fails when pre-flight script tries to run this specific command (echo Y | su - oraerwq -c 'ls >/dev/null 2>&1')
58568	Test fail if Oracle TNS_ADMMIN directory path is different than Oracle grid home and oracle home.
62891	After performing AppAware mount, block change tracking (BCT) is not enabled for file system databases.
62907	Enhancement: Provided additional scripts for refreshing pluggable database (PDB).
62102	[Oracle only] Oracle backups may fail if there are multiple databases on the host with the same prefix and running different versions of Oracle.
27938	Staging disks are not unmapped and are unable to delete the hosts when an application is unprotected. This issue is fixed now by introducing a new parameter "EnableUnprotectCleanup".
62525	When concurrent jobs run on multiple nodes of ASM RAC cluster with the advanced option to map disks to all nodes, deadlock in connector could result in hung jobs.
61759	Oracle log backup relies on log history for calculating staging disk size. If log history is less than log backup retention, log backups fail with no space errors.
63002	Oracle file system databases may not discovered correctly if oratab entry is not present and databases are not registered under Clusterware Control (crsctl).

Tracking Number	Description
63363	VDP Connector now only modifies the asm_diskstring parameter and not the GPnP profile while adding ASM device path to the disk-string.
58866	[Oracle only] Sometimes, ASM does not return disk-group mount status correctly, which leads to VDP Connector leaving the disk-group in mounted state and fails to cleanup the disks.
62453	VDP Connector is failing to fetch the old disk-group details correctly and it is terminating abnormally while performing ASM switch restore if SPFILE parameter is empty.
56344	Backup job fails for VMware VMs with non-volatile memory express (NVME) controllers.
63717	Jobs are failing with error "Host doesn't have any SAN or iSCSI ports defined", as ISCSI port is getting added to the cluster node instead of actual node.
64014	Flash Scan fails on VMs that are using Storage Spaces.
63453	Out of memory issue occurs when platform is checking for large number of unapproved backups.
64287	Enhancement: Need to support private IP provision for Azure.
63748	In 9.0.1, the "bootvolumesnapshot" policy option is deprecated, instead it uses application volumes.
52222	When one of the snapshot pool reaches safe limit, all the snapshot jobs are canceled even though there is enough free space on other pools.
63675	SQL Failover while adding disk to cluster. While mount job is moving the disk from Available Storage group to SQL group, if there is a bus rescan done at the same time, Cluster could not find the volumes on the disk, in a timeout of 30 seconds, the disk resource is marked failed and SQL failover to another node.
64449	CIFS application backups fail if the request to enumerate alternate data streams fails with STATUS_NOT_SUPPORTED. This error no longer cause a backup failure.
59131	Enhancement: Need to provide a queuing option for workflows, added queue option for workflows.
61249	Partial restore of VM enables CBT on all volumes in the VM instead of selected.
63213	Restore of LAN-free VM fails with SAN transport error.
63095	When deleting a VM application, the corresponding VM host is also deleted but iSCSI configuration is not cleaned up.
62697	Remote Appliance status check is fixed to include all known appliances, including non-sharing mode Appliances.

Tracking Number	Description
63144	Fixed a memory leak issue in AIX connector that might lead to the connector crashing after running hundreds of jobs.
62326	AIX file systems that contains large number of files in a single directory may fail due to AIX's default 256MB memory limit for processes.
63044	On AIX, ASM database restore fails even after successfully performing the restore as ASM on mapped disks.
61822	ASM Switch and Re-balance based restore fails on Oracle 18c with no oratab entry. Currently, ASM switch and re-balance scripts are relying on oratab file to get ORACLE HOME details, this issue is fixed now to obtain the ORACLE HOME with out relying on oratab entry.
63910	Improve performance of SQL failover instances containing many files when network connection between cluster hosts is slow.
60146	Unable to run concurrent recovery mount jobs simultaneously for a given target host.
63551	The the archiving process may fail for customers that have large number of operations.
65431	ASM switch and re-balance is leaving some legacy parameters and dependencies that point to source disk groups. VDP Connector now removes all disk group dependencies and legacy parameters after switch mount.
62420	Oracle backup jobs are falling on Solaris 10, this issue is now fixed.
62109	ASM initialization fails on VDP Connector restart due to dependency on oratab file, the issue is fixed now, after host reboot ASM and Databases came online without any issues.
62718	On Windows host, WMI query to gather System and Connector CPU/Memory statistics hangs. This issue is now fixed by setting timeout to WMI queries.
62082	Enhancement: Need to add one more item to the self service networking UI on the "Troubleshooting" tab in the drop-down for the utility, add "Test DNS".
62833	Upgrading InfoSphere VDP Appliance from 8.1.x to 9.0.1 may not upgrade one of the internal module on the appliance.
65416	Oracle restore fails if database is down and connector restarted between backup and restore.
62859	Multiple discoveries found for same application in lower & upper cases during Oracle database application discovery.
62843	AppAware mount fails if parameter file (pfile) contains the "parallel_degree_level" parameter.
62247	Oracle ASM Child restores fails due to diskgroup mount issues.

Tracking Number	Description
64741	Duplicate/Obsolete datafile deletion is not able to find the files correctly making the backup unusable for recovery.
64199	Configuration parameter `remotepsrvrequesttimeout` not honored by scheduler when it is set to a value larger than 30.
62156	Workflow does not run when vRDM option is selected, and if you have standalone SQL instance along with SQL failover cluster instance on VM's and EnableMountToVirtualSqlCluster parameter set to false.
63518	Workflow creation fails with error "value too long" if 1500 databases are selected.
63376	Trying to exclude the databases from incorrect SQL instance during AppAware mount when there are multiple instances on a host with same database name.
61905	Unable to proceed with MDL calculation for the remaining pools if one of the external pool is inaccessible.
63969	Mount/Remount job may fail when disk preference is set as NFS and transport mode between InfoSphere VDP Appliance and host is Fibre Channel.
61799	System State recovery fails if proxy server is configured in backup host.
62102	[Oracle only] Oracle backups may fail if there are multiple databases on the host with the same prefix and running different versions of Oracle.
58749	Mount from Dedup image fails when the dedup image is greater than 17 TB in size.
62136	Unable to download Archive Jobs and Events logs from VDP Desktop.
62420	[Solaris 10 only] Backup jobs and discovery of Oracle applications are failing.
62381	After adding new staging disks if that backup job fails for some reason then the subsequent backup jobs may fail while creating or extending ASM disk group.
61905	Incorrect Managed Data License (MDL) calculation is displayed when there is an issue in connecting external pools.
58896	Oracle only: Database backup taking more than expected time due to nested directory structure.
63089	Unable to discover oracle application when database name and instance name is different.
64863	Mount point information is incorrectly populated if Linux logical volumes are similar.
65079	Backup job fails with 175 error if bus rescan takes long time as the session is getting dropped.
64480	External IP address is removed for System State recovery to GCP.

