



Delphix Engine 4.2

Release Notes

March, 2015

Delphix Engine 4.2 Release Notes

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_Release

What's New for Delphix Engine 4.2

The Delphix Engine 4.2 provides a bounty of features, bug fixes, and performance improvements.

- [New Hypervisor and Cloud Support](#)
- [MSSQL Clustered Databases](#)
- [Oracle Live Sources](#)
- [Virtualizing Unstructured Files](#)
- [Enhanced Replication User Experience](#)
- [Delphix as a Backup Solution for MSSQL](#)
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- [JetStream Usage UI](#)

New Hypervisor and Cloud Support

In Delphix Engine 4.2, there is now support for running in private OpenStack clouds on the KVM hypervisor as well as in the AWS GovCloud security zone. All existing Delphix workflows are supported in both of these new environments.

MSSQL Clustered Databases

Delphix Engine 4.2 offers new support for provisioning virtual databases (VDBs) to SQL Server Failover Cluster instances. SQL Server Failover Cluster instances are now discovered when adding a Windows Failover Cluster target environment, as described in [Adding a SQL Server Failover Cluster Target Environment](#). For additional information about provisioning a VDB to a SQL Server Failover Cluster instance, see [Provisioning a SQL Server VDB](#).

Oracle Live Sources

Prior to Delphix Engine version 4.2, users ran reports against VDBs that they created with the Delphix Engine. Although this workflow helped them offload the reporting load from production, the data in the VDBs was not updated constantly. If users wanted newer data, they had to stop their reporting applications, refresh their VDBs, and resume. With LiveSources in the current release, you can run reports against data that is constantly being updated. There is one read-only live data feed per source database that is linked as a dSource on the Delphix Engine. You can point your reporting applications to this live feed. Additionally, a LiveSource will provide you all Delphix functionality provided by a dSource, such as creating VDBs. For detailed documentation, refer to [Oracle LiveSources](#).

Virtualizing Unstructured Files

Prior to Delphix Engine 4.2, the workflow for using Unstructured Files began by pulling some pre-existing external data into a dSource on the Delphix Engine. With the current release, you can use Empty vFiles to begin your project from scratch inside Delphix Engine. Empty vFiles are not provisioned from dSources; you create them from scratch with no initial content. As you create the initial content of your project, you can take advantage of Delphix Engine features such as snapshots and rollbacks. For more information, refer to [Creating Empty vFiles from the Delphix Engine](#).

Enhanced Replication User Experience

Prior to the 4.2 release, replication was managed by two separate dialog windows in the user interface (UI). The

first, the **Replication** window, handled the creation and manipulation of a replication spec (replication on the source). The **Namespaces** window allowed you to view existing namespaces (replication on the target) and initiate failover. With the current release, these two separate user interfaces have been collapsed into a single UI which is responsible for managing replication on both the source and the target. The new UI also supports configuring multiple specs on the source, which was not supported in the UI in earlier releases. Moreover, the concept of a replication spec is now referred to as a "replication profile," and namespaces are referred to as "replicas." For more information, refer to [Replication User Interface](#).

Delphix as a Backup Solution for MSSQL

Prior to the 4.2 release, users could not link source databases that were backed up by unsupported backup software. In this release, we introduce a new feature that allows you to configure Delphix to manage the backups for your databases. When the Delphix Engine manages the backups of a dSource, it takes regular, copy-only full backups of the source database, which implies that activating the feature will not interfere with existing backup management solutions. You can configure the frequency at which the Delphix Engine takes these copy-only full backups by specifying a SnapSync policy for the dSource. You can change the SnapSync policy for a dSource at any time by visiting the policy screen; there, you can either select a new SnapSync policy or modify the existing policy. For more information, refer to [Supported Operating Systems, Server Versions, and Backup Software for SQL Server](#).

Storage Migration

Delphix Engine 4.2 newly provides support for migrating storage devices on the Delphix Engine. This feature allows you to remove storage devices from your Delphix Engine, provided there is sufficient unused space, thus allowing you to repurpose the removed storage device. You can also use this feature to migrate your Delphix Engine to different storage devices by adding the new storage devices and then removing the old storage devices. For more information, refer to [Delphix Storage Migration](#).

JetStream Usage UI

In the 4.2 release, the entire JetStream usage screens have been rebuilt from scratch. The JetStream usage screens display the space usage information through a set of interactive graphs and tables. Through these screens, administrators and end-users can get insight into how space is being used in the system and how much space can be freed by deleting various JetStream objects. For more information, see [Understanding Jet Stream Usage Management](#).

Release Notes

Welcome to the 4.2 release of the Delphix Engine database virtualization system.

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4.2 Upgrade Matrix

Upgrades to Delphix Engine 4.2 are supported from 4.0.0.0 and above.

	4.2.0.0	4.2.0.1	4.2.0.2	4.2.0.3	4.2.1.0
3.2 and prior					
4.0 - 4.1					
4.2.0.0					
4.2.0.1					
4.2.0.2					
4.2.0.3					
4.2.1.0					

Key:

Color	Supported?	VDB Downtime Required? ¹
	No	N/A
	Yes	Required
	Yes	Not Required
	Yes	Optional ²

1. VDB Downtime is caused by a reboot of the Delphix Engine when DelphixOS is modified by an upgrade.

2. VDB Downtime may be optional for an upgrade when a release contains DelphixOS changes that are also optional. In such a scenario, the DelphixOS changes may be deferred (see documentation on [Deferred OS Upgrade](#)).

Tested Browser Configuration Matrix

OS Supported	Browsers Supported	Adobe Flash/Flex	Minimum Memory
Windows XP Professional SP3	Internet Explorer 8.x*	10.x	4GB
Windows XP Professional SP3	Firefox, Chrome	10.x	4GB
Windows Vista SP2	Internet Explorer 8.x*, 9.x	10.x	4GB
Windows 7	Internet Explorer 8.x*, 9.x, 10.x, 11.x	10.x	4GB
Windows 7	Firefox, Chrome	10.x	4GB
Windows 7 x64	Internet Explorer 8.x*, 9.x, 10.x, 11.x	10.x	4GB
Windows 7 x64	Firefox, Chrome	10.x	4GB
Mac OS X	Firefox, Chrome	9.0.3 (6531.9)	4GB

* IE8.x support is deprecated, and will be removed in a future Delphix Engine version.

Supported Oracle DBMS Versions and Operating Systems for Source and Target Environments

Source and Target OS and DBMS Compatibility

The source and target must be running the same DBMS/Operating System combination (for example, Oracle 10.2.0.4 on RHEL 5.2) in order to successfully provision a VDB to the target. If the DBMS versions are compatible, the OS version on a target host can be different from the OS version on the source host.

Supported DBMS Versions

- Oracle 9.2.0.8
- Oracle 10.2
- Oracle 11.1
- Oracle 11.2
- Oracle 12.1

⚠ Oracle 9.2.0.8

The Delphix Engine has limited support for Oracle 9.2.0.8 and cannot link to a database that has a compatibility setting lower than 9.2.0.8.

⚠ Oracle 10.2.0.4

The Delphix Engine does not support Oracle 10.2.0.4 databases using Automatic Storage Management (ASM) that do not have the patch set for Oracle Bug 7207932. This bug is fixed in patch set 10.2.0.4.2 onward.

Supported Operating Systems

Operating System	Version	Processor Family
Solaris	9, 10U5 - 10U11, 11U1, 11U2	SPARC
Solaris	10U5 - 10U11, 11U1, 11U2	x86_64
Red Hat Enterprise Linux	4.7, 4.8, 4.9 5.3 - 5.11 6.0 - 6.6	x86_64
Oracle Enterprise Linux	5.3 - 5.11 6.0 - 6.6	x86_64
Novell SUSE Linux Enterprise Server	10, 10SP1, 10SP2, 10SP3 11, 11SP1, 11SP2, 11SP3	x86_64
AIX	5.3, 6.1, 7.1	Power
HP-UX	11i v2 (11.23) 11i v3 (11.31)	IA64

Delphix supports all 64-bit OS environments for source and target, though 64-bit Linux environments also require that a 32-bit version of glibc installed

⚠ Required HP-UX patch for Target Servers

PHNE_37851 - resolves a known bug in HP-UX NFS client prior to HP-UX 11.31.

Supported SQL Server Versions, Operating Systems, and Backup Software**Supported Versions of Windows OS**

- Windows Server 2003 SP2, 2003 R2
- Windows Server 2008
- Windows Server 2008 R2

- Windows Server 2012, 2012 R2

 Delphix supports only 64-bit versions of Windows on target hosts and validated-sync-target hosts.

Target hosts and validated-sync-target hosts running Windows Server 2003 SP2 or 2003 R2 must install the hotfix documented in [KB 943043](#).

 There are further restrictions on supported Windows and SQL Server versions for SQL Server Failover Cluster target environments. See [Adding a SQL Server Failover Cluster Target Environment](#) for details.

Supported Versions of SQL Server

SQL Server Version	Delphix Version
SQL Server 2005 (9.0)	Delphix 3.x
SQL Server 2008 (10.0)	Delphix 3.x
SQL Server 2008 R2 (10.5)	Delphix 3.x
SQL Server 2012 (11.0)	Delphix 3.1.2 and beyond
SQL Server 2014 (12.0)	Delphix 4.1.3 and beyond

Supported SQL Server Backup Software

The Delphix Engine interacts with source database backups in the following ways:

- When linking a new source database, the Delphix Engine can use an existing full backup to load the source database data
- When performing a sync of an existing dSource, the Delphix Engine can use an existing full backup
- After the dSource is created, the Delphix Engine picks up any new backups that are taken on the source database and applies them to the copy of the source database on the Delphix Engine. This includes:
 - Transaction log backups for databases in Full or Bulk-Logged recovery models
 - Differential and full backups for databases in Simple recovery model

Delphix currently supports the following backup software for source database backups:

- SQL Server native backups
- Quest/NetVault LiteSpeed
 - If the source database is backed up with LiteSpeed, the source and the staging environments must have LiteSpeed installed on them. The version of LiteSpeed on the staging environment must be the same or higher than that on the source. Delphix currently supports LiteSpeed v5.0.0.0 and onwards.
- Red Gate SQL Backup Pro
 - If the source database is backed up with SQL Backup Pro, the source and the staging environments must have SQL Backup Pro installed on them. The version of SQL Backup Pro on the staging environment must be the same as that on the source. Delphix currently supports SQL Backup Pro v7.3 and onwards.

 Delphix does not support encrypted backups.

Supported PostgreSQL Versions and Operating Systems

✔ Source and Target OS and DBMS Compatibility

The source and target environments must be running the same DBMS/Operating System combination (for example, PostgreSQL 9.2 on RHEL 6.3) in order to successfully perform linking and provisioning.

Supported DBMS Versions

DBMS	Version	Processor Family
PostgreSQL	9.2	x86_64
EnterpriseDB Postgres Plus Advanced Server	9.2	x86_64

Supported Operating Systems

Operating System	Version	Processor Family
Red Hat Enterprise Linux 5	RHEL 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10,5.11	x86_64
Red Hat Enterprise Linux 6	RHEL 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6	x86_64

Supported SAP ASE Versions and Operating Systems

✔ Source and Target OS and DBMS Compatibility

The source and target must be running the same DBMS/Operating System combination in order to successfully provision a VDB to the target. For example, if the source is running Sybase ASE 15.7 on RHEL 6.4, then so must the target.

