



# **Delphix Engine 4.3**

**Release Notes**

**October, 2015**

Delphix Engine 4.2 Pre-Install User Guide

You can find the most up-to-date technical documentation at:

[docs.delphix.com](https://docs.delphix.com) The Delphix Web site also provides the latest product updates.

If you have comments about this documentation, submit your feedback to: [infodev@delphix.com](mailto:infodev@delphix.com)

© 2015 Delphix Corp. All rights reserved.

Delphix and the Delphix logo and design are registered trademarks or trademarks of Delphix Corp. in the United States and/or other jurisdictions.

All other marks and names mentioned herein may be trademarks of their respective companies.

Delphix Corp.

275 Middlefield Road, Suite 50

Menlo Park, CA 94025

1. _Release .....	4
1.1 What's New for Delphix Engine .....	5
1.2 Release Notes .....	7
1.2.1 Release 3.1 - 3.1.x.x Known Issues and Changes .....	13
1.2.2 Release 3.2 - 3.2.x.x Known Issues and Changes .....	18
1.2.3 Release 4.0 - 4.0.x.x Known Issues and Changes .....	27
1.2.4 Release 4.1 - 4.1.x.x Known Issues and Changes .....	35
1.2.5 Release 4.2 - 4.2.x.x Known Issues and Changes .....	46
1.2.6 Release 4.3 - 4.3.x.x Known Issues and Changes .....	58

\_Release

# What's New for Delphix Engine

The Delphix Engine 4.3 provides a bounty of features, bug fixes, and performance improvements.

- **MySQL**
- **Delphix Express**
- **Jet Stream EBS Ordered Sources**
- **Restoration Datasets for EBS**
- **iSCSI CHAP**
- **DSP over SOCKS Proxy**
- **Expanded Sources**
- **Expanded Platforms/Clouds/Hypervisors**
- **Technical Improvements**

## MySQL

Delphix now supports MySQL as a data platform. Any customers or prospects with data in MySQL relational databases can now expand their use of Delphix. Our updates cover MySQL DBMS versions 5.5, 5.6, and 5.7 and is available for InnoDB, the most popular storage engine. To find additional information about MySQL, see **MySQL** to get started.

## Delphix Express

Delphix express is a free version of Delphix available to individuals and small team applications after registering on <http://community.delphix.com>. For additional information about Delphix Express, go to the **Delphix Express Quick Start Guide**.

## Jet Stream EBS Ordered Sources

In the 4.3 Release, customers can provision an instance of Oracle EBS in a single Jet Stream data container. Delphix will allow users to specify the order of operations in which an entire application will be provisioned. To find additional information Jet Stream Ordered Sources, see **Ordered Sources**.

## Restoration Datasets for EBS

In the 4.3 Release, users can now recover unmutated copies of data for restoration and backup on Oracle EBS in addition to provisioning data into non-prod environments. To find additional information about Restoration Datasets for EBS, see **Restoration Datasets**.

## iSCSI CHAP

CHAP authentication will allow secure iSCSI connections, which will eliminate the possibility of unauthorized connections. CHAP can be used by all Windows customers to secure iSCSI connections for windows clients. For more information, see **iSCSI Configuration**.

## DSP over SOCKS Proxy

DSP integration with SOCKS leaves the firewall in control of applications and provides a clean connection across a firewall for data transfer. For more information, refer to **Configuring Network in Replication**.

## Expanded Sources

- Delphix will now support **SAP ASE on the AIX operating platform**. Customers using ASE on AIX can now integrate Delphix with this platform.
- Delphix will fully support **SAP ASE Version 16** with this update
- Delphix now supports **PostgreSQL 9.3** on OSes.
- Delphix now supports **PostgreSQL 9.4** on OSes.

## Expanded Platforms/Clouds/Hypervisors

- Delphix now provides support for the **AWS GovCloud** region. Delphix has modified and built our own release process that can now be deployed in the AWS GovCloud infrastructure.