Tracking Number	Description
61869	In some situations, when dedup or remote dedup policies fall behind, jobs are queued to catch up, and then dequeued one minute later, leading to hundreds of NOT RUN jobs.
58749	Mount from Dedup image fails when the dedup image is greater than 17 TB in size.
62653	Parameters (dirty_ratio and dirty_background_ratio) are now configured with new values.
62285	GCP recovery instance IP changes during conversion.
64487	Inode count in /tmp partition of Appliance is increasing in long run.
63792	Enhancement: Added support for Oracle Cloud in Vault.
62877	Incremental restore from Dedup does not work properly. This issue is now fixed.
64205	Incremental OnVault backups are not working properly.

Security and Vulnerability Fixes

Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.1 includes the common names for vulnerabilities and exposures (CVEs), IBM InfoSphere platform issues, and database liabilities resolved as of this release.

The following table lists Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.1.

Fixed Security and Vulnerabilities in IBM InfoSphere VDP 9.0.1

Tracking Number	Description
57996	CentOS 6: kernel (CESA-2018:2846)
63963	CentOS 6: kernel (CESA-2019:0415)
63415	SSH uses deprecated DSA keys
62643	CentOS 7: bind (CESA-2019:0194)
62645	CentOS 7: kernel (CESA-2019:0163)
62343	CentOS 7: perl (CESA-2019:0109)
58295	CentOS 6: kernel (CESA-2018:2846)
63311	CentOS 7: systemd (CESA-2019:0368)

Command Line Interface Fixes

CLI additions and improvements for IBM InfoSphere VDP 9.0.1 include deprecated commands, new arguments, and recommended usages in the latest version of the CLI, API, and SARG. Refer to the latest version of the following publications for more details:

- *CLI Reference*
- *RESTful API Reference*
- *SARG (Simple Report Generator) User Guide*

The following table lists CLI additions and improvements in IBM InfoSphere VDP 9.0.1.

CLI Changes in IBM InfoSphere VDP 9.0.1

Tracking Number	Description
60361	Added a new CLI command "testdns" to look up name or IP address of a host.

The following table lists SARG additions and improvements in IBM InfoSphere VDP 9.0.1.

SARG Changes in IBM InfoSphere VDP 9.0.1

Tracking Number	Description
61772	The following SARG commands are enhanced in 9.0.1: • **reportrunningjobs**: The reportrunningjobs command is enhanced to list the sub-jobs also. • **reportfailedjobs**: The reportfailedjobs command is enhanced to perform the search with job-class using -j option. • **reportjobs**: Reportjobs lists every jobclass by default. Using -j you can search for specific job classes, • **reportmountedimages**: The reportmountedimages command enhanced to show the consumed size in GB. • **reporthealth**: The reporthealth command now provides SLA Violations check for direct OnVault jobs also.

Known Issues

The following are the known issues in IBM InfoSphere VDP 9.0.1:

- [Windows with Filter Driver only] In very rare cases, upgrading the VDP Connector with a full installation may cause Windows to crash with a BSOD. This was fixed in 9.0.2. [66189]

- Mount job takes more time than expected when VM backup image is mounted back to the same host. [65437]

- VM mount fails on SAS controller with mount mode as vRDM or NFS to hypervisor. [41748]

- System State backup fails on Windows 2012 host when the host has un-initialized disk. [45989]

- Mount job fails when application name discovered in VDP is in different case than the one found in MS SQL. [65073]

- Backup/Mount job could fail on Linux when VDP Connector tries to scan and remove LUNs in parallel. [56767]

- Priority of the job is not reflected correctly on IVGM UI when it is modified using "actIVGMDBM" utility. [60160]

- Free space on /var/log folder may get low when large no of VDisks are used on the appliance. Which may cause loss of logs and other information. [61969]

- Oracle ASM backup and mount fails when "compatible.rdbms" attribute value is set as 12.0.0. [64716]

- Oracle ASM backup runs as full every time due to oracle backup script logic issue. [64428]

- In rare cases, catchup jobs can get into dequeuing and queuing cycle when they do not get job slot. [65088]

  Workaround: Increase the job slots for appropriate job types.

- In rare cases, a job takes more slots than needed thus preventing OnVault jobs to run their sub jobs. [64052]

- In rare cases, Oracle fails to release VDP staging disks on AIX hosts even after dismounting the diskgroup leading to permanent failures. [63150]

- Users are not warned about unsupported configuration when an Oracle application is protected with ESP pool in the profile and Oracle LUNs are presented using pRDM. [60282]

- The "udstask importvaultbackup" command fails with NullPointerException error. [65456]

- AppAware fails if *sqlplus* output contains "\t \n" characters at the end. [61251]

- Rest API 'OPTIONS' method exposes WADL information without requiring authentication. [61210]

- Sometimes InfoSphere VDP Appliance process (udpmqd) hangs and terminates abnormally while closing a client session. [65736]

- Fail to get Oracle user name in case of multiple Oracle users and homes are present in same host. [65821]

- Unable create partition on GPT disk in Windows 2003 R2. [65839]

- Oracle log staging disk may contain files older than retention period. [64500]

- The host deletion confirmation pop-up continue to remain visible even though a host is deleted. Successive click on "Yes" may result in "Application Node Delete Error". This message can be safely ignored by clicking on "No" button. [64805]

- SSD configuration on VDP Appliance deployed on Hyper-V is throwing an error "Fatal error: could not determine WWID for <disk device>". [65922]

- Oracle Restore fails with error "Oracle RMAN job requested by VDP Connector failed" [65702]

  Workaround: Use ASM preferred disk group name to avoid running into this issue.

- Postgres database backup hangs when the database connection configuration is password based. [64370]
- Snapshot of VM using VDPUser results in the following error "Failed to create disk reader for fingerprint calculation" [61634]

  Workaround: Use Administrator user.
- Ignoring failures in removing old staging disks on some RAC nodes after production application is expanded causes all further jobs to fail for ASM backups with error "5180: ASM preferred disk group already exists" [62227]

  Workaround: Manually drop the disk group starting with ACT<PROD> name from all cluster nodes.
- File recovery job fails with an improper error message when target drive letter does not exist. [64993]
- System State recovery fails for VMBackup with Data Disks Migration flag [Linux SLES 11] [64681]
- Unable to list OnVault images when host ID prefixed with alphabets. [61397]
- Creation of Template clone fails due to API call timeout. [65305]
- P2V (Physical to Virtual) job fails with an improper error message if internal IP is already reserved. [65753]
- In MS-SQL Clone window, when the target host is changed after selecting a database, we might see prefix and suffix options for the SQL Server Database Name instead of SQL Server Database Name. [60539]

  Workaround: In regular workflow this is not an issue, it only happens if we change target host after selecting only one database, the workaround is to de-select the database and select again or use IVGM UI.
- [NFS Datastore only] DAR mount job is failing with error "VDP Connector failed to mount the logical volumes present on the LUN mapped from VDP ". [62367]
- Job fails with error "terminated with signal 11, segmentation fault" when InfoSphere VDP Appliance fails to send configuration files to VDP Connector [60665]
- [SQL only] Issue in filtering child applications VDP Desktop, it displays duplicate entries in eligible members. [62013]
- System state conversion on Oracle Enterprise Linux 6.4 is failing with error "Failed to convert volumes to virtual disk". [62192]
- System state conversion on Windows 2003 is failing with error "1106: Failed to get IP address of virtual machine after conversion". [62130]
- [Oracle only] Backups and mount jobs not working properly for ASM RAC on VMs that are in clustered ESX hosts. [26456]
- Application Aware mount fails when there is a space in datafile name. [61768]