Supported DBMS and Operating System Versions

DBMS Versions	Operating System Versions	Processor Family
SAP Adaptive Server Enterprise (ASE) 15.0.3, 15.5, 15.7	Red Hat Enterprise Linux 6.2, 6.3, 6.4	x86_64
SAP Adaptive Server Enterprise (ASE) 12.5	Red Hat Enterprise Linux 5.x	x86_64
SAP Adaptive Server Enterprise (ASE) 12.5, 15.03, 15.5, 15.7	Solaris 10	x86_64

SAP Adaptive Server Enterprise (ASE) 12.5, 15.03, 15.5, 15.7	Solaris 10	SPARC
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Licenses and Notices

- Highstock software products is owned and licensed through Highsoft AS.

Release 3.1 - 3.1.x.x Known Issues and Changes

These are the known issues and workarounds for Delphix Engine Release 3.1 - 3.1.x.x

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Release 3.1.3.0 Changes

Bug Fixes

Bug Number	Description
24248	Creating cluster environment needs to ignore environments in namespaces

24339	Should not be allowed to resume initial load while the dSource is disabled.
24471	Confusing error message during Oracle cluster discovery when users have a database with duplicate db unique name in another environment.
24528	delphix still tries to provision if the validate_host.sh script fails
24532	replication log spew at default level
24549	Cannot log in to the CLI via console when the stack is down
24618	Powering off Delphix Engine while snapsync is running causes zero blocks in datafiles
24622	incremental replication of SQL Server is slow
24688	session stats dump with jmxtool
24689	replication throughput tracking
24694	IndexOutOfBoundsException when enabling a dSource after deleting its most recent snapshot
24707	sysadmin and delphix_admin are able to sftp into the delphix appliance
24714	recovery fails when we create a new datafile in a new subdir
24764	provisioning fails post 3.1.2. upgrade
24791	event init.ora parameter has incorrect quoting when provisioning VDBs
24804	Unable to provision VDB duplicate end points discovered on host
24833	Expand single thread dispatch to include policies that spawn jobs
24836	panic from dbuf_free_range() while doing a zfs receive
24840,25189	The Performance UI is completely blank.
24871	Space in the shared backup location breaks sync from existing backup
24879	JVM is consuming 100% of CPU on dlpx-scale1
24881	bad monitor requests filling log file
24888	Attaching dSource fails when source.name are not set
24890	VDB unavailable when failed to create control file.
24894	Multiple Workers for VDB Logsync prevents stack from coming up

24895	Initial load fails with ORA-01013
24922	Provisioning a vdb after upgrade fails with ORA-350
24952	Timeflowranges are asked for too aggressively
24962	VDB Refresh permissions in GUI should match permissions in backend
24965	ztest failure: assertion refcount_count(
24969	After upgrade 2.7.x to 3.0.6.0 no JDBC string works
24981	db_domain not used in JDBC connection entry when using wildcard notation in VDB config
24988	GUI object filtering based on search string
24999	IntroView can be very slow when gui starts up
25000	DatabaseNavView takes a lot of time at startup time
25001	Performance: Replication Spec Component calls way many invalidations
25012	Incremental replication failed on longevity java.io.FileNotFoundException
25050	SQL Server Linking from Environment Management screen does not select the database
25065	stmf_itl_task_start() must check for ilu->ilu_kstat_io is non-null
25066	Possible memory leak in the iSCSI code
25067	stmf_do_itl_dereg() has mysterious drv_usewait(10)
25072	Refreshing the source environment gets rid of the LiteSpeed version on the source
25107	leaked hold from dmu_send_impl() if dump_bytes() fails
25108	zfs recv of a send -RD stream panics
25199	Oracle VDB snapshot fails with exception.oracle.vdb.snapshot.missing_archivelogs
25381	Delphix VM shoots up to 100% utilization, with large number of UCP java threads spinning on locks
25465	Upgrade fails due to unlinked dSource with snapsync policy

Upgrading to Release 3.1.3.0

Upgrades to Release 3.1.3.0 are supported for Release 2.7.2.0 and above.

Delphix Customer Support will provide and install any patch or upgrade that is needed for an existing Delphix Engine installation.



- All dSources must be suspended and VDBs shut down prior to an upgrade or patch.
- Suspended or in-progress jobs will be removed, and cannot be resumed after upgrade is complete.

Release 3.1 Known Issues

Installation and Configuration Issues

Don't Change the Time Zone of the Delphix Engine

There is a known limitation with changing the time zone of the Delphix Engine after user data objects and snapshots have been created.

In particular, if the time zone is moved backward (e.g., Pacific Time to Hawaiian time), events and snapshots can appear out of order.

This limitation will be addressed in a future release.

Solution

Retain the original time zone specified during initial configuration.

Host Checker Script Requirements

Running the Host Checker Script, `chkHost.pl`, requires Perl, and Java release 1.5.0_22 or higher.

Do not run `chkHost.pl` as the superuser (root). Run this script as the Oracle user.

Linux Systems: Shared Memory Size and SGA_TARGET

On Linux systems that are used as target hosts: before provisioning, compare the `SGA_TARGET` configuration parameter for the VDB with the shared memory size in `/dev/shm`. The shared memory configured on the target host should match the SGA memory target. You can check the value of the configuration parameter during the VDB provisioning process. In the **Target Environment** screen of the provisioning wizard, click the **Advanced** link, and then scroll down to view the value of the parameter under **DB Configuration**. See [Provisioning an Oracle VDB](#) and [Customizing Oracle VDB Configuration Settings](#) for more information.

Solution

If the size of `SGA_TARGET` is larger than `/dev/shm`, the administrator should reduce `SGA_TARGET` in the VDB configuration parameter, and save a named template for use in provisioning other VDBs.

Alternatively, increase the `/dev/shm` size in `/etc/fstab`.

*HP-UX Systems: Cannot locate db Instances in a Custom SQL*Net Configuration*

When SQL*Net configuration files are not located in their standard location on the host, the Delphix Engine `db_instance_inspector` cannot locate instances, including for provisioned VDBs.

The `TNS_ADMIN` environment variable is used to override the default location, usually `$ORACLE_HOME/network/admin` on UNIX hosts. On many platforms, the Delphix toolkit is able to extract the `TNS_ADMIN` variable from running listener processes. On HP-UX, however, this is not done as there's no public interface available for accomplishing this.

Solution

In some cases, it may be possible to add the TNS_ADMIN to the ssh environment that Delphix Engine uses:

1. Set `PermitUserEnvironment` to `yes` in `sshd_config`.
2. Restart `sshd` daemon
3. Add `TNS_ADMIN=<loc>` to `~/.ssh/environment` for the respective OS user used by Delphix.

Delphix Engine Must be an Invited Node

If the network administrator has defined `TCP.INVITED_NODES` and `TCP.VALIDNODE_CHECKING` in `$ORACLE_HOME/network/admin`, make sure that the IP address of the Delphix Engine is included in the list of invited nodes.

For example:

```
TCP.INVITED_NODES=(172.18.100.52,172.16.100.217)

TCP.VALIDNODE_CHECKING=yes
```

If Delphix Engine is not included in the list of invited nodes, there will be an error:

```
ORA-12537: TNS:connection closed
```

Workaround

Add the IP address of the Delphix Engine to the list of invited nodes in `$ORACLE_HOME/network/admin`.

Archive Log Issues***Failure in Fetching Missing Archive Logs***

The "Fetch missing archive log" operation might fail if the target path (e.g. a path to the Flash Recovery Area) points to files that cannot be read by the OS user given to Delphix Engine for dSource creation or VDB provisioning.

Solution

Make sure all files in the target path are readable by the OS user given to Delphix Engine.

Best Practice for Fetching Archive Logs

Instead of using the **Repair** tool to fetch missing logs automatically, create a temporary directory and copy the necessary logs (specified by the "i" information icon) into the temporary directory. The Repair tool can then be pointed to that location and will repair the snapshot. This method is much more efficient than using the Repair tool alone.

Online Redo Logs on Raw Devices

The LogSync feature **is not available** in Archive + Online Redo mode if your Oracle source database stores online redo logs on a raw device.

When adding a dSource choose the **Archive Only** mode for **LogSync**. For an existing dSource, the LogSync mode can be set on the back of the dSource card.

VDB and dSource Issues

Sample Schemas on Oracle 11.2 (11.2.0.1)

If the Oracle examples that come with 11.2.0.1 are installed in your source database, Delphix Engine VDB provisioning produces a number of error messages. No data loss is associated with these errors.

Workaround

Remove the Oracle sample schemas from the source database before provisioning VDBs.

Ulimits for the Linking or Provisioning User

If a non-Oracle install user is being used for either adding a dSource or provisioning VDBs, make sure that the `ulimit` settings for this user match those for the Oracle install user on the remote host, and are sufficient to run Oracle instances.

Take New Snapshots after Changing Database Configuration Parameters

After changing a database configuration parameter on a VDB or dSource (such as setting `db_16k_cache_size` to support new 16KB block size tablespaces), immediately take a snapshot to capture the new configuration parameters.

A Full Audit Directory Causes VDB Provisioning to Fail

Delphix Engine sets the Oracle database parameter `audit_trail` setting to `none` and the `audit_sys_operations` parameter to `false` so that VDB provisioning will not generate any audit files. However, VDB provisioning may still fail with ORA-09817 if the `$ORACLE_HOME/rdbms/audit` directory fills up.

Standby Database Support

 Many prior limitations with linking physical standby databases have been lifted in the Delphix Engine 3.0 release. See [Linking Oracle Physical Standby Databases](#) for details.

Provisioning Can Fail if the `_fix_control` Parameter is Set in the Primary

In some cases, the primary database has the undocumented `_fix_control` parameter set as a result of patches applied on the primary that have not been applied to the Oracle Home on the standby.

Where `_fix_control` has been set on the primary but not on the standby, VDB provisioning can fail with an error from Oracle: 'ORA-00940: invalid ALTER command'.

Known issues in SQL Server Support**Source database upgrades**

If a source database linked as a dSource gets upgraded to a higher SQL Server version, you will need to go through the standard upgrade process outlined in [Upgrading a dSource after a SQL Server Upgrade](#) and perform a sync on the database after the upgrade.

Provisioning to a higher SQL Server version if the source is SQL Server 2005

If the source for a VDB is SQL Server 2005, then you can't provision to SQL Server 2008 or 2008R2 directly.

SQL Server 2005 databases with Full Text Catalogs

We currently don't support SQL Server 2005 databases with full text catalogs. This will be supported in a future release of the product.

Running the manual recovery script after V2P

Running the manual recovery script `Provision.ps1` after V2P may receive the following error message:

```
The term 'dlpxzfree' is not recognized as the name of a cmdlet, function, script file, or operable program. Check the spelling of the name, or if a path was included, verify that the path is correct and try again.
```

This is because the utility `dlpxzfree.exe` is not in path. It does not affect the execution and functionality of the script.

This error message will not be shown in a future release of the product.