## Technical Improvements

- The masking engine is integrated into one OVA. We recommend Delphix and Masking in separate VMs even though they are shipped together.
- Users can customize the **redo log size** while provisioning a VDB and disabling the archive log mode. This will improve VDB provision time and runtime performance.

# Release Notes

Welcome to the 4.3 release of the Delphix Engine database virtualization system.

- **4.3 Upgrade Matrix**
- **Tested Browser Configuration Matrix**
- **Supported Oracle DBMS Versions and Operating Systems for Source and Target Environments**
  - **Supported DBMS Versions**
  - **Supported Operating Systems**
- **Supported SQL Server Versions, Operating Systems, and Backup Software**
  - **Supported Versions of Windows OS**
  - **Supported Versions of SQL Server**
  - **Supported SQL Server Backup Software**
- **Supported PostgreSQL Versions and Operating Systems**
  - **Supported DBMS Versions**
  - **Supported Operating Systems**
- **Supported SAP ASE Versions and Operating Systems**
- **Licenses and Notices**

## 4.3 Upgrade Matrix

Upgrades to Delphix Engine 4.3 are supported from 4.1.0.0 and above.

	4.3.0.0	4.3.0.1	4.3.0.2	4.3.0.3	4.3.1.0	4.3.2.0
4.0 and prior						
4.1 - 4.2						
4.3.0.0						
4.3.0.1						
4.3.0.2						
4.3.0.3						
4.3.1.0						

**Key:**

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

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	Firefox, Chrome	10.x	4GB
Windows Vista SP2	Internet Explorer 9.x	10.x	4GB

Windows 7	Internet Explorer 9.x, 10.x, 11.x	10.x	4GB
Windows 7	Firefox, Chrome	10.x	4GB
Windows 7 x64	Internet Explorer 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

## 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.

Delphix features supported with Oracle 9.2.0.8:

	dSource	VDB
SnapSync	Yes	No
LogSync	No	No
Rewind	Not Applicable	No
V2P (virtual to physical)	Yes	No
RAC	No	No
Standby Database	No	No

### 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**.

For Windows 2008 R2

Updates NTFS.sys and uNTFS.dll

KB Article Number(s): [967351](#)

Language: All (Global)

Platform: x64

Location: ([http://hotfixv4.microsoft.com/Windows%207/Windows%20Server2008%20R2%20SP1/sp2/Fix385766/7600/free/44135\\_1\\_intl\\_x64\\_zip.exe](http://hotfixv4.microsoft.com/Windows%207/Windows%20Server2008%20R2%20SP1/sp2/Fix385766/7600/free/44135_1_intl_x64_zip.exe))

Updates MSISCI.sys

KB Article Number(s): [2277122](#)

Language: All (Global)

Platform: x64

Location: ([http://hotfixv4.microsoft.com/Windows%207/Windows%20Server2008%20R2%20SP1/sp2/Fix388733/7600/free/44067\\_5\\_intl\\_x64\\_zip.exe](http://hotfixv4.microsoft.com/Windows%207/Windows%20Server2008%20R2%20SP1/sp2/Fix388733/7600/free/44067_5_intl_x64_zip.exe))

For Windows 2008 SP2

<https://support.microsoft.com/en-us/kb/948275/>

Ntfs.sys and untfs.dll for windows server 2008 SP2

In order to install NTFS.sys first go to c:\windows\system32\drivers, right click on ntfs.sys à go to properties and check the tab details à In the details Tab check the file Version if the file version is less than "6.0.6002.22811" the one mentioned here

In order to install uNTFS.dll first go to c:\windows\system32, right click on untfs.dll à go to properties and check the tab details à In the details Tab check the file Version if the file version is less than "6.0.6002.22811" the one mentioned here

Run the below mentioned commands.

Package: NTFS.sys and uNTFS.dll

-----  
-----

KB Article Number(s): 967351

Language: All (Global)

Platform: x64

Location: ([http://hotfixv4.microsoft.com/Windows%20Vista/sp3/Fix385798/6000/free/441782\\_intl\\_x64\\_zip.exe](http://hotfixv4.microsoft.com/Windows%20Vista/sp3/Fix385798/6000/free/441782_intl_x64_zip.exe))

- Ø Download the file mentioned in the above link
- Ø Save the file in a folder named 'TEST' under C drive.
- Ø Extract the zipped file.
- Ø Run the below mentioned command.