  Workaround: Create the datafile names without space.
- Consistency dates for database + log backups are using the start dates instead of the database or log consistency dates. [39020]
- Remote protection check does not alert if there is no response from the remote cluster. [54523]
- Encrypted values should be handled differently when the appliances are in the shared mode as the values from the master appliances are replicated to slaves. [58175]
- Enhancement: On demand snapshot job should trigger downstream jobs like Dedup and OnVault. [55956]
- Hyper-V only: VDP Appliance install may fail due to duplicate by-path identities of volumes. [39703]

  Workaround: Create dummy disk in SCSI controller as LUN0, and all other disks are attached to one SCSI controller using other LUN numbers.
- Mount job may fail for SQL database while mounting the database back to the original server, using the original name. [42654]
- Remote protection check does not alert when there is no response from the remote cluster. [54523]

- Consistency dates for database + log backups are using the start dates instead of the database or log consistency dates. [39020]
- Mount jobs to an OpenVMS host does not contain the UDID disks already mapped. [34795]
- In certain environments, Oracle backups fail if the instance have a different own for its process and its `ORACLE_HOME` location.

  Workaround: Discover the instance while using an Oracle OS user instead of a SAP user
- Hyper-V VMs only: Some disks go offline for mounted and cloned VMs. Mounts fail with following error: `Error Message: 5024: VDP Connector: Failed to create VSS snapshot for backup. The writer experienced a non-transient error. If the backup process is retried, the error is likely to reoccur.` [50142]

  Workaround: Find if there are offline disks and volumes on the VM, and bring those disks/volumes online.
- VMs with Japanese names do not permit incremental backups. [49599]
- In certain environments, VDP Appliance continuously reboots due to a VMXNET3 driver.

  Workaround: Update to ESXi 6.5 U1 or later.
- CLI only: Command `udstask runworkflow` does not return on workflows that have an "On Demand" schedule type.

  Workaround: Make a clone of the workflow, then run the cloned workflow. It is auto deleted after it is run.

  a. Clone the workflow you want to run:

     `udstask cloneworkflow <workflow ID>`
  b. To specify the source image to use when running this workflow, run:

     `udstask addflowproperty -name image -value <image name> <clone workflow ID>`
  c. To run the cloned workflow and auto-delete it upon completion:

     `udstask runworkflow <clone work flow ID>`
- RHEL 7.2 only: In Red Hat Enterprise Linux 7.2, a bug exists in the caching daemon that causes LVM commands to hang. [29461]

  Workaround: Update to RHEL 7.3 or later.
- SQL Server database names do not provide a suffix field in application-aware mounts work-flow windows.
- Solid state drives cannot be changed or re-assigned from ZFS Index Log (ZIL) to Dedup index functions in the VDP Desktop. [25073]

  Workaround: The ZIL SSD will have status "`act_ded_pool000`". You can perform this in the CLI using these commands:

  o `udsinfo lsssd`

  o `udstask rmssd -diskpool <id><wwid>`

  o `udstask addssd -diskpool <id><wwid>`

  For details on these commands, refer to the ***CLI Reference***.
- If system user is not used as a backup user, then application-aware mount sets a default password for the system user. [31734]

  Workaround: The default password (identical to Oracle default password) is: **change_on_install**
- After switching to a temporary ASM disk group, and trying to use a different ASM disk group, an unmount +delete must occur in order for the operation to succeed. This un-mounts and drops the temporary ASM disk group before you can proceed with switch to the new ASM disk group. [31278]

  Workaround: To perform this unmount +delete, use the CLI command:

  `udstask unmountimage -image <mounted image> -delete`

- Workflows with stale images are not cleaned during GC automatically. [30680]

  Workaround: Stale images must be cleaned manually.

- Vault to Azure only: When setting up an Azure instance, a short lived storage drive is available. This device can show up when editing or adding pools. As this drive is only short-lived, it doesn't stay added to the pools across reboots and there might be data corruption when it comes to data in all the zpools like dedup and performance. [29648]

  Workaround: Do not use the default short-lived storage drive.

- After performing a restore operation on MS-SQL AlwaysOn Availability Group (AAG) database, the database might be in restoring state on secondary node of the group. [27512]

  Workaround: Manually bring the database in sync state by purging the database on the secondary node and re-initiating the replication.

- Post configuration of a VDP Appliance instance on a Hyper-V server, the Hyper-V server cannot get the IP address of VDP Appliance on Hyper-V manager's Networking tab. [26353]

  Workaround: Open the console for the VM by double clicking the VM name and get the IP address from command line at VDP Appliance.

- Sometimes Oracle child backup may fail due to missing TNS domain name from *tnsnames.ora* file. [26923]

  Workaround: Unmount and Delete the child application created by the workflow and rerun the same.

- Changing the IP address of the primary NIC using the configuration panel on VDP Appliance does not change the Cluster IP address and the Operative IP address. [24431]

  Workaround: Use the CLI command `udstask chcluster` to modify the cluster and operative IP address.

- Modified ACLs on folders are not copied during incremental CIFS backup on Isilon NAS storage. ACLs of files within the folders are correctly captured and updated. [21097]

- Snapshot and clone jobs fail after changing the VDP Appliance IP address. [20759]

  Workaround: Reboot the VDP Appliance instance after changing the IP address.

- The percentage (%) special character is not supported when specified in a datastore name of an ESX Server. [20544]

- The Managed Data License (MDL) is counted twice when an Oracle database and the file system holding the Oracle data reside in the same consistency group. [20051]

- Under certain circumstances, an expiration job may fail with following error message: [20041]
  `Omd: vdisk has dependent flash copies.`

  This happens only when the following criteria are all true:
  - The image being expired is the last snapshot image.
  - Backups have been taken from multiple nodes in the cluster.
  - One or more nodes previously used for backups are offline.

- If an Oracle host is rebooted while database mounts exist, those mounted databases will be offline after the reboot. [19378]

  Workaround: After host reboot, manually mount the needed file systems and start child database instance.

- If InfoSphere VDP Appliances are forcibly unjoined, protected applications configured to replicate between the appliances may not correctly show the selected template and profile. [16995]

  Workaround: Do not un-join appliances forcibly when they are associated with SLAs.

- Specifying mount point is not currently supported for in-band Oracle ASM databases. [16534]

  Workaround: When performing a mount operation on an in-band Oracle ASM database, leave the Mount Point field empty and proceed with the mount operation.

- LiveClone of a DedupAsync image fails with error '*When attaching a live clone, the parent must be a flashcopy*', when a LiveClone operation is performed after a failback operation. [16355]

  Workaround: Wait until a successful DedupAsync job completes, and perform a LiveClone operation.