Release 3.2 - 3.2.x.x Known Issues and Changes

These are the known issues, workarounds, and changes for Delphix Engine Release 3.2 - 3.2.x.x

- [Release 3.2.7.0 Changes](#)
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 - [Running the manual recovery script after V2P](#)
 - [Single Quotation Marks \('\) in File Names and File Paths](#)

Release 3.2.7.0 Changes

Bug Fixes

Bug Number	Description
26227 28456 31134 31134 31135 31136 31137 31220 31221 31223 31226 31226 31461 32266 32268 32269 32342 32290	MSSQL fixes and improvements
28456 29555 29792 29861 31694 30110 31573	Snapsync fixes and improvements
31142	Security fix
31153	Support for 12 character SIDs on Oracle
31908	Fix an issue where the Delphix Engine management service could hang
31989	Performance fix for cached reads

Upgrading to Release 3.2.7.0

Upgrades to Release 3.2.7.0 are supported for Release 3.0.1.0 and above.

Delphix Customer Support will provide and install any patch or upgrade that is needed for an existing Delphix Engine installation.

 All dSources must be suspended and VDBs shut down prior to an upgrade or patch.

Suspended or in-progress jobs will be removed, and cannot be resumed after upgrade is complete.

Upgrading MS SQL Server dSources

- ➔ After upgrade to 3.2, a new snapshot must be taken on any MS SQL Server dSources with no snapshots or dSources that are under replication. Until a new snapshot is taken disabling the dSource will fail.

Upgrading with Replication

- ➔ In 3.2, authentication to the replication target no longer uses NDMP user credentials. This requires the user to manually update an existing replication configuration on the replication source with a desired Delphix user with admin privileges on the replication target after upgrade.

Replication is configured through the **System > Replication** screen (or **replication spec** in the CLI). Under **Replication Target Settings** make sure you set the username and password to a user that has admin privileges on the target.

Release 3.2.6.0 Changes

Bug Fixes

Bug Number	Description
26741, 27779, 30748	Fixes for database delete on SQL Server
28221	Fixed a GUI issue when adding LUNs
30812, 30576	Replication fixes
30763	Fixed an issue where provisioning a single instance dSource to a RAC target would fail
30617	Fixed an issue where rollback of a VDB would fail with RMAN-07517
30450	Fixed an issue with CLI validation of non-sys user fields fails on existing valid connection string
30412	Lowered the frequency of notifications requested by the GUI
30366	Fixed a GUI issue related to unlinked SQL Server dSources
30161	Fixed an issue where the management stack could run out of memory
29964	Fixed an issue with displaying times and SCNs from the latest archive logs
29960	Fixed an issue with the test JDBC connectivity API
29905	Improved error messages
29850, 30552	Windows connector fixes
29698	Fixed an issue where point-in-time provisioning to a bookmark would fail

28622, 30027	Fixed issues with scroll bars in the GUI
29373	Fixed an issue with icons on the capacity screen

Release 3.2.5.1 Changes

Bug Fixes

Bug Number	Description
29978	Fixes an issue related to Oracle standby database where datafiles are added during a dSource SnapSync
30109	Fixes an issue where connecting to a VDB (created from a standby dSource) fails when using a non-sys user
30147	Fixed an issue where provision from the last SCN of a dSource (created from a standby database) might fail
30148	Increases a timeout for starting up a VDB
30149	Fixes an issue where provision may fail when using file mapping when mapping with a large # of datafiles with long names
30245	Fixes an issue where the VDB status is shown as unknown on Solaris and HP-UX platforms.

Release 3.2.5.0 Changes

Bug Fixes

Bug Number	Description
29499	Fixed an issue with SQL Server VDBs not starting automatically following a reboot of the target host.
29991, 29758, 29853, 29854, 29855	VDBs are now stopped at 95% of storage capacity and automatically restarted once storage capacity drops below 90%. dSources will stop pulling new data from sources at 85%. Once the usage goes below 82%, we will resume pulling data again.
29359	Fixed an issue with iSCSI target being offlined due to task abort timeouts
29662	Fixed an issue with retention policy execution sometimes resulting in <code>fault.policy.log.retention.old.snapshot</code>

29156	Fixed a problem where you would get exception.oracle.dbc.query.failed during SnapSync if v\$rmn_configuration has more than one entry for snapshot controlfile
29050, 29049	Fixed user permissions related issues
29539	Fixed an issue where a running job would not be recorded in job history
29881, 29696	Fixed a issues with logfile retention related to multiple TimeFlows
28972, 29657, 29686, 29688	Fixes to address naming and structure of Oracle data files and temp files
30010	Fixed an issue where RAC VDB rollback would fail due to "Failed to apply logs in database recovery"
27633, 29540	Fixed issues that could result in ORA-00600 during provisioning
29207	Fixed a GUI issue where updating the source database user credential from the dSource cards could give an error message
29687	Fix to workaround Oracle note 387210.1 which restricts the value of MAXLOGHISTORY on Oracle versions 10.2-10.2.0.0 ans 11.1-11.1.0.6
29321	Fixed a GUI issue with updating the target principal of an existing replication configuration
29697	Fixed an issue where VDB log retention could fail to delete a log
27478, 27388	Fixed issues with setting the prefix length of an static addresses
29584, 29566, 28998, 28598	Performance improvements
28540, 28541, 29426	Improved error messages
29274, 29275,	Improvements to No Open Resetlogs VDBs

Release 3.2.4.2 Changes

Bug Fixes

Bug Number	Description
29386	Fixed an issue where SnapSync would fail
29273	Fixed an issue where certain characters in VDB config templates would cause provisioning failures

Release 3.2.4.1 Changes

Bug Fixes

Bug Number	Description
29301	Fixed an issue where replication would unexpectedly fail
29286	Improved performance when provisioning when RAC is enabled

Release 3.2.4.0 Changes**Bug Fixes**

Bug Number	Description
29100	SQL Server VDB status now monitors more states
28707	Fixed an issue with SQL Server LogSync where provisioning needed the stopat to be in the source's timezone
28474	Improved performance of VDB snapshots under load
28962	Fixed an issue where Pre-Provisioning against a standby would generate an error
28904	Provision a VDB from a standby should allow the user to specify a non-SYS user
28821	Fixed an upgrade where VDBs would not start after upgrade
28741, 28742	Improved error messages related to VDB startup
28466	Fixed an issue where RAC discovery would fail
28870, 28894	Snapshot control file on non-ASM path now supported
28934	Fixed an issue where the management stack could run out of memory
28916	Fixed an issue where the GUI could disable the staging source instead of the linked source
28867	Fixed an issue where the database management screen would display garbled data
28684	Fixed an issue where the GUI's might not handle timezones with half hour offsets properly
28878	Fixed an issue where NotificationDrop objects got sent to old clients
28780, 28792, 29058, 29082, 28479	Delphix Session Protocol Enhancements
28779	Replication performance improvements
28526	Fixed an issue where upgrade would fail

Release 3.2.3.1 Changes

Bug Fixes

Bug Number	Description
28559, 28050	Fixed issues related to SQL Server environment timezones

Release 3.2.3.0 Changes

Bug Fixes

Bug Number	Description
28435	Fixed an issue with the GUI could show an action script error during the provisioning wizard
28364, 28373	Fixed issues related to block formatting during SnapSync
28261	SQL Server now supports backup paths which include \$ and ' characters
28208	Fixed an issue when failing over a replicated Windows host
28160, 27881	Object notification enhancements
28085, 28077, 27931	Fixed security issues
27953	Fixed an issue where an exception would be raised in some cases when detecting database privileges
27926	Fixed an issue with attaching a VDB on SQL Server
27892	Fixed an issue where Delphix would pick the incorrect archive logs, causing provisioning to fail
27827	Fixed an issue where stopping the auth service would fail
27789	Monitor SQL Server VDBs to check if new data/log files have been added to non-Delphix storage
27738	Fixed an issue where Environment Management does not show correct version for SQL Server environment
27737	Fixed an issue where environment discovery would not identify disk space problem
27736	Fixed an issue with umask requirements when not using Oracle user
27652, 26880, 26879	Fixed issues with LogSync and usage of archive logs

27484	Fixed an issue where VDB enable would fail if the file list changed since the last snapshot
27432, 27386	Fixed problems related to iSCSI initiator IQN uniqueness
26951	Fixed an issue where system under extreme load could run out of heap space

Release 3.2.2.1 Changes

Bug Fixes

Bug Number	Description
28186	Fixed an issue with provisioning from VDB snapshots created in Delphix 2.7.x or earlier
27808	Fixed an issue when upgrading with domain and system users with the same name

Release 3.2.2.0 Changes

- Added support for Red Hat Enterprise Linux version 6.3 and 6.4

Bug Fixes

Bug Number	Description
27810	Fixed an issue with high SCNs having an incorrect range
27808	Performance improvement when provisioning VDBs from VDBs
27770, 27750, 27613	Fixed an issue where log retention on Windows did not free up space
27657	Fixed an issue where ORA-01152 error messages during provisioning would incorrectly display warnings
27636	Fixed an issue when doing initial load from an Oracle 9i database would fail
27624	Fixed an issue where the Delphix Engine could crash while receiving a replication update
27616	Fixed an issue with the SCN End stamp not displaying when taking a snapshot
27595	Fixed an issue where cached browser data could cause incorrect strings to be displayed in the GUI after upgrading a Delphix Engine
27582	Fixed an issue where resource monitor workers were not removed when restarting the management stack

27530	Destination port is now configurable for replication
27492	Fixed an issue where SQL Server pre-provisioning fails if a file is renamed on the source
27449	Fixed an issue where tab navigation skips "Toolkit Path" when adding "Standalone Host" in the "Add Environment" wizard
27445, 27208	Fixed an issue where an initial load does not generate a fault on a NOLOGGING operation
27443	Fixed an issue with not properly checking for X\$KCCFE privileges on source databases
27420	Fixed an issue with deleting a namespace after replication failover when doing circular replication
27353	Fixed an issue where provisioning from SQL Server 2005 to SQL Server 2008 would be allowed
27261	Fixed an issue where the GUI would no longer require the email address to be set for delphix_admin
27230	Fixed an issue with the SCN range not displaying correctly on snapshots
26423	Fixed an issue where upgrading the staging instance would not be properly detected
24037	Fixed an issue when multiple SQL files with has the same physical file name

Release 3.2.1.0 Changes

Bug Fixes

Release 3.2.1.0 contains a fix for Internet Explorer running in IE7 compatibility mode not working with the Delphix GUI among several other fixes.

Release 3.2.0.0 Changes

- The Dashboard button has moved from the center of the upper page to 'Manage->Dashboards'.
- The Enabled/Disabled slider has moved to the back of the dSource and VDB cards.
- There is a new way to set up the initial network config, which is detailed upon first log in or at [Setting Up Network Access to the Delphix Engine](#).
- The limit on the number of snapshots that can be retrieved by the GUI has been lifted from 250 to 1500.
- It is now possible to refresh a VDB that is a parent of other VDBs. The children VDBs are not affected by the refresh.

Release 3.2 Known Issues

Installation and Configuration Issues

Don't Change the Time Zone of the Delphix Engine

There is a known limitation with changing the time zone of the Delphix Engine after user data objects and snapshots have been created.

In particular, if the time zone is moved backward (e.g., Pacific Time to Hawaiian time), events and snapshots can appear out of order.

This limitation will be addressed in a future release.