Expand -f:\* c:\TEST\ (write the complete details of the file with extension .msu).msu c:\TEST

Expand -f:\* c:\TEST\ (write the complete details of the file with extension .cab).cab c:\TEST

pkgmgr /ip /m:c:\Test\update-bf.mum

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

Delphix supports SQL Server AlwaysOn Availability Groups as a dSource but creation of a VDB on AlwaysOn Availability Groups is not supported. Delphix supports Windows Server Failover Cluster (WSFC) as a dSource and also as a target (VDB).

## 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, 9.3, 9.4	x86_64
EnterpriseDB Postgres Plus Advanced Server	9.2, 9.3, 9.4	x86_64

## Supported Operating Systems

<b>Operating System</b>	<b>Version</b>	<b>Processor Family</b>
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**

### **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

- **Release 3.1.3.0 Changes**
  - **Bug Fixes**
  - **Upgrading to Release 3.1.3.0**
- **Release 3.1 Known Issues**
  - **Installation and Configuration Issues**
    - **Don't Change the Time Zone of the Delphix Engine**
      - **Solution**
    - **Host Checker Script Requirements**
    - **Linux Systems: Shared Memory Size and SGA\_TARGET**
      - **Solution**
    - **HP-UX Systems: Cannot locate db Instances in a Custom SQL\*Net Configuration**
      - **Solution**
    - **Delphix Engine Must be an Invited Node**
      - **Workaround**
  - **Archive Log Issues**
    - **Failure in Fetching Missing Archive Logs**
      - **Solution**
    - **Best Practice for Fetching Archive Logs**
    - **Online Redo Logs on Raw Devices**
  - **VDB and dSource Issues**
    - **Sample Schemas on Oracle 11.2 (11.2.0.1)**
      - **Workaround**
    - **Ulimits for the Linking or Provisioning User**
    - **Take New Snapshots after Changing Database Configuration Parameters**
    - **A Full Audit Directory Causes VDB Provisioning to Fail**
  - **Standby Database Support**
    - **Provisioning Can Fail if the `_fix_control` Parameter is Set in the Primary**
  - **Known issues in SQL Server Support**
    - **Source database upgrades**
    - **Provisioning to a higher SQL Server version if the source is SQL Server 2005**
    - **SQL Server 2005 databases with Full Text Catalogs**
    - **Running the manual recovery script after V2P**

### 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 <code>validate_host.sh</code> 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_useccwait(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. 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 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**
  - Bug Fixes
  - Upgrading to Release 3.2.7.0
  - Upgrading MS SQL Server dSources
  - Upgrading with Replication
- **Release 3.2.6.0 Changes**
  - Bug Fixes
- **Release 3.2.5.1 Changes**
  - Bug Fixes
- **Release 3.2.5.0 Changes**
  - Bug Fixes
- **Release 3.2.4.2 Changes**
  - Bug Fixes
- **Release 3.2.4.1 Changes**
  - Bug Fixes
- **Release 3.2.4.0 Changes**
  - Bug Fixes
- **Release 3.2.3.1 Changes**
  - Bug Fixes
- **Release 3.2.3.0 Changes**
- **Release 3.2.2.1 Changes**
  - Bug Fixes
- **Release 3.2.2.0 Changes**
  - Bug Fixes
- **Release 3.2.1.0 Changes**
  - Bug Fixes
- **Release 3.2.0.0 Changes**
- **Release 3.2 Known Issues**
  - **Installation and Configuration Issues**
    - **Don't Change the Time Zone of the Delphix Engine**
      - Workaround
    - **Host Checker Script Requirements**
    - **Linux Systems: Shared Memory Size and SGA\_TARGET**
      - Solution
    - **HP-UX Systems: Cannot locate db Instances in a Custom SQL\*Net Configuration**
      - Solution
    - **Delphix Engine Must be an Invited Node**
      - Workaround
  - **Archive Log Issues**
    - **Failure in Fetching Missing Archive Logs**
      - Solution
    - **Best Practice for Fetching Archive Logs**
    - **Online Redo Logs on Raw Devices**
  - **VDB and dSource Issues**
    - **Sample Schemas on Oracle 11.2 (11.2.0.1)**
      - Workaround
    - **Ulimits for the Linking or Provisioning User**
    - **Take New Snapshots after Changing Database Configuration Parameters**
    - **A Full Audit Directory Causes VDB Provisioning to Fail**
    - **Standby Database Support**
    - **Provisioning Can Fail if the `_fix_control` Parameter is Set in the Primary**
  - **Known issues in SQL Server Support**
    - **Source database upgrades**
    - **Provisioning to a higher SQL Server version if the source is SQL Server 2005**
    - **SQL Server 2005 databases with Full Text Catalogs**