- During out-of-band file system restoration, the backup data replaces the same production data, but new data since the backup is ignored. [10298]

- When performing a Microsoft Exchange database restore, the restore operation is successful, but some log error messages are noticed in the event viewer, these are actually warning messages. [9948]

  Workaround: You may safely ignore these messages.

- Microsoft SQL database has double-byte characters in the name are not supported. [8761]

  Workaround: Rename databases without double-byte characters.

- Due to a known bug in RHEL 5.8 and earlier, and 6.0, out-of-band application backups may result in a kernel panic intermittently. [5253]

  Workaround: No alternative or patch exists. If possible, upgrade RHEL version to 5.9 or 6.1 or higher. Additionally, out-of-band applications should be configured to "Keep staging disks mapped between jobs."

Limitations and Restrictions

The following are the limitations and restrictions in IBM InfoSphere VDP 9.0.1:

- Dynamic disks are not supported for staging disks.

- Backups created on RHEL 7.3 systems cannot be mounted to RHEL 6.8 systems. [47664]

- Hyper-V only: VM runs a full backup instead of a low splash backup when VMs storage is moved from one cloud service vendor to another. [24783]

- ESXi hosts with time that does not match with its VMware jobs fail. This is as designed by VMware. [39241]

- System State Recovery fails if there are any security software in the backup image which can block execution of binaries during System State recovery. Consider exempting the target disk from the interfering software for the duration of the operation. [64152]

- Remote dedup jobs cannot record ingest, post-dedup, and post-compress stats on remote side. [16938]

- Exchange virtual machines only: Snapshots with log truncation enabled occasionally fail with error: `5584: VDP Connector failed to truncate log with unknown error.`

  Workaround: If any databases are in a bad state (such as `Dismounted, Failed and Suspended`) Microsoft Exchange writer returns error `VSS_E_WRITER_RETRYABLE` during log truncation request. If all databases are in good state, then only the log truncation job will succeed. This is as designed.

- StreamSnap job duration grows exponentially when there is a delay between two clusters. [26746]

- On VVOL-based setups, if the appliance determines that LAN- free mode is applicable, VMware backups fail (VVOL-based VMDKs cannot be accessed in SAN mode). [38252]

- Image clones do not provide a GUI option for a mount point or ASM disk group. [31786]

- Database re-provision fails when Oracle database authentication is changed from OS to DB. [27586]

  Workaround: Create a new Application Aware mount database.

- (Linux Generic Applications only) The combined length of Logical Volume Name and Volume Group name hosting that Logical Volume should not exceed 108 characters. [26839]

- Rebooting a Linux host during a backup operation using IBM InfoSphere CBT driver may cause the next backup job to be a full backup rather than an incremental backup. [26880]

- Performing application aware mounts to multiple hosts in a single work-flow is not supported. [27174]

- Oracle 12c with PDB stored in File System format (not ASM) is only supported on Linux. Unix and Windows platforms are unsupported at this time. [23773]

- Reducing the disk group size is not supported due to Oracle ASM limitation. [23925]

- AIX, iSCSI only: Only single node Oracle ASM RAC clusters are supported on AIX using iSCSI. [23401]

- If a NAS dataset consists of file streams, the backup job ignores these file streams and captures the rest of the data. [19262]

- Square brackets ([ ]) or forward slash (/) in a VMware datastore name are not supported. [8872]

- VDP Connector fails to auto-configure iSCSI ports of the third party iSCSI initiator on Windows. [7784]

- Installtrustedcertificate command works in CLI, but does not work with REST API: [64579]

  Workaround: Log on to CLI, copy the `cert.pem` and `key.pem` to `/home/admin/upload` folders, and execute the following command:

  `udstask installtrustedcertificate -certfile cert.pem -keyfile key.pem`

Limitation in LDAP usage with VDP 9.0.1:

- Support of referral by default feature is ignored. However, you can optionally turn on this feature by changing the "ldap.referral.support" parameter value to true.

- For Active Directory, the Domain Users group is not supported in this release. It does not appear in the list of mappings.

6 IBM InfoSphere VDP 9.0 Release Notes

IBM InfoSphere VDP release 9.0 includes major new features as well as assorted performance enhancements, security improvements, and bug fixes. To install or upgrade, please schedule a time with IBM InfoSphere Support.

Topics:

- What's New
- Resolved Issues
- Known Issues
- Limitations and Restrictions

What's New

This section introduces the new features in IBM InfoSphere VDP release 9.0. Upgrading to the latest software version is strongly recommended to benefit from the new features, enhancements and fixes. Contact your IBM InfoSphere Support representative for assistance in upgrading the software on your InfoSphere VDP Appliances.

The following are the new features, enhancements and changes in IBM InfoSphere VDP release 9.0:

Expanded Cloud Mobility for Migration and DR

Highlights

- When using cloud mobility to recover physical and virtual systems into a cloud environment (AWS, Google Cloud Platform, Microsoft Azure), users can request to copy the volume data into native cloud block storage (SSD or magnetic tiers). The result will be a new independent VM that does not rely on any volumes presented from an InfoSphere VDP Appliance.

Benefits

- Easily migrate VMs and physical servers from on-prem to cloud environment, or between cloud platforms.
- When using cloud as a DR environment, customers can decide at time of DR failover whether to run VMs from an VDP Appliance using instant-mount or copy the data to cloud native storage and run directly from that.

External Snapshot Pools with IBM Storwize/SVC and Pure FlashStorage

Highlights

- IBM InfoSphere has extended its Virtual Data Pipeline to use and manage external snapshot pools with VDP Appliances. Customers can leverage their storage arrays' performance, connectivity, and availability by using the array native snapshots for VDP's snapshot pool.
- Applications data can be captured in an incremental-only fashion by snapping the production LUNs in-place (using them as the base), or they can capture data in a full+ incremental fashion (aka out-of-band) into an external snapshot pool in a different array, to create a full copy of the data set first and then copy incremental changes.

- While capture methods differ, array snapshots are leveraged in both cases and can be mounted directly to hosts, thereby leveraging the arrays' connectivity (FC or iSCSI), high-availability, and performance.
- Once data is captured into the external snapshot pool, it can still flow into the Virtual Data Pipeline in an incremental-forever manner to leverage VDP capabilities, including OnVault, dedup, remote dedup, StreamSnap, and Dedup-Async replication.

Benefits

- Better performance on mounted images. Activity on virtual clones does not go through the InfoSphere VDP Appliance but rather directly between the host and storage array. This is especially important in testing and development environments.
- Better performance and RTO for DR, when using external snapshot pools on the DR side. Data is updated and available in its intended target storage so there is no need to copy it elsewhere.
- Better performance on SmartCopy backups (data moves directly from array to array, without going through an InfoSphere VDP Appliance).
- Incremental-Only capture for applications that already reside on the array, resulting in faster capture (near-instant) and less storage (no need for a first full copy).
- Highly available mounts from the storage array, coordinated by VDP.
- Fibre Channel (FC) host connectivity with IBM InfoSphere VDP Appliance [VDP Appliance to array connection is iSCSI].
- Better scalability of VDP infrastructure - fewer appliances will be needed, typically.
- Wider support matrix - interop according to the array's connectivity.