Workaround

Retain the original time zone specified during initial configuration. Source and Target Environment Issues

Host Checker Script Requirements

Running the Host Checker Script, `chkHost.pl`, requires Perl, and Java release 1.5.0_22 or higher.

Do not run `chkHost.pl` as the superuser (root). Run this script as the Oracle user.

Linux Systems: Shared Memory Size and SGA_TARGET

On Linux systems that are used as target hosts: before provisioning, compare the `SGA_TARGET` configuration parameter for the VDB with the shared memory size in `/dev/shm`. The shared memory configured on the target host should match the SGA memory target. You can check the value of the configuration parameter during the VDB provisioning process. In the **Target Environment** screen of the provisioning wizard, click the **Advanced** link, and then scroll down to view the value of the parameter under **DB Configuration**. See [Provisioning an Oracle VDB](#) and [Customizing Oracle VDB Configuration Settings](#) for more information.

Solution

If the size of `SGA_TARGET` is larger than `/dev/shm`, the administrator should reduce `SGA_TARGET` in the VDB configuration parameter, and save a named template for use in provisioning other VDBs.

Alternatively, increase the `/dev/shm` size in `/etc/fstab`.

HP-UX Systems: Cannot locate db Instances in a Custom SQL*Net Configuration

When SQL*Net configuration files are not located in their standard location on the host, the Delphix Engine `db_instance_inspector` cannot locate instances, including for provisioned VDBs.

The `TNS_ADMIN` environment variable is used to override the default location, usually `$ORACLE_HOME/network/admin` on UNIX hosts. On many platforms, the Delphix toolkit is able to extract the `TNS_ADMIN` variable from running listener processes. On HP-UX, however, this is not done as there's no public interface available for accomplishing this.

Solution

In some cases, it may be possible to add the `TNS_ADMIN` to the ssh environment that Delphix Engine uses:

1. Set `PermitUserEnvironment` to `yes` in `sshd_config`.
2. Restart `sshd` daemon
3. Add `TNS_ADMIN=<loc>` to `~/.ssh/environment` for the respective OS user used by Delphix.

Delphix Engine Must be an Invited Node

If the network administrator has defined `TCP.INVITED_NODES` and `TCP.VALIDNODE_CHECKING` in `$ORACLE_HOME/network/admin`, make sure that the IP address of the Delphix Engine is included in the list of invited nodes.

For example:

```
TCP.INVITED_NODES=(172.18.100.52,172.16.100.217)
```

```
TCP.VALIDNODE_CHECKING=yes
```

If Delphix Engine is not included in the list of invited nodes, there will be an error:

```
ORA-12537: TNS:connection closed
```

Workaround

Add the IP address of the Delphix Engine to the list of invited nodes in `$ORACLE_HOME/network/admin`.

Archive Log Issues

Failure in Fetching Missing Archive Logs

The "Fetch missing archive log" operation might fail if the target path (e.g. a path to the Flash Recovery Area) points to files that cannot be read by the OS user given to Delphix Engine for dSource creation or VDB provisioning.

Solution

Make sure all files in the target path are readable by the OS user given to Delphix Engine.

Best Practice for Fetching Archive Logs

Instead of using the **Repair** tool to fetch missing logs automatically, create a temporary directory and copy the necessary logs (specified by the "i" information icon) into the temporary directory. The Repair tool can then be pointed to that location and will repair the snapshot. This method is much more efficient than using the Repair tool alone.

Online Redo Logs on Raw Devices

The LogSync feature **is not available** in Archive + Online Redo mode if your Oracle source database stores online redo logs on a raw device.

When adding a dSource choose the **Archive Only** mode for **LogSync**. For an existing dSource, the LogSync mode can be set on the back of the dSource card.

VDB and dSource Issues

Sample Schemas on Oracle 11.2 (11.2.0.1)

If the Oracle examples that come with 11.2.0.1 are installed in your source database, Delphix Engine VDB provisioning produces a number of error messages. No data loss is associated with these errors.

Workaround

Remove the Oracle sample schemas from the source database before provisioning VDBs.

Ulimits for the Linking or Provisioning User

If a non-Oracle install user is being used for either adding a dSource or provisioning VDBs, make sure that the `ulimit` settings for this user match those for the Oracle install user on the remote host, and are sufficient to run Oracle instances.

Take New Snapshots after Changing Database Configuration Parameters

After changing a database configuration parameter on a VDB or dSource (such as setting `db_16k_cache_size` to support new 16KB block size tablespaces), immediately take a snapshot to capture the new configuration parameters.

A Full Audit Directory Causes VDB Provisioning to Fail

Delphix Engine sets the Oracle database parameter `audit_trail` setting to `none` and the `audit_sys_operations` parameter to `false` so that VDB provisioning will not generate any audit files. However, VDB provisioning may still fail with `ORA-09817` if the `$ORACLE_HOME/rdbms/audit` directory fills up.

Standby Database Support

 Many prior limitations with linking physical standby databases have been lifted in the Delphix Engine 3.0 release. See [Linking Oracle Standby Databases](#) for details.

Provisioning Can Fail if the `_fix_control` Parameter is Set in the Primary

In some cases, the primary database has the undocumented `_fix_control` parameter set as a result of patches applied on the primary that have not been applied to the Oracle Home on the standby.

Where `_fix_control` has been set on the primary but not on the standby, VDB provisioning can fail with an error from Oracle: `'ORA-00940: invalid ALTER command'`.

Known issues in SQL Server Support

Source database upgrades

If a source database linked as a dSource gets upgraded to a higher SQL Server version, you will need to go through the standard upgrade process outlined in [Upgrading a dSource after a SQL Server Upgrade](#) and perform a sync on the database after the upgrade.

Provisioning to a higher SQL Server version if the source is SQL Server 2005

If the source for a VDB is SQL Server 2005, then you can't provision to SQL Server 2008 or 2008R2 directly.

SQL Server 2005 databases with Full Text Catalogs

We currently don't support SQL Server 2005 databases with full text catalogs. This will be supported in a future release of the product.

Running the manual recovery script after V2P

Currently running the manual recovery script `Provision.ps1` after V2P may get the following error message:

```
The term 'dlpxzfree' is not recognized as the name of a cmdlet, function, script file, or operable program. Check the spelling of the name, or if a path was included, verify that the path is correct and try again.
```

This is because the utility `dlpxzfree.exe` is not in path. It does not affect the execution and functionality of the script.

This error message will not be shown in a future release of the product.

Single Quotation Marks (') in File Names and File Paths

We currently don't support single quotation marks (') used in Delphix connector installation paths and database backup file names and paths.

Release 4.0 - 4.0.x.x Known Issues and Changes

These are the known issues, workarounds, and changes for Delphix Engine Release 4.0 - 4.0.x.x

- [Release 4.0.6.1 Changes](#)
 - [Management Service Fixes](#)
- [Release 4.0.6.0 Changes](#)
 - [Management Service Fixes](#)
- [Release 4.0.5.0 Changes](#)
 - [Management Service Fixes](#)
 - [DelphixOS Fixes](#)
- [Release 4.0.4.0 Changes](#)
 - [Amazon EC2 Support](#)
 - [Bug Fixes](#)
- [Release 4.0.3.0 Changes](#)
 - [Bug Fixes](#)
- [Release 4.0.2.0 Changes](#)
 - [Bug Fixes](#)
- [Release 4.0.1.0 Changes](#)
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- [Release 4.0.0.0 Changes](#)
- [Release 4.0 Known Issues](#)
 - [Cross-Platform Provisioning Issues](#)
 - [Replica Provisioning Fails](#)
 - [VDB Refresh Takes a Long Time](#)
 - [Application Data Issues \(EBS and Unstructured File Virtualization\)](#)
 - [Detach of a dSource Fails](#)
 - [Oracle RAC Environments Not Supported](#)
 - [SQL Server Issues](#)
 - [Issues With Upgrades From Delphix 3.1](#)
 - [Issues With Upgrades From Delphix 3.2.3.0 or Older](#)
 - [PostgreSQL Issues](#)
 - [Replication is not Supported](#)
 - [Staging Environment Reboot Not Handled Correctly](#)
 - [Issues With Hooks](#)
 - [Script Output Not Included in Job Information](#)
 - [Performance Analytics Issues](#)
 - [Network Interface Statistics Occasionally Contain Invalid Values](#)
 - [Other Issues](#)
 - [Spurious Job in the Job History](#)

Release 4.0.6.1 Changes

Management Service Fixes

Bug Number	Description
37126	Delphix Engine fails to boot following deferred OS upgrade from 4.0.3.0 or later
36983	restarting a canceled or suspended initial SnapSync does not resume from where it left off
37149	internal metadata database race condition may cause failure during upgrade from 3.1 or 3.2

Release 4.0.6.0 Changes**Management Service Fixes**

Bug Number	Description
32231	no input validation for timeflowPoint.location when creating bookmark, results in server error when rolling back to bookmark
32232	bookmark filter by database is ignored
32233	duplicate Bookmarks names for the same dSource time flow can be erroneously created
32457	SQL Server SnapSync performance improvement
33449	Delphix Engine may not come up if restarted during replication
35602	recovery errors during Oracle VDB provisioning
35605	\$ character in SQL Server passwords results in inability to determine recovery model
35780	switchover to standby with Oracle flashback can result in duplicate snapshots displayed in Delphix Engine GUI
35989	address possible internal error during upgrade from 3.1 or 3.2
36087	fix possible resource leak if an error occurs at the start of replication
36231	internal server error if invalid input is provided to xpp/defaults API
36235	newly provisioned Oracle VDB may have no snapshot
36244	source continuity for Oracle dSources (allow SnapSync to continue after source is rolled back)
36284	provide mechanism to purge unusable Oracle logs
36412	admin email address can accidentally get set to null

36462	shutdown of an Oracle VDB with LogSync enabled can cause SCN gaps in timeflow
36497	SQL Server Post-Scripts for VDBs run as incorrect user
36736	Oracle v2p fails with large number of datafiles

Release 4.0.5.0 Changes

Management Service Fixes

Bug Number	Description
35961,36089	Delphix Engine metadata can be corrupted when the system is restarted (see technical bulletin)
35554	ASM source datafiles can be deleted when provisioning a VDB back to a source environment (see technical bulletin)
33451	enable the configuration of SNMP TRAP instead of INFORM for Delphix alerts to workaround environments where TRAPs are not acknowledged
34030	SQLServer VDB refresh fails with a server error
35045,35449	fix a possible upgrade issue with Delphix Engines that have SQLServer dSources or VDBs
34220	GUI not rendering sources and groups properly after having popped up an error dialog
34332	cannot delete a VDB template when the template name is too long
35381	faults count on the menu bar does not matches the faults count in the active faults list
35466	add a scroll bar to the active jobs tab
35491	user alerted of a fault but the GUI faults list is empty
35540	increase SnapSync policy timeout limit from 24 hours to 168 hours (1 week)
35701	blank error popups sometimes displayed and eventually result in runtime exceptions
35704	GUI does not show error message when VDB provisioning fails due to a mount failure
35712	unable to set the SnapSync policy timeout to 0 using the GUI
34888	network outage can cause Oracle V2P job to fail with a server error

34884	canceling an Oracle V2P job hangs if the host is unreachable
34584	Oracle logsync can erroneously start fetching old logs resulting in missing log alerts
35439	Delphix Engine can generate a flood of alert emails if an alert profile contains an invalid email address
34786	analytics disk IO section is empty on IE 8 when Read or Write is selected
34471	unable to disable VDB when environment is unavailable
34583	the Finish and Back buttons do not work when provision a replicated VDB
35400	unable to scroll to bottom of environment list after 4.0.3.0 upgrade
35402,35488,35489	miscellaneous GUI fixes for faults
32735	filtering by job type does not work for certain values
35312	DSP performance improvement (impacts SnapSync, replication, and Oracle Export)
34766	Delphix Engine upgrade can fail if incremental SnapSync job is in progress
33717	Oracle VDB provisioning via CLI uses a listener from the wrong environment
34851	Oracle RAC attachSource failing with snapshot control file must be accessible to all nodes
35713	add the ability to launch a job via policy with no time limit
35044	the Delphix Management Service is not automatically restarted if it fails

DelphixOS Fixes

Bug Number	Description
33924	TCP performance problem causing low throughput for connections traversing one or more routers
35174	upgrade openssl to 1.0.1h (security advisory)

Release 4.0.4.0 Changes

Amazon EC2 Support

As the basis for the Delphix Compliance Engine, version 4.0.4.0 adds support for the Amazon EC2 platform.

Bug Fixes

Bug Number	Description
34716	upgrade Tomcat to version 7.0.53
35012, 35018	stop exporting a writable /public filesystem

Release 4.0.3.0 Changes**Bug Fixes**

Bug Number	Description
32600	alert sysadmin when logfile storage runs out of space
32952	add option to disable non-LDAP users
32955	mechanism for limiting which IP addresses are reachable via ssh
33306	infinite loop when enumerating storage devices
33338	GUI: vFiles migrate button should be enabled when vFiles is disabled
33351	runtime exception when migrating vFiles
33607, 33965	support for Compliance Engine
33652	renaming database files during provisioning can result in enqueue timeout
33686	"object already exists" error when failing over appdata with builtin toolkit
33788	Oracle logsync can fail with an internal error after upgrade to 4.0
33837	allow user with 'sudo mount' to be different from owner of provisioned appdata files
33864	non domain admin users don't get prompt back when they issue a DB_DELETE job (last notification does not arrive)
33903	internal error trying to provision appdata to s10 target because id doesn't support -u option
33904	cli error assigning an authorization on a target in a namespace
33937	updating AppData VDB parameters on vFiles card in GUI overwrites password with "*****"
33978	need to preserve case when editing and saving VDB config template contents
33989	EBS toolkit PATH should include /usr/ccs/bin

34058	after the currently selected VDB Template is saved, it should always be auto-refreshed
34059	GUI: problem editing a VDB template while creating a VDB
34064	storage device notifications posted before device cache set
34073	support for BoKS in target environments
34075	dSource name is shown instead of VDB name in Refresh VDB confirmation dialog
34388	updating hook operations on appdata in GUI fails with internal error
34427	EBS-app toolkit missing expect logic for db domain name, file system owner and startup
34509	stack-only upgrade

Release 4.0.2.0 Changes

Bug Fixes

Bug Number	Description
31280	problem creating two bookmarks with the same name
31454	improve efficiency of SQL query used by Oracle logsync
31695	container update notifications not being sent for enabling or disabling of Oracle dSources
32053	handle Postgres staging environment reboots
32059	cannot add an environment if it contains an Oracle database whose db_unique_name is equal to an existing dSource
32061	Delphix Engine now drops all IP packets containing source routes
32063	explicitly set the anon option on nfs shares
32420	fix out-of-range issue when upgrading from 3.2.3.0 or older and SQL Server environments are in different timezones than the Delphix Engine
32593	XPP log file path is displayed incorrectly in faults
32703	fix a panic in DxFS
32733	allow user to pick staging environment for replica XPP
32862	add support for Postgres replica provisioning

32973	collapsed groups spontaneously expand after 30-60 seconds
32992	expanding a group or container details should not expand any group folder
32994	add support for linux systems without stdbuf
33002	VDB migration fails when parent's archive logs have been removed
33072	can't start SQL Server VDB after upgrading with the VDB in a stopped state
33129	add support for hosts configured with Etc timezone format
33209	snapsync can fail with an internal error when linking to an Oracle database on AIX
33251	unable to disable VDB when its database on MSSQL does not exist
33252	add a delayed retry to SQL Server transaction log pickup before generating an alert
33352	renaming a group causes its folder to automatically expand
33373	fix GUI memory leaks
33388	grant permissions to SQL server instance owner during VDB enable
33389	unable to refresh SQL Server host - object already exists

Release 4.0.1.0 Changes

Bug Fixes

Bug Number	Description
31278	missing container name in the "add dSource" wizard
31279	GUI rendering issue when a long VDB note is used
31281	cross-platform provisioning from a replicated dSource
31392	restart SQL Server VDBs in RECOVERY_PENDING state following a target reboot
31398	fix a problem with RECOVERY_PENDING SQL Server VDBs not being restarted after a target reboot
31459	retention policy should use last change time instead of creation time for calculating snapshot retention eligibility

31648	hostchecker doesn't print an error if inventory.xml has the wrong permissions
31649	hostchecker should not query for BCT when Oracle version is 9.X
31650	hostchecker crashes if Oracle oratab does not exist
31687	analytics screen disk I/O graph loses its lower summary row when selecting a specific latency range
31728	hostchecker erroneously reports that Oracle may not be functioning properly
31754	disabling or enabling a system user is not reflected in the GUI until the browser is refreshed
31825	cannot manage both Postgres and SQL Server dSources from the GUI
32042	internal error during cross-platform provisioning due to a lower-case tablespace name
32110	'excludes' and 'followSymlinks' properties of AppDataLinkParameters do not appear in CLI while linking
32115	spurious jobs are executed as part of the management stack startup
32129	the capacity graph displays inconsistent data
32151	internal error during cross-platform provisioning
32188	errors during the export phase of cross-platform provisioning are not displayed
32227	reduce CPU impact of SQL command run on Oracle targets used to discover database user privileges
32250	cross-platform provisioning fails if the database has an offline datafile
32305	fix for point-in-time provisioning from a replicated Postgres dSource
32306	vfiles source is erroneously disabled following a failed provisioning job
32362	cross-platform provisioning user script is not replicated
32376	SQL Server snapshot corruption occurs if a source is disabled before Delphix Engine upgrade
32413	snapsync performance improvement
32435	failure provisioning an Oracle VDB if the source contains a datafile with spaces in the filename

32508	cross-platform provisioning experiences internal error if user script output is less than 256 characters
32512	network interface analytics graph doubles throughput and packet counts
32525	analytics screen cosmetic improvements
32526	analytics screen cosmetic improvements
32527	network interface analytics graph vertical axis scale is too large
32528	navigating on the analytics timeline erases graph data from the screen
32537	fix for Postgres point-in-time provisioning after replication
32614	GUI support for additional mount points for vfiles
32644	cross-platform provisioning does not save storage space
32704	scalability issue in the GUI that caused "Flash plugin not responding" popups in the browser
32766	GUI can become unresponsive for minutes after login
32858	fix for a Delphix Engine memory leak
32859	support for Oracle RAC to single instance in the EBS toolkit
32873	run adpreclone in the pre-snapshot EBS toolkit hook
32875	provide default values for EBS toolkit parameters

Release 4.0.0.1 Changes

Bug Fixes

Bug Number	Description
32755	fix for an OS panic in DxFS

Release 4.0.0.0 Changes

- Delphix network services are increasingly using the Delphix Session Protocol. In this release, SnapSync, V2P, and the Unix Connector (used to run Oracle and Postgres hooks) have been re-architected use the protocol. This places new network connectivity requirements on the product and the hosts that interact with Delphix Engines. See [Network and Connectivity Requirements](#) section of the documentation for details.
- VDB Pre/Post-Scripts have been superseded by the new [Hook Operations](#) feature. Any post-scripts configured on existing VDB will automatically be converted to Configure Clone hook operations as part of the upgrade to 4.0. Pre-scripts are no longer supported and will be removed on upgrade.
- Delphix Engine upgrade images are now signed by Delphix, and signatures are verified prior to upgrade. This ensures that only updates authorized by Delphix can be applied to a Delphix Engine.

- The Oracle and PostgreSQL VDB provisioning wizard includes a screen for configuring user-defined hooks to be run during specified VDB operations. See the [documentation](#) for further details.
- A summary of storage capacity metrics is now displayed on the main screen after login.
- Most of the performance monitoring functionality that was previously accessible via the Performance screen has been re-implemented and moved to the new [Performance Analytics](#) screen.
- New advanced data management options are available from the Oracle dSource wizard. See the [documentation](#) for further details.
- Policies may now be expressed using cron format. The Delphix Engine uses expressions compatible with the [Quartz CronTrigger scheduler](#).
- New VDB Configuration Templates GUI screen.

Release 4.0 Known Issues

Cross-Platform Provisioning Issues

Replica Provisioning Fails

Doing cross-platform provisioning of a VDB from a replicated dSource fails with an internal error. To work around this, create a VDB of the replicated dSource, and do a cross-platform provision of the VDB.

VDB Refresh Takes a Long Time

The time taken to refresh of a cross-platform provisioned VDB is similar to the time taken for cross-platform provisioning. This is because the refresh process re-provisions the VDB, including much of the cross-platform provisioning logic. We are investigating how to improve this in a future release.

Application Data Issues (EBS and Unstructured File Virtualization)

Detach of a dSource Fails

Detaching an Application Data dSource fails with an internal error. There is no workaround.

Oracle RAC Environments Not Supported

Application data repositories cannot currently be created in Oracle RAC environments.

SQL Server Issues

Issues With Upgrades From Delphix 3.1

If any dSource is disabled prior to upgrade and enabled after upgrade the following issues are seen:

- Validated sync might fail with a fault stating that the most recent transaction log failed to be restored.
- Even if validated sync succeeds, provisioning a VDB from a snapshot after the upgrade will fail with an internal error as the VDB cannot be recovered. Provisioning from any snapshot taken prior to upgrade continues to work.
- If a dSource is disabled after the upgrade, the subsequent enable can fail with an error stating that the dSource could not be enabled as the corresponding staging source could not be enabled.

This can be resolved by doing a sync on the dSource after the upgrade.

Issues With Upgrades From Delphix 3.2.3.0 or Older

If the source host and Delphix Engine are in separate timezones provisioning VDBs after upgrade from snapshots

taken before upgrade may fail with timestamp out of range errors. Provisioning from snapshots taken after upgrade works correctly.

PostgreSQL Issues

Replication is not Supported

There are some problems associated with provisioning a VDB from a replicated PostgreSQL dSource. Replication is not yet fully supported with PostgreSQL.

Staging Environment Reboot Not Handled Correctly

If a staging environment is rebooted, the pg_receivevlog process starts writing log files to the local filesystem instead of the NFS directory mounted from Delphix. This results in missing logs, and the inability to re-enable the staging environment after it has been disabled.

Issues With Hooks

Script Output Not Included in Job Information

The output of user scripts is not included in the job information unless the script fails (exits with a non-zero exit code). This can make it difficult to diagnose problems with scripts if they are doing something unexpected but not failing.