NFS Datastore Support with VMware (alternative to iSCSI)

Highlights

- Users of IBM InfoSphere VDP Appliance can leverage NFS protocol, in addition to iSCSI or as an alternative, when recovering VMs and applications in a VMware environment.
- VMs are captured over the network using VMware VADP and can now be mounted back to an ESX host using NFS protocol.
- In addition, staging disks and recovered applications mounted into a VM (using a connector) can also be mounted to the ESX host over NFS and then presented as block devices (VMDK) to the VM. This applies to Windows and Linux and all supported applications, including SQL Server, Oracle, Linux-based databases captured with the CBT driver, and file systems.

Benefits

- More flexibility to capture and access data over NFS protocol.
- NFS can be easier to configure than block protocols in some environments.

Expanded Support Matrix

Highlights

- Added support for Oracle 18c.
- Added support for Oracle and file system capture on Ubuntu systems. This does not include support for other applications using the change-block tracking driver.

NFS Mount to RAC

Highlights

- Oracle ASM databases captured into a file system staging disk over NFS can now be mounted into a RAC environment. This allows the creation of virtual clones in a testing and development environment with RAC, without having to restore the data back into an ASM database.

Benefits

- More flexibility to capture and access data over NFS protocol.
- Short RTO when accessing virtual clones (mounts) since data does not need to be restored from a file system image into an ASM format.

MDL Calculation for VSAN

Highlights

- The calculation of Managed Data License has been enhanced to accurately reflect usage in a VMware VSAN environment.

Enhanced IBM InfoSphere VDP - Global Manager Functionality and Usability

Highlights

This version adds the following functionality and usability enhancements to IVGM:

- Support for databases and other generic applications on Linux using the change-block tracking driver.
- Ability to export the content displayed in various grids (application list, host list, etc.) to CSV or PDF files.
- Streamlined display and management of application details & settings, including showing defaults and easily restoring defaults.
- All table displays use a consistent grid component with standard, rich functionality.
- Easy "short-cut" application list to move between applications when looking at an application page (e.g. Manage SLA, Access).

Benefits

- IVGM provides a single interface to manage the entire IBM InfoSphere environment.

Clone SQL Server to Another Server

Highlights

- Allow user to recover SQL Server databases by copying the data to another server. The original database configuration is maintained. This is different from a mount: the data is copied to another storage rather than being presented from an InfoSphere VDP Appliance. Full support from IVGM.

Benefits

- Recover SQL Server databases back to a point in time, copying data into production storage using original database configuration.

Enhanced Cyber-Resiliency Leveraging IBM COS Retention Capabilities

Highlights

- Users can designate backups as immutable by setting an option in a template policy. When this is set, no VDP user can expire an image before its policy-driven expiration date, not even an administrator (this was available in 8.1).

- Customers who use IBM InfoSphere with IBM Cloud Object Storage can now leverage its retention capabilities to add another layer of protection at the storage level in addition to the IBM InfoSphere level.

Benefits

- Increase resiliency of data by protecting it from rogue users or malware/ransomware.

Enhanced Call-Home Functionality

Highlights

- Appliance call-home can now leverage HTTPS protocol in addition to email.

Benefits

- Simpler setup and enhanced security.

Upgrade Paths

IBM InfoSphere VDP systems running 7.x or 8.0.x can be upgraded directly to 9.0.0. Older versions (<7.x) should be upgraded first to one of these releases (7.x or 8.0.x).

Resolved Issues

Fixes in this release fall into three distinct categories as follows:

- Functionality and Usability Fixes
- Security and Vulnerability Fixes
- Command Line Interface Fixes

Note: All the issues fixed prior to 8.1.3 release are already part of 9.0.

Functionality and Usability Fixes

The following table lists issues that have been addressed in IBM InfoSphere VDP 9.0:

Functionality and Usability Fixes in IBM InfoSphere VDP 9.0

Tracking Number	Description
62258	Fixed a minor memory leak in StreamSnap where the target process could grow by 1GB after running one million jobs.
61958	Oracle restore fails to open database correctly in cases where dependencies have additional spaces. This issue is now fixed.
61705	A scheduled storage check on VDP Appliance may affect the system performance when the pool size is large or shared among multiple VDP Appliance. This issue is now fixed.
61647	Backup of Solaris file system applications using NFS staging disks might fail with an error about reading files. This has been corrected; NFS staging disks on Solaris will no longer cause this issue.
61537 57180	Enhancement: Keep statistics to report on space consumption within OnVault pools per pool and per application.
61465	When a single Oracle database is selected out of a consistency group for Application Aware mount, the app-class of the child Oracle database is set incorrectly. This is now fixed.
61420	Application Aware mount fails with children in a consistency group with Error Message: Failed to mount ASM disk group.
61273	During discovery, cluster and nodes information are discovered. In some cases, the node IP discovered is incorrect, resulting in bad cluster configuration. This is now fixed.
61257	Oracle ASM child mount fails and partially renames the child disk group when there are multiple disks in the disk group. This issue is now fixed.
61197	VM backup image expiration incorrectly connects to the VM and runs the discovery. This issue is now fixed by skipping the discovery process during VM image expiration.
60951	Enhancement: Call-home test connection dialog now indicates that the email address is optional.
60841	A job can hang in SmartCopy when using the thread pool copy-blocks. This issue is now fixed.
60708	The filter driver now handles FSCTL_DUPLICATE_EXTENTS_TO_FILE and FSCTL_DUPLICATE_EXTENTS_TO_FILE_EX IOCTLs for incremental backups.
60591	Nightly MDL calculation can be interrupted if there is bad application data. This issue is now fixed.
60562	NFS jobs fall with error "Failed to mount NFS datastore on ESX" after update. This issue is now fixed.

Tracking Number	Description
60504	If a shadow VM is used for ReadyVM replication, which has consolidation pending, the replication job tries to consolidate disks. If consolidate operation fails, job may fail until user manually fixes the underlying condition and consolidation is successful. This issue is now fixed.
60469	Need heartbeat service while backup operation is finished. This issues is now fixed.
60456	Backup job fails with an error 'VDP Connector failed to format the backup staging LUN'. This issue is now fixed.
60445	Job cancellation could leave stale devices on Linux VMware hosts due to timeout issue. This issue is now fixed, connector ensures devices are cleaned up correctly on the host even if cleanup session is aborted abruptly.
60425	SmartCopy based jobs (File System and NFS applications) on Solaris 10 may hang indefinitely. This issue is now fixed.
60409	In extremely rare cases, failure in scanning LUNs at the time of backup ends up corrupting the LVM volume group. This issue is now fixed.
60352	Oracle backup job cancellation may leave behind stale devices on the host impacting all future jobs. This issue is now fixed by terminating the RMAN jobs before sending the job cancellation as successful.
60323	When restoring a file system on Linux, if an NFS mount point exists in the directory structure being restored the restore operation may fail. This issue is now fixed, the restore will now properly skip the NFS mount point.
60269	Workflow pre/post script timeout value is also populated in pre/post script name field instead of timeout field. This issue is now fixed.
60245	Restores of live File Systems, such as C:, may fail because files cannot be overwritten because they are in use. This has been corrected and now these failures are ignored so the restore can complete and the in-use files are not replaced.
60205	Enhancement: Add resource tags for AWS VM.
60182	In rare cases, Linux Connector fails to find LUNs presented on slot 0 that can result in failure to capture log backups. This issue is now fixed.
60150	If a backup image has a lot of meta-data (for example, a very large consistency group), then GC can fail. This issue is now fixed.
60033	Enhancement: Schedule storage check schedule can now be changed, with name storage-check, and can also be disabled with "-disable true".
59982	Node failover is observed in InfoSphere VDP Appliance on regular intervals. This issue is now fixed.
59557	Enhancement: The actdbm utility now supports pRDM option when mounting an image to a VM.