Performance Analytics Issues

Network Interface Statistics Occasionally Contain Invalid Values

Statistics for network interface bytes/sec and packets/sec occasionally include invalid negative values. This is exhibited in the GUI as large spikes in the respective graphs. This has only been observed on systems with multiple network interfaces.

Other Issues

Spurious Job in the Job History

When the Delphix Engine starts up, a spurious job is always run with summary, "Restore the application containers to a consistent state in the event of a failure during an operation." This job is spurious and does not affect any system state. It can safely be ignored.

Release 4.1 - 4.1.x.x Known Issues and Changes

These are the known issues and workaround for Delphix Engine release 4.1 - 4.1.x.x

- [Release 4.1.6.0 Changes](#)
 - [Management Server Fixes](#)
- [Release 4.1.5.0 Changes](#)
 - [Management Server Fixes](#)
 - [DelphixOS Fixes](#)
- [Release 4.1.4.0 Changes](#)
 - [Management Server Fixes](#)
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 - [Management Server Fixes](#)
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- [Release 4.1.0.0 Changes](#)
- [Release 4.1 Known Issues](#)
 - [Rebooting](#)
 - [Must Disable Performance Mode Before Rebooting](#)
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 - [Point in time provisioning on ASE 12.5 is not supported](#)
 - [Oracle 12c Pluggable Database Issues](#)
 - [Cross-Platform Provisioning Issues](#)
 - [Source Validation First](#)
 - [Unsupported Oracle Features](#)
 - [VDB Refresh Takes a Long Time](#)
 - [Application Data for Windows Issues \(Unstructured File Virtualization\)](#)
 - [Toolkits and Hook Operations Not Yet Supported](#)

Release 4.1.6.0 Changes

Management Server Fixes

Bug Number	Description
DLPX-34837	RMAN recovery should limit to use disk channels
DLPX-35993	Standby dSource has Missing Archive Logs Sequence {0}
DLPX-35671	Check for Oracle bug 13075226 fails on 11.2.0.3 with patch installed
DLPX-35672	Oracle snapsync prescript fails if the script returns successful status but stderr has content
DLPX-34581	450K+ executions of query ran in LogSync code in prod database
DLPX-35855	MSSQL provisioning with LogSync creates VDB with recovery model of FULL
DLPX-35809	MSSQL pre-provisioning trying to open backup files in write mode
DLPX-35872	MSSQL Recovery model not set during V2P
DLPX-35746	Refactor iSCSI mount script to avoid running diskparts as much as possible
DLPX-35667	Handles to vds.exe increased because Diskpart doesn't call exit explicitly
DLPX-36015	Faults raised for recovered error - TLog was busy
DLPX-35668	ASE GUI does not set loadBackupServerName when Remote Backup Server selected
DLPX-34958	Deleting a container results in exception.executor.object.missing
DLPX-34824	RFE: see the template name on the back of the VDB card with a pencil for edit
DLPX-35888	Performance Management UI always shows no data
DLPX-32228	After applying a policy to a VDB or Group, the server need to notify the client of the changes
DLPX-35334	Waiting SNMP listener threads caused Delphix to run out of memory and hang
DLPX-32792	Replication manifests contain passwords
DLPX-35931	ReplicationMetadataReceiver cleanupNexus does not handle null nexus
DLPX-35358	ReplicationStreamScheduler should not store a reference to the manifest
DLPX-32985	RuntimeException constructed in SshExecSessionImpl.close

DLPX-34854	Need to rotate stdout.log
DLPX-29991	hs_err_pid files from java crashes are removed when stack restarts
DLPX-29992	RFE: capture hs_err_pid files in support logs bundle
DLPX-35484	MDS upgrade scripts for 4.1.5.0
DLPX-34865	Java core taken on OutOfMemory cannot be used for reference backtracing
DLPX-35948	Upgrade netty from 3.6.3 to 3.9.4

Release 4.1.5.0 Changes

Management Server Fixes

Bug Number	Description
DLPX-32566	Can't create Jet Stream branch with latest data from the template
DLPX-32865	Jet Stream should replicate DVCBBranchActivityDOs
DLPX-32585	Jet Stream LatestTime should always use SemanticTimeflowLocation.LATEST_POINT
DLPX-35304	test_add_and_delete_multiple_vdbs_concurrently fails due to exception.oracle.targetscripts.db.recovery during vPDB provisioning
DLPX-31885	Creating a Jet Stream branch at now doesn't include latest changes on Oracle VDBs
DLPX-34757	concurrentRefreshOfContainersInSameTemplates Jet Stream unit test failure
DLPX-34649	Jet Stream should use rollback instead of refresh when appropriate
DLPX-34191	Jet Stream objects are not listed in web api page
DLPX-34414	Jet Stream only tracks initial timeflows of data template's data sources
DLPX-34390	Refactor Jet Stream time drift calculation for engine time API
DLPX-32565	Refactor Jet Stream TimelineParametersConverterImpl to be easier to understand
DLPX-34117	Remove Oracle SnapSync reliance on RFN
DLPX-32958	Oracle SnapSync failure with NPE in updateProgressingDataFileState

DLPX-34620	Oracle SnapSync failed for read only datafile on dSource, regression introduced by fix for 34064 Remove SnapSync reliance on RFN
DLPX-34396	Oracle SnapSync job stuck at zero percent complete, client Java in lwp_cond_wait
DLPX-31765	Oracle SnapSync fails when database has '_fix_control string 5909305:ON' set to non-null value
DLPX-33317	Handle special characters in drop restore point logic in doDisableFlashback.sh
DLPX-33122	Oracle 12c failed vPDB provision or failed vPDB enable due open vPDB failures are not handled, partially provisioned vPDB is left around
DLPX-33121	get_pdb_status script function needs to validate if PDB is in RESTRICTED mode
DLPX-32991	NFS acl interferes with SAP archival process
DLPX-33320	Oracle purgeLogs not working as expected
DLPX-34335	When archived logs are in recovery area, directories can be created with incorrect permissions.
DLPX-33123	Expect script exception should maps to OracleTargetsScriptsExceptions, instead of vanilla DelphixUserException
DLPX-34622	Unsubstituted strings in removeUnneededZFSFiles() in oracle.snapsync.impl.SnapSyncJob.java
DLPX-34011	MSSQL export storage container after validation during enable
DLPX-34009	MSSQL Standardize SQL script generation
DLPX-33198	Incorrect handling of failover instances for Availability Groups
DLPX-33294	MSSQL VDB enable job hung up behind other sql jobs
DLPX-32519	Refresh/Provision can fail for MSSQL during standby phase if exclusive lock fails
DLPX-32572	MSSQL Provisioning should only switch to standby and back when doing point-in-time restores
DLPX-32571	MSSQL Provisioning should only mount source-archive when doing a point in time restore
DLPX-34423	MSSQL VDB monitoring broken
DLPX-34010	Able to delete Primary User when environment is an AG cluster and no databases are linked
DLPX-34007	Failed operations leaving MSSQL database in single user mode

DLPX-31383	We should inform customer when we detect that iSCSI initiator is not running
DLPX-31081	Continuation of "MSSQL Backup set appears to have been deleted for a snapshot"
DLPX-34808	Throw DUE to contact support if symptoms for DLPX-34135 are seen
DLPX-28057	Error message when ppt MSSQL instance owner cant read backup location can be improved
DLPX-33049	Workaround from 38187 leaves MSSQL VDB in restoring state after disable/enable
DLPX-34084	Able to break MSSQL provisioning by connecting to VDB before provisioning had completed
DLPX-34712	ASEHostEnvironmentDiscoveryProvider.discoverInstances discovers incorrect UID/GID for ASE processes
DLPX-34005	ASE environment discovery assumes user's default database is master
DLPX-34728	Sybase ASE toolkit subdirectories should be created with group write
DLPX-34650	AppData rollback should not run toolkit 'provision' hook
DLPX-31395	message_action for DB_SYNC needs improvement for AppData
DLPX-32894	PgSQLWALSegmentDO constraint violation in PgSQLBaseLogProcessor
DLPX-33001	ssh does not have inactivity timeout
DLPX-34793	Refreshing environment after target server rebuild results in spurious connection error
DLPX-34044	UnixMounter broken for key based authentication
DLPX-34214	Bump up the default socket buffers for replication
DLPX-33303	Sanitize product names on upgrade
DLPX-35323	4.1.5.0 to trunk upgrade fails with checksum mismatch for migration
DLPX-33248	Add new 4.1.x migration files for MDS unit tests
DLPX-34662	DFE Error while retrieving MDS version on upgrade to trunk
DLPX-31685	Quota on rpool/update is too small
DLPX-34658	Implement generic ObjectReference-based locking strategy
DLPX-34640	pfexec on solaris ends up calling dlpx_pfexec

DLPX-32665	mkdir/rmdir no longer run without elevated privileges
DLPX-34745	Not trying to run rmdir without dlp_x_pfxexec

DelphixOS Fixes

Bug Number	Description
DLPX-31490, DLPX-34665	Increase default idm send/receive buffer sizes
DLPX-34215	traverse_prefetcher does not prefetch enough

Release 4.1.4.0 Changes

Management Server Fixes

Bug Number	Description
DLPX-32834	V2ASM for RAC database should use SRVCTL stop instead of SQLPLUS shutdown abort
DLPX-32832	move-to-asm.sh fails with "Use Oracle install user to run this script" error
DLPX-32666	use 'SQBHEADERONLY' as opposed to 'HEADERONLY' for reading Redgate backup headers
DLPX-31381	enable MSSQL dsource failing staging db already exists
DLPX-33045	validated MSSQL sync logs expected interrupts to the error log
DLPX-32726	fix internal error while discovering MSSQL cluster environment backup software
DLPX-32518	support using the original backup location with MSSQL dSources
DLPX-31978	opportunity to improve efficiency of finding MSSQL backup file
DLPX-31945	MSSQL discovery does not detect Redgate backup software when the Redgate GUI client is not installed
DLPX-32684	getting ASE instance ports fails when client character set is different from server character set
DLPX-31827	jobs with percentComplete of 100 should have a jobState=COMPLETED
DLPX-33262	admin app appears in 30% of the screen height
DLPX-33281	JetStream should not come up in IE7 mode when actually in IE9 compatibility mode
DLPX-32913	hard to see the pencil to switch from scn to level based backups on back of dSource card

DLPX-32821	capacity screen has wrong units for retention periods
DLPX-32806	snapshots aren't retrieved more than once on capacity screen
DLPX-32607	capacity screen snapshots pulldown screen takes minutes to display snapshots
DLPX-32284	provide a warning banner on the login page to warn people when they are using too-old a browser
DLPX-32209	"dSource is unlinked" display for each click on dSource
DLPX-30951	GUI can get confused during storage configuration resulting in spurious "in use" error
DLPX-29317	duplicate usernames fail to login to Server Setup interface
DLPX-33293	standardize long, float, and double API types into integer and number
DLPX-33292	consolidate API JsonType enums
DLPX-34069	fix internal error under some conditions during stack startup
DLPX-34051	fix internal error while processing alerts during upgrade
DLPX-33190	fix internal error in replication after upgrade
DLPX-33062	fix internal error in incremental replication on MSSQL / ASE due to dataset is busy
DLPX-32388	fix internal error in TransactionalFilesystemManager during on stack startup when deleting deadbeats
DLPX-32672	fix internal error in StorageConfigurationManagerImpl blocking storage setup
DLPX-32824	add unit testing for upgrades