Tracking Number	Description
59316	Enhancement: Enhanced existing scripts to support PostgreSQL version 10.
59099	Timeout issue for IBM 2145 devices has been resolved now. SCSI command timeouts for IBM 2145 based VDP targets increased to 120 seconds.
59015	Oracle RMAN restore fails when database uses use_large_pages parameter. This issue is now fixed.
58935	Duplicate VMware VMDKs are displayed when user clicks multiple times on "Managed volumes" options in Application Manager. This issue is now fixed.
58910	CLI user can run a workflow on applications outside of the org. This issue now fixed by modifying the workflow CLI commands to support application level permission during execution with CLI.
58900	Backup job may fail on Linux when meta-data is corrupted on VDP staging disk file system. This issue is now fixed by checking and repairing the file system consistency.
58778	Listing hosts is taking more time due to issue with internal logic. This issue is now fixed by modifying the logic to find the host names.
58735	Enhancement: Database log backup now has advanced setting to specify number of channels.
58723	Under some circumstances volumes which have been formatted with the /L option (Large File Record Size) will fail backup with a disk full error. This specific instance of disk full has been fixed and backups will properly use the same Large File Record Size on the staging disk.
58091	In some situations, when the application was behind for dedup or OnVault processing, even policies that did not apply on that date were considered and a job would be run with a policy that was not supposed to be run on that day. This issue is now fixed.
57914	Updating ESX host with hundreds of alternate IP can fail. This issue is now fixed.
57677	Log backup jobs are failing on PostgreSQL database slave node. This issue is now fixed.
57580	Duplicate cluster IDs may get generated for VDP Appliances. This is now fixed.
57567	Enhancement: Simplified the Oracle application discovery process to speed up the discovery time for hosts having multiple Oracle databases.
55233	All ESX hosts for a vCenter are deleted when a vCenter is deleted, user no longer needs to explicitly delete the ESX hosts before vCenter can be deleted.
55026	Enhancement: When a non-admin user without administrator rights tries to access SARG Reports, a new error message explains: `Only a user in the Administrator role can run this report command.`
54764	The scan job does not run and fails when system reaches the scan limit. This issue is now fixed.
54352	Enhancement: When a call to start index scan returns a failure, the job now shows an error message.

Tracking Number	Description
52182	VDP Appliance configuration fails on Microsoft Azure Cloud. This issue is now fixed.
49957	ReadyVM replication jobs are always picking datastores in round robin order thus failing to make use of free space in all datastores efficiently. This issue is now fixed.
48894	Under some circumstances, MS-SQL, Exchange, or Hyper-V applications may continue to use an old bitmap, resulting in incremental backups that are larger each day. This issue has been corrected and bitmaps will be properly aged out.
48225	Datastore space usage check should be limited to affected datastores. While performing a VMware snapshot, datastore space is checked at the beginning of the job and also while the job is in progress. If it ever reaches critical threshold, job is aborted to avoid running out of datastore space. For selective backups where some volumes are discarded, these checks are not performed on datastores of all volumes. As VMware snapshot includes all dependent volumes, any of them could be impacted with space issues while the snapshot exists. Now VDP checks datastore space usage on all affected datastores.
46129	In some rare occasion, creation of shadow application may fail when previously created remote shadow application is not cleaned up properly. This is now fixed.
45799	VDP Appliance installation fails when the hard disk encryption pass phrase contains more than 150 characters, this issue is now fixed.
43310	Race condition between data copy and expiration of underlying disks not handled correctly and it could result in target copy disks while copy is in progress causing backup and replication job failures. This issue is now fixed by locking the target copy disks while the data movement job is in progress.
37446	Timezone is not displayed for all stattime columns in InfoSphere VDP Appliance. This issue is now fixed.
30250	Mount job fails when all SCSI controllers other than SCSI0 have no more free slots to attach a new disk. This issue is now fixed.
29834	Enhancement: When vCenter permissions are not assigned at the root level, VMware permissions test reports with a warning message.
27938	Staging disks are not unmapped and unable to delete the hosts when an application is unprotected. This issue is fixed now by introducing a new parameter "EnableUnprotectCleanup".

Security and Vulnerability Fixes

Security and Vulnerability Fixes in IBM InfoSphere VDP 9.0 includes the common names for vulnerabilities and exposures (CVEs), IBM InfoSphere platform issues, and database liabilities resolved as of this release.

The following table lists Security and Vulnerability fixes in IBM InfoSphere VDP 9.0.

Fixed Security and Vulnerabilities in IBM InfoSphere VDP 9.0

Tracking Number	Description
60833	CentOS 7: (CESA-2018:3651)
59637	CentOS 7: (CESA-2018:3249)
59633	CentOS 7: (CESA-2018:3041)
59631	CentOS 7: (CESA-2018:3221)
59629	CentOS 7: (CESA-2018:3071)
59627	CentOS 7: (CESA-2018:3324)
59625	CentOS 7: (CESA-2018:3032)
59623	CentOS 7: (CESA-2018:3140)
59619	CentOS 7: (CESA-2018:3092)
55988	CentOS 7: (CESA-2018:2570)
60463	CentOS 7: (CESA-2018:3140)
60465	CentOS 7: (CESA-2018:3083)

Command Line Interface Fixes

CLI additions and improvements for IBM InfoSphere VDP 9.0 includes deprecated commands, new arguments, and recommended usages in the latest version of the CLI, API, and SARG. Refer to the following publications for more details:

- *CLI Reference*
- *RESTful API Reference*
- *SARG (Simple Report Generator) User Guide*

The following table lists CLI additions and improvements in IBM InfoSphere VDP 9.0.

CLI Changes in IBM InfoSphere VDP 9.0

Tracking Number	Description
56624	The `backup` command is enhanced by adding additional information about source image.
61259	The help information is added for `rmfailovertest` command.
54662	The help information is updated for `udstask chhost` command.

The following table lists SARG additions and improvements in IBM InfoSphere VDP 9.0.