Release 4.1.3.2 Changes

Management Server Fixes

Bug Number	Description
39605	remove instrumentation which causes benign memory free to crash the management server

DelphixOS Fixes

Bug Number	Description
39598	fix free of invalid memory address when enabling a network interface

Release 4.1.3.1 Changes

Management Server Fixes

Bug Number	Description
39193	increase TCP tunables to maximize NFS read throughput on 10Gbit networks

DelphixOS Fixes

Bug Number	Description
39198	increase network I/O ring sizes to maximize throughput on 10Gbit networks

Release 4.1.3.0 Changes

Management Server Fixes

Bug Number	Description
38548	Refresh/rewind/stop-start of VDB on Linux fails, leaving stale mounts
38046	Hook execution not generating job events nor updating completion percentage
38007	Internal error getting current redo log status for Oracle DB
38200	Query returning duplicate entries for an Oracle tempfile
37893	Need to verify compatibility before plugging Oracle 12c vPDB into a target CDB
37369	Oracle SnapSync stuck in failure loop causing performance problems
37712	Oracle provisioning failed while creating file under the datafile mount
37697	Internal error during initial SnapSync of Oracle 12c PDB when environment user is changed from the environment
37817	Logs needed for Oracle snapshot: compare deleted logs on dSource to missing logs in snapshot
38364	Improve reporting for Oracle archive-log-current failures
38436	SQL Server 2014 Support
38219	SQL Server internal_version ranges are incorrect
38470	SQL Server provision fails when source DB was in read-only mode when backed up

38201	Could not redo log record when sync'ing SQL Server dSource
37756	Failure during refresh where SSMS cannot drop database because it is currently in use
37663	Add support for Sybase ASE version 12.5
38361, 38820	Add support for Sybase ASE on Solaris
38006	Internal error deleting PostgreSQL database
38316	AppData SnapSync jobs stuck at 0% when the connector does not start
37997	Connector needs to support larger payload
37460	Could not start remote shell because of pattern matching failure
38730	Checking mounts fails when findmnt is not installed
38488	Refactor environment monitor check success logic
37981	Internal error in environment monitor during MSSQL file deletion
38329	Hostchecker failing for option 4: JDBC connect to dSources
38480	Fix hostchecker check for option 4: Check Oracle DB Instance
38489	Hostchecker should display errors more prominently
38490	Hostchecker claims it is using oci, but in reality it is using thin
38194	Snapsyncs are hanging at 0% after upgrade to 4.1.1.0
37532	Bumping the API version in the PAM module shouldn't require an OS upgrade
38162	Internal database upgrade is broken in 4.1.3.0
38772	Rolling back after a failed upgrade does not work
38670	Remove SSLv3 for CVE-2014-3566
37883	Jet Stream is not clearing the previous segment field of a segment when that object is deleted
37749	Add a link to Jet Stream Capacity Information KB article on the Capacity page
36798	Gather additional debugging information by forcing stack crash on out-of-memory conditions
37884	Generating a support bundle may use a non-admin user, resulting in incomplete bundle data

38098	Internal error sending support bundle
38203	SNMP trap varbind data is out of order which confuses the Tivoli Netcool SNMP implementation
38287	Add "Copy Data Engine" product type
37998	Fix exception handling code so that it is idempotent
38103, 37847, 37844, 37839, 37842, 37843, 37846, 37840, 37841	Unit testing improvements

DelphixOS Fixes

Bug Number	Description
37650, 37777, 37778, 37779	Improve filesystem prefetch (and disable it by default)
37965	Storage LUNs failing to expand, although visible in "Sysadmin > Capacity" screen
38349	Update Bash version

Release 4.1.2.0 Changes

Management Server Fixes

Bug Number	Description
35193	Provisioning fails with "Failed to rename datafile" when dSource has no valid tempfiles
37541	Linking and provisioning PDBs on SPARC fails Provision against PDB into SPARC CDB hangs
37618	PDB provision fails on SPARC with exception.oracle.targetscripts.pdb.plug
36877	Linking Oracle on SPARC sometimes fails
36917	Deleting a 12.1.0.2 VDB Failed with ORA-65179
36899	Provision against 12.1.0.2 PDB failed to open database after recovery
36292	Need to leave the auxiliary CDB around when PDB provisioning fails
37818	Fixed internal error in PDB linking for in a RAC CDB
37162	Need to include PDB\$SEED datafiles in CDB snapshots
36780	Oracle Source Continuity: detect and throw an error on vPDB resetlogs

36778	Oracle Source Continuity: add support for PDB resetlogs
36752	RMAN command file filename length can exceed filesystem limit
36289	_controlfile_enqueue_timeout should not be overridden during Oracle provisioning
37062	SnapSync should fail if post RMAN queries time out
36611	Oracle connection verification does not check v\$rman_configuration when linking
37055	SnapSync hangs after archived log backups when LogSync is disabled and no archived logs need backup
36120	Check and set umask before switching archive logs as part of SnapSync
37668	MSSQL dSources in simple mode not able to pull in new full backups
36379	MSSQL provisioning fails when requested from API version 1.1.1 or lower
37158	SAP ASE warning is not sent if "Discover SAP ASE" option was not set
37157	Log backup for SAP ASE changes the snapshot time of the first backup when not required
36846	Internal error during sync on a replicated SAP ASE dSource after failover
36640	Change JDBC driver to jConnect for SAP ASE databases for better progress reporting
36466	AppData toolkit calling stop scripts on delete of failed provision
37297	Fix internal error in pre-provisioning
37242	Fix V2P failure due to "Could not change permissions for file"
37476	Auto-refresh the capacity management page
37437	Refreshing cluster environment failed with internal error
36797	Add debugging information to help diagnose out-of-memory issues
37054	ntpq -p times out when using IPv6
37493	Hostchecker needs to check group permissions
37492	Hostchecker tarball should include a top level directory

37371	Hostchecker permissions check is too strict for target servers
37060	In some shells, pluggable sudo may require passwordless sudo
37044	Add tool to help support engineers create host privilege elevation profiles
37236	VDBs not automatically disabled when upgrading OS following deferred OS upgrade
37494	Creating a Jet Stream bookmark with LATEST_TIMESTAMP doesn't work as intended for Oracle dSources
37043	Deleting Jet Stream container can leave mount points with stale file handles
37357	Jet Stream bookmark at now does not actually create a bookmark at now
37299	Deadlock detected in Jet Stream bookmark query
36766	Improved an error message related to policy cutoff times

DelphixOS Fixes

Bug Number	Description
37402	Minor filesystem tuning improves I/O performance in some cases

Release 4.1.1.0 Changes

Management Server Fixes

Bug Number	Description
36710	Disable / enable prevents backup history from running
36178	Pre-provisioning is using production memory settings which is overwhelming target servers
36565	Preserve dSource across RESETLOGS for non-12c Oracle DBs
37207	End timestamp for a log fetched by LogSync in Archive Redo mode can be incorrect
36256	GUI crashes on jobs with tons of events
35789	Recovery errors during provisioning
36735	V2P fails with large number of datafiles

36982	SnapSync resumed initial load will backup files that have already been backed up
36796	Creating more than one VDB template fails
36175	SnapSync failure with internal error
36398	Internal error in ASE DB deletion
36109	ASE DB container runtime output should be formatted for timezone
36745, 36936	Windows AppData source derivative can not be replicated
37240	Add XPP support for SYSTEM dictionary managed tables
37239	Depending on the order of datafiles retrieved from database, XPP will fail with internal error
36624	Provide simple HTML report of XPP activities
36519	Event list on back of active job is in reverse order
36054	All dSources appear to be unlinked after reloading page
36631	Clicking on a dSource in databases list fails
35604	Recovery model of dSources shows None
35878	Switching timeflows failed for 12c VDB
35853	Add dSource "Advanced" should be taken out for PDB linking
35323	NPM-enabled VDBs will not be mounted after Delphix reboots if the VDB was disabled earlier
36935	JVM hung in forkAndExec on Solaris host due to deadlock in PKCS11 crypto library
36174	Can't delete a disabled MSSql dSource when environment disabled
36413	delphix_admin email address incorrectly got unset
36567	Need a way to purge unusable logs
36060	PKCS11 consumes too much native memory on Delphix for SSL sessions
36719	Provision validation doesn't use -nosuid for mount of /public
35621	Upgrading Delphix with an LDAP server using MD5 authentication makes LDAP unconfigurable
36146	Check registration status of appliance from server admin pages

36900	Enable challenge-response PAM module on release OVAs only
36960	Improper use of sizeof compromises challenge-response PAM module
36974	Add a tunable to control the "static attributes check period"
36975	Add a tunable to disable remote checks in the environment monitor
36613	Minimum OS version not set correctly for stack-only upgrade
37125	Upgrading stack-only from 4.1 to 4.1.1 renders system unbootable
36850	Upgrading stack-only from 4.1 to 4.1.1 fails because PostgreSQL times out
37122	Rare upgrade issue when upgrading from 3.2.6+ to 4.0.6.0
35988	Rare upgrade issue when upgrading from 3.2 to 4.1

DelphixOS Fixes

Bug Number	Description
37219	Rare kernel panic on 4.1.0.0

Release 4.1.0.0 Changes

- Delphix network services are increasingly using the Delphix Session Protocol. SnapSync, V2P, and the Unix Connector (used to run Oracle, PostgreSQL, and SAP ASE hooks) have been re-architected to use the protocol. This places new network connectivity requirements on the product and the hosts that interact with Delphix Engines. See [Network and Connectivity Requirements](#) for more details.
- A network benchmarking tool has been added to the Delphix Engine for testing network performance when setting up new environments and when debugging network performance anomalies. See [Using the Network Performance Tool](#) for more details.
- The queries that Oracle LogSync uses have been improved to generate even less impact on the source database.
- If you mouse over an object that is showing a warning / fault, a tooltip will now appear with a description of the fault.
- Oracle V2P has new advanced data transfer options. See [the Oracle V2P documentation](#) for more details.
- Cross-platform provisioning has new GUI support for cross-platform script deletion and downloading, plus a new report which displays a summary of activity. Some additional unsupported Oracle setups are now noticed earlier in the process of performing a cross-platform transformation and reported as errors. See [the documentation](#) for cross-platform requirements.
- The "Provision" job in previous versions has been split into separate "Provision" and "Snapshot" jobs.
- It is now possible to launch a job from a policy without specifying an execution timeout limit.
- Performance and accuracy improvements were made for the [Performance Analytics](#) screen.

Release 4.1 Known Issues

Rebooting

Must Disable Performance Mode Before Rebooting

If there are any VDBs with performance mode enabled, performance mode must be turned off for those VDBs prior to reboots and upgrade. Otherwise, they may not be mounted correctly after the reboot. Performance mode can be re-enabled after the reboot has completed.

SAP ASE Issues

No Fine Grained Progress Monitoring

Fine grained progress monitoring of linking and validated sync operations is not supported. Progress can be determined by manually inspecting the log file of the ASE Backup Server process used for the link and validated sync operations.