SARG Changes in IBM InfoSphere VDP 9.0

Tracking Number	Description
61772	The following SARG commands are enhanced in 9.0: • The `reportrunningjobs` command is enhanced to list the sub-jobs. • The `reportfailedjobs` command is enhanced with search option (-j option) to perform job-class search. • The `reportjobs` command is enhanced with search option (-j option) for specific job search classes. • The `reportmountedimages` command is enhanced to show the consumed size in GB. • The `reporthealth` command now provides SLA Violations check for DirectOnVault jobs also. • The `reportorgusage` command is enhanced, OnVault pool consumption for each org is now shown as a new column.

Known Issues

The following are the known issues in IBM InfoSphere release 9.0:

- [Windows with Filter Driver only] In very rare cases, upgrading the VDP Connector with a full installation may cause Windows to crash with a BSOD. This was fixed in 9.0.2. [66189]

- System State recovery fails if proxy server is configured in backup host. [61799]

  Workaround: Make sure there is no proxy server(s) configured in backup host, so that newly recovering VM can communicate to Appliance for Installing the required softwares.

- [Oracle only] Oracle backups may fail if there are multiple databases on the host with the same prefix and running different versions of Oracle. [62102]

- Mount from Dedup image fails when the dedup image is greater than 17 TB in size. [58749]

  This will be fixed in an upcoming service pack.

- Unable to download Archive Jobs and Events logs from VDP Desktop. [62136]

- In MS-SQL Clone window, when the target host is changed after selecting a database, we might see prefix and suffix options for the SQL Server Database Name instead of SQL Server Database Name. [60539]

- [NFS Datastore only] DAR mount job is failing with error "VDP Connector failed to mount the logical volumes present on the LUN mapped from VDP ". [62367]

- Job fails with error "terminated with signal 11, segmentation fault" when appliance fails to send configuration files to VDP Connector [60665]

- [SQL only] Issue in filtering child applications VDP Desktop, it displays duplicate entries in eligible members. [62013]

- [Solaris 10 only] Backup jobs and discovery of Oracle applications are failing. [62420]

- System State conversion on Oracle Enterprise Linux 6.4 is failing with error "Failed to convert volumes to virtual disk". [62192]

- System State conversion on Windows 2003 is failing with error "1106: Failed to get IP address of virtual machine after conversion". [62130]

- [Oracle only] Backups and mount jobs not working properly for ASM RAC on VMs that are in clustered ESX hosts. [26456]

- After adding new staging disks if that backup job fails for some reason then the subsequent backup jobs may fail while creating or extending ASM disk group. [62381]

- Application Aware mount fails when there is a space in datafile name. [61768]

- Incorrect Managed Data License (MDL) calculation is displayed when there is an issue in connecting external pools. [61905]

- Enhancement: The 'actdbm' utility fails to determine the difference between a physical host and a virtual host. [59559]

- Consistency dates for database + log backups are using the start dates instead of the database or log consistency dates. [39020]

- Oracle only: Database backup taking more than expected time due to nested directory structure. [58896]

  Workaround: Contact IBM InfoSphere support.

- Remote protection check does not alert if there is no response from the remote cluster. [54523]

- Backup job fails for VMware VMs with non-volatile memory express (NVME) controllers. [56344]

- Encrypted values should be handled differently when the appliances are in the shared mode as the values from the master appliances are replicated to slaves. [58175]

- Enhancement: On demand snapshot job should trigger downstream jobs like Dedup and OnVault. [55956]

- Recovery fails for Windows 2008 System-state backup on Microsoft Azure. [59659]
- When a snapshot pool reaches the safe limit, all the snapshot jobs are canceled even though there is enough free space on other pools. [52222]
- Hyper-V only: VDP Appliance install may fail due to duplicate by-path identities of volumes. [39703]

  Workaround: Create dummy disk in SCSI controller as LUN0, and all other disks are attached to one SCSI controller using other LUN numbers.
- Windows only: Application Aware mount job fails with error: ORA-01244: unnamed datafile (s) added to control file by media recovery. [49942]
- Mount job may fail for SQL database while mounting the database back to the original server, using the original name. [42654]
- Remote protection check does not alert when there is no response from the remote cluster. [54523]
- Consistency dates for database + log backups are using the start dates instead of the database or log consistency dates. [39020]
- Mount jobs to an OpenVMS host does not contain the UDID disks already mapped. [34795]
- On a dedup job retry from the remote side, if a checkpoint is rejected from the host-side, then the host retries. [52210]
- In certain environments, Oracle backups fail if the instance have a different own for its process and its `ORACLE_HOME` location.

  Workaround: Discover the instance while using an Oracle OS user instead of a SAP user
- Hyper-V VMs only: Some disks go offline for mounted and cloned VMs. Mounts fail with following error: `Error Message: 5024: VDP Connector: Failed to create VSS snapshot for backup. The writer experienced a non-transient error. If the backup process is retried, the error is likely to reoccur.` [50142]

  Workaround: Find if there are offline disks and volumes on the VM, and bring those disks/volumes online.
- On AIX, there is no mechanism to find stale LUNs if you do not know the exact LUN's vuid, [45454]

  Workaround: Manually detect and clear the LUNs.
- CLI only: Command `udstask runworkflow` does not return on workflows that have an "On Demand" schedule type.

  Workaround: Make a clone of the workflow, then run the cloned workflow. It is auto deleted after it is run.
    a. Clone the workflow you want to run:

       `udstask cloneworkflow <workflow ID>`
    b. To specify the source image to use when running this workflow, run:

       `udstask addflowproperty -name image -value <image name> <clone workflow ID>`
    c. To run the cloned workflow and auto-delete it upon completion:

       `udstask runworkflow <clone work flow ID>`
- System State job does not honor policy option `stagingdiskoverheadallocationpercentage` [43293]
- Backups of AAG databases with a group listener fail with error, "Application discovery failed." [42044]

  Workaround: Perform an application discovery from individual cluster nodes.
- RHEL 7.2 only: In Red Hat Enterprise Linux 7.2, a bug exists in the caching daemon that causes LVM commands to hang. [29461]

  Workaround: Update to RHEL 7.3 or later.
- Microsoft Exchange only: VM backup with log truncation fails if any databases are in a failed or unmounted state. This is only for Exchange Server 2013 and above. [31955, 32330]

- SQL Server database names do not provide a suffix field in application-aware mounts work-flow windows.
- If system user is not used as a backup user, then application-aware mount sets a default password for the system user. [31734]

  Workaround: The default password (identical to Oracle default password) is: `change_on_install`
- After switching to a temporary ASM disk group, and trying to use a different ASM disk group, an unmount +delete must occur in order for the operation to succeed. This un-mounts and drops the temporary ASM disk group before you can proceed with switch to the new ASM disk group. [31278]

  Workaround: To perform this unmount +delete, use the CLI command:

  `udstask unmountimage -image <mounted image> -delete`
- Workflows with stale images are not cleaned during GC automatically. [30680]