Must Disable "net password encryption reqd"

The ASE "net password encryption reqd" `sp_configure` option must be disabled.

Point in time provisioning on ASE 12.5 is not supported

For Sybase ASE 12.5, point in time provisioning is not supported in version 4.1.3.x and 4.1.4.x.

Oracle 12c Pluggable Database Issues

When using an Oracle 12c pluggable database (PDB) with your Delphix Engine, the following features do not work as expected:

- Virtual-to-Physical (V2P) functionality is not supported for PDBs.
- Pre-provisioning is not supported for PDBs.
- Virtual PDB migration to a different single container database (CDB) is not supported.
- Linking PDBs in physical standby or Active Data Guard CDBs is not supported.
- PDB source attach is not supported.
- The initial SnapSync for a PDB is not resumable.
- Provisioning a PDB Data Source linked from a RAC CDB to a non-RAC CDB is not supported.

Cross-Platform Provisioning Issues

Source Validation First

The Data Source / VDB validation has to run on the source first. Otherwise, you can replica provision a same-platform VDB from the source and run cross platform validation against that.

Unsupported Oracle Features

The **Oracle Label Security** and **Database Vault** features will cause cross-platform provisioning to fail.

VDB Refresh Takes a Long Time

The time taken to refresh a cross-platform provisioned VDB is similar to the time taken for cross-platform provisioning. This is because the refresh process re-provisions the VDB, including much of the cross-platform

provisioning logic. We are investigating how to improve this in a future release.

Application Data for Windows Issues (Unstructured File Virtualization)

Toolkits and Hook Operations Not Yet Supported

Application Data for Windows only supports unstructured file virtualization. Additional Application Data features on UNIX platforms, such as hook operations on vFiles and toolkits, will be supported on Windows in a future release.

Release 4.2 - 4.2.x.x Known Issues and Changes

These are the known issues and workarounds for Delphix Engine release 4.2 - 4.2.x.x

- [Release 4.2.0.2 Changes](#)
 - [Management Server Fixes](#)
 - [DelphixOS Fixes](#)
- [Release 4.2.0.1 Changes](#)
 - [Management Server Fixes](#)
 - [DelphixOS Fixes](#)
- [Release 4.2.0.0 Changes](#)
- [Release 4.2 Known Issues](#)
 - [SAP ASE Issues](#)
 - [Oracle 12c Pluggable Database Issues](#)
 - [Cross-Platform Provisioning Issues](#)
 - [Unsupported Oracle Features](#)

Release 4.2.0.2 Changes

Management Server Fixes

Bug Number	Description
DLPX-35669	ASE GUI does not set loadBackupServerName when Remote Backup Server selected
DLPX-35856	Crash dump due to lack of a schema for job target OracleExportDO
DLPX-35867	Parent jobs mark finished before children on stack startup
DLPX-35938	mds upgrade scripts for 4.2.0.1
DLPX-35649	Interim solution for bug DLPX-30538 Check for Oracle bug 13075226 fails on 11.2.0.3 with patch installed
DLPX-35711	Adding more than one hook operation template is slow and the templates window doesn't update
DLPX-35709	Sorting hook operation templates leads to hung gui
DLPX-35758	Unable to add MSSql Clustered VDB as data source to a Template
DLPX-35954	VDB refresh policy can't be set at the group level
DLPX-35787	retention deletes livesource resync timeflow

DLPX-35979	Windows Create vFiles wizard does not allow PowerShell scripts for Hooks
DLPX-35871	Provision against LS snapshot which has read only datafiles failed
DLPX-35710	Source.name should be a required field when adding a live source
DLPX-35757	Cluster VDBs failing on vDTully30s and 32s when lower numeric Node is owner of the SQL instance
DLPX-35885	MSSQL initial load failing, QueryRestorePercentComplete stops running
DLPX-35953	VPDB Migration GUI is all Black

DelphixOS Fixes

DLPX-35826	vioif mtu cannot be set to values other than 1500
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Release 4.2.0.1 Changes

Management Server Fixes

Bug Number	Description
DLPX-35522	Client could do a better job of checking version number
DLPX-35549	Windows AppData Replication tests fail with 'Cannot untar tar file'
DLPX-35557	unexpected manufacturer value in smbios causes boot to hang in RHEL KVM
DLPX-35560	IllegalArgumentException refreshing a transformed VDB
DLPX-35561	flex doesn't show up after rebuild delphix engine with localized properties files
DLPX-35562	MSSQL cluster VDB provision/export must change disk signature on non-cluster host
DLPX-35564	test_data_container_disable_enable fails Create Jet Stream data container for Appdata on Windows

DLPX-35565	java.lang.StringIndexOutOfBoundsException: String index out of range: -1 when adding live source to dsources with altered log_archive_config
DLPX-35566	Navbar and actions sidebar are broken after page navigation
DLPX-35589	Migrate VPDB from RAC to RAC failed with exception.db.genericvdb.disabled
DLPX-35614	Linking hooks for AppData windows cannot be saved
DLPX-35616	Intermittent failed to unmount error on windows
DLPX-35631	Intermittent failed to unmount error on windows
DLPX-35680	MDS upgrade to 4.2 fails with NPE due to missing aseVirtualSource.operations
DLPX-35703	addLiveSource fails with NPE
DLPX-35731	Show the template name on the back of the VDB card with a pencil for edit
DLPX-35738	Snapsync fails with internal error when offline tablespace is made online
DLPX-35750	User exception in the environment monitor check when VDB is on a clustered SQL instance
DLPX-35751	Querying iSCSI LU number should take iSCSI view into account for MSSQL cluster VDBs
DLPX-35752	MSSQL cluster VDB provision/export must change disk signature on non-cluster host
DLPX-35753	Provisioning clustered VDBs fail if provisioned with LogSync
DLPX-35760	Validated sync failing with mount errors in hpuxrac5
DLPX-35761	Horizontal scroll bar on back of vFiles card when viewing hook scripts
DLPX-35762	Hook operations gui for empty vfiles should not have before and after refresh hooks

DLPX-35763	AppData linking wizard summary screen has scrollbars with a long 'path to exclude'
DLPX-35780	ASE: Temporary VDB used by V2P is left around after V2P completed
DLPX-35784	mssql pre-provisioning trying to open backup files in write mode
DLPX-35810	Jet stream bookmark usage data doesn't work as expect
DLPX-35811	StorageUtilTest#getSnapshotCapacityBucketsPolicyOr Manual failed
DLPX-35823	Offline datafiles error message should use AFN not name
DLPX-35824	Limit file printing to one per line in the datafile info message during snapsync
DLPX-35829	genericcontainer.cannot.remove.only.snapshot thrown by retention
DLPX-35832	Cannot manually delete snapshot after VDB refresh
DLPX-35842	Oracle provision wizard hook operations have null view model
DLPX-35848	MSSql provisioning with LogSync creates VDB with recovery model of FULL
DLPX-35853	mds upgrade scripts for 4.2.0.0
DLPX-35863	MSSQL Recovery model not set during V2P
DLPX-35880	The Timezone for MSSql VDBs is displayed twice on the card

DelphixOS Fixes

Bug Number	Description
DLPX-35797	disable hole filling

Release 4.2.0.0 Changes

- ASE support has been expanded to include ASE 12.5 on RHEL 5.x as well as full support for Solaris 10 machines backed by both the x86 and SPARC processor architectures. See [Supported Operating Systems](#)

[and Database Versions for SAP ASE](#) for more details.

- The live job view has been replaced by the Action sidebar which more clearly presents complex jobs and actions and has a modern visual style.
- The Delphix Engine can be configured to push audit events to an external system via syslog.
- MSSQL databases can be linked without the use of purpose built third-party backup software by taking copy-only full backups on a pre-defined schedule. See [Supported Operating Systems, Server Versions, and Backup Software for SQL Server](#) for more information.
- Additional diagnostics are automatically performed for common connectivity errors. See [Diagnosing Connectivity Errors](#) for more information.
- Read performance of frequently accessed blocks on systems with many vCPUs and write performance to fragmented pools have been improved.
- Storage devices used by the Delphix Engine can now be removed. See [Delphix Storage Migration](#) for more information.
- The replication UI has been redesigned in javascript/html for an improved user experience. See [Replication User Interface](#) for more information.
- A tool for measuring the performance of the storage devices provided to the Delphix Engine has been added to the CLI. See [Storage Performance Tool](#) for more information.
- A new screen has been added which displays the space usage of Jet Stream templates, users, containers, bookmarks, and branches. See [Understanding Jet Stream Usage](#) for more information.
- Support for running the Delphix Engine in private OpenStack clouds on the KVM hypervisor as well as in the AWS GovCloud security zone is new in Delphix Engine 4.2. All existing Delphix workflows are supported in both of these new environments.
- MSSQL VDBs can now be provisioned to SQL Server Failover Cluster instances. SQL Server Failover Cluster instances are automatically discovered when adding a Windows Failover Cluster target environment as described in [Adding a SQL Server Failover Cluster Target Environment](#). See [Provisioning a SQL Server VDB](#) for additional information.
- A "resetlogs" operation on an Oracle source database (commonly caused by standby failover, database PITR, flashback database) will automatically trigger a full resync during the next SnapSync.
- Replication jobs can be resumed after certain failures without retransmitting data that was successfully transferred.
- Oracle V2P jobs can be suspended and resumed without retransmitting data.
- A new feature has been added to the CLI for showing and fetching missing logs on a timeflow. See [TimeFlow Patching](#) for more information.
- The ability to ignore persistent diagnostic faults and to mark all active faults as resolved has been added. See [System Faults](#) for more information.
- VDB refresh and rewind operations can now be undone.
- The queries run against source databases by Oracle LogSync have been made more efficient and buffered writing has been added to improve LogSync's write performance.
- EBS support has been expanded to include EBS 12.2 and EBS 11i.
- The historical capacity data API has been augmented to allow obtaining capacity data at arbitrary intervals.
- Database config templates can be associated with a repository and a container such that any time the data in the container is deployed on the associated repository we fall back on the config template if no template has

been explicitly specified. This feature can be used to enable Oracle validated sync on a staging environment that is under-equipped relative to its source. See [Provisioning Oracle VDBs: An Overview#RepositoryTemplates](#) for more information.

Release 4.2 Known Issues

SAP ASE Issues

You may encounter issues with your ASE instances in the following cases:

- ASE instances use case insensitive sort orders and file names are not specified/preserved in a case-preserving way.
- ASE instances have multiple listeners and not all listeners can be used by the Delphix Engine.

Oracle 12c Pluggable Database Issues

When using an Oracle 12c pluggable database (PDB) with your Delphix Engine, the following features do not work as expected:

- Virtual-to-Physical (V2P) functionality is not supported for PDBs.
- Pre-provisioning is not supported for PDBs.
- PDB source attach is not supported.
- The initial SnapSync for a PDB is not resumable.
- Provisioning a PDB Data Source linked from a RAC CDB to a non-RAC CDB is not supported.
- Linking and provisioning an entire CDB is not supported
- Provisioning a PDB into a virtual CDB is not supported
- XPP for multi-tenant databases is not supported

Cross-Platform Provisioning Issues

Unsupported Oracle Features

The **Database Vault** feature will cause cross-platform provisioning to fail.