  Workaround: Stale images must be cleaned manually.
- Vault to Azure only: When setting up an Azure instance, a short lived storage drive is available. This device can show up when editing or adding pools. As this drive is only short-lived, it doesn't stay added to the pools across reboots and there might be data corruption when it comes to data in all the zpools like dedup and performance. [29648]

  Workaround: Do not use the default short-lived storage drive.
- After performing a restore operation on MS-SQL AlwaysOn Availability Group (AAG) database, the database might be in restoring state on secondary node of the group. [27512]

  Workaround: Manually bring the database in sync state by purging the database on the secondary node and re-initiating the replication.
- Post configuration of a VDP Appliance on a Hyper-V server, the Hyper-V server cannot get the IP address of VDP Appliance on Hyper-V manager's Networking tab. [26353]

  Workaround: Open the console for the VM by double clicking the VM name and get the IP address from command line at VDP Appliance.
- Sometimes Oracle child backup may fail due to missing TNS domain name from *tnsnames.ora* file. [26923]

  Workaround: Unmount and Delete the child application created by the workflow and rerun the same.
- Modified ACLs on folders are not copied during incremental CIFS backup on Isilon NAS storage. ACLs of files within the folders are correctly captured and updated. [21097]

  Workaround: None
- Snapshot and clone jobs fail after changing the VDP Appliance IP address. [20759]

  Workaround: Reboot the VDP Appliance instance after changing the IP address.
- The percentage (%) special character is not supported when specified in a datastore name of an ESX Server. [20544]
- The Managed Data License (MDL) is counted twice when an Oracle database and the file system holding the Oracle data reside in the same consistency group. [20051]
- Under certain circumstances, an expiration job may fail with following error message: [20041]
  `Omd: vdisk has dependent flash copies.`

  This happens only when the following criteria are all true:
    o   The image being expired is the last snapshot image.
    o   Backups have been taken from multiple nodes in the cluster.
    o   One or more nodes previously used for backups are offline.
- If an Oracle host is rebooted while database mounts exist, those mounted databases will be offline after the reboot. [19378]

Workaround: After host reboot, manually mount the needed file systems and start child database instance.

- If VDP Appliances are forcefully unjoined, protected applications configured to replicate between the appliances may not correctly show the selected template and profile. [16995]

  Workaround: Do not un-join appliances forcefully when they are associated with SLAs.

- Specifying mount point is not currently supported for in-band Oracle ASM databases. [16534]

  Workaround: When performing a mount operation on an in-band Oracle ASM database, leave the Mount Point field empty and proceed with the mount operation.

- LiveClone of a DedupAsync image fails with error '*When attaching a live clone, the parent must be a flashcopy*', when a LiveClone operation is performed after a failback operation. [16355]

  Workaround: Wait until a successful DedupAsync job completes, and perform a LiveClone operation.

- During out-of-band file system restoration, the backup data replaces the same production data, but new data since the backup is ignored. [10298]

- When performing a Microsoft Exchange database restore, the restore operation is successful, but some log error messages are noticed in the event viewer, these are actually warning messages. [9948]

  Workaround: You may safely ignore these messages.

- Microsoft SQL database has double-byte characters in the name are not supported. [8761]

  Workaround: Rename databases without double-byte characters.

- Due to a known bug in RHEL 5.8 and earlier, and 6.0, out-of-band application backups may result in a kernel panic intermittently. [5253]

  Workaround: No alternative or patch exists. If possible, upgrade RHEL version to 5.9 or 6.1 or higher. Additionally, out-of-band applications should be configured to "Keep staging disks mapped between jobs."

Limitations and Restrictions

The following are the limitations and restrictions in IBM InfoSphere VDP 9.0:

- Dynamic disks are not supported for staging disks.

- Backups created on RHEL 7.3 systems cannot be mounted to RHEL 6.8 systems. [47664]

- Hyper-V only: VM runs a full backup instead of a low splash backup when VMs storage is moved from one cloud service vendor to another. [24783]

- ESXi hosts with time that does not match with its VMware jobs fail. This is as designed by VMware. [39241]

- Remote dedup jobs cannot record ingest, post-dedup, and post-compress stats on remote side. [16938]

- Exchange virtual machines only: Snapshots with log truncation enabled occasionally fail with error:
  `5584: VDP Connector failed to truncate log with unknown error.`

  Workaround: If any databases are in a bad state (such as `Dismounted, Failed and Suspended`) Microsoft Exchange writer returns error `VSS_E_WRITER_RETRYABLE` during log truncation request. If all databases are in good state, then only the log truncation job will succeed. This is as designed.

- StreamSnap job duration grows near exponentially when there is a delay between two clusters. [26746]

- On VVOL-based setups, if the appliance determines that LAN- free mode is applicable, VMware backups fail (VVOL-based VMDKs cannot be accessed in SAN mode). [38252]

- Image clones do not provide a GUI option for a mount point or ASM disk group. [31786]

- CLI only: When cloning a VMware VM, you cannot specify a different datastore target for the VM from the target for one or more of the VMDKs. VMware presents this error: "Disks on other datastores are not supported when using custom VM file path." [28359]

- Unable to add Oracle child application to a protected consistency group. [27759]

  Workaround: Add the Oracle application to the consistency group before the consistency group is protected.

- Database re-provision fails when Oracle database authentication is changed from OS to DB. [27586]

  Workaround: Create a new Application Aware mount database.

- (Linux Generic Applications only) The combined length of Logical Volume Name and Volume Group name hosting that Logical Volume should not exceed 108 characters. [26839]

- Rebooting a Linux host during a backup operation using IBM InfoSphere CBT driver may cause the next backup job to be a full backup rather than an incremental backup. [26880]

- Performing application aware mounts to multiple hosts in a single work-flow is not supported. [27174]

- Oracle 12c with PDB stored in File System format (not ASM) is only supported on Linux. Unix and Windows platforms are unsupported at this time. [23773]

- Reducing the disk group size is not supported due to Oracle ASM limitation. [23925]

- AIX, iSCSI only: Only single node Oracle ASM RAC clusters are supported on AIX using iSCSI. [23401]

- The log backup frequency mentioned in minutes via VDP Desktop SLA Architect is rounded to the nearest multiple of 5 minutes. [22901]

- If a NAS dataset consists of file streams, the backup job ignores these file streams and captures the rest of the data. [19262]

- Square brackets ([ ]) or forward slash (/) in a VMware datastore name are not supported. [8872]

- VDP Connector fails to auto-configure iSCSI ports of the third party iSCSI initiator on Windows. [7784]

- Application Aware Remount may shutdown the running database instance on the target host if the running database SID name matches with the one used previously during Application Aware mount. [55412]

  Example: Perform Application Aware mount on host A using SID db1, then Unmount the database. Remount the database to target host B using SID db2 while host B has a running database with name db1. Then the Application Aware remount operation may shutdown the database db1 on host B.

Limitation in LDAP usage with IBM InfoSphere 9.0:

- Support of referral by default feature is ignored. However, you can optionally turn on this feature by changing the "ldap.referral.support" parameter value to true.

- For Active Directory, the Domain Users group is not supported in this release. It does not appear in the list of mappings.