- **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 fault.policy.log.retention.old.snapshot
29156	Fixed a problem where you would get exception.oracle.dbc.query.failed during SnapSync if v\$rman_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**
  - **Bug Fixes**
- **Release 4.0.0.1 Changes**
  - **Bug Fixes**
- **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 <a href="#">technical bulletin</a> )
35554	ASM source datafiles can be deleted when provisioning a VDB back to a source environment (see <a href="#">technical bulletin</a> )
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 ( <b>security advisory</b> )

## 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**
- **Release 4.1.3.2 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.1.3.1 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.1.3.0 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.1.2.0 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.1.1.0 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.1.0.0 Changes**
- **Release 4.1 Known Issues**
  - **Rebooting**
    - **Must Disable Performance Mode Before Rebooting**
  - **SAP ASE Issues**
    - **No Fine Grained Progress Monitoring**
    - **Must Disable "net password encryption reqd"**
    - **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 OracleTargetscriptsExceptions, 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 dlpx_pfexec

### 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 syncing 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.plugin
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 **Network Performance Tool (iPerf)** 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 4.2.4.1 Changes**
  - **Management Server Fixes**
- **Release 4.2.4.0 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.2.3.1 Changes**
  - **Management Server Fixes**
- **Release 4.2.3.0 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.2.2.1 Changes**
  - **Management Server Fixes**
- **Release 4.2.2.0 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.2.1.1 Changes**
  - **Management Server Fixes**
- **Release 4.2.1.0 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.2.0.3 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **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**
  - **Benign Faults on Oracle Cluster Homes**
  - **SAP ASE Issues**
  - **Oracle 12c Pluggable Database Issues**
  - **Cross-Platform Provisioning Issues**
    - **Unsupported Oracle Features**
  - **Unstructured Files and Oracle Enterprise Business Suite**

### Release 4.2.4.1 Changes

#### Management Server Fixes

Bug Number	Description
DLPX-38775	NPM is left on following validated sync
DLPX-38774	dsources should be taken out of performance mode on upgrade
DLPX-38773	It should not be possible to enable PerformanceMode on dSources

### Release 4.2.4.0 Changes

#### Management Server Fixes

Bug Number	Description
DLPX-38490	Setting 'Data Operator' and 'Reader' privileges via GUI fails after upgrade
DLPX-38462	doesInitiatorExist does not check for null IQNs
DLPX-38442	MSSQL iSCSI view gets deleted on export
DLPX-38408	GUI - new user privileges dropdown menu can be glitchy on Chrome and IE
DLPX-38407	Consider renaming the new 'Refresher' user privilege
DLPX-38406	GUI - AppData vFiles with 'Reader' privileges still has a 'snapshot' button
DLPX-38405	Cannot refresh VDB with 'refresher' privileges via GUI
DLPX-38387	VDB provision to Oracle 9.2.0.8 standard edition fails with ORA-00439
DLPX-38386	Unable to add dSource due to ORA-00604 and ORA-01882
DLPX-38356	Serialization state manager must be stated before reaper
DLPX-38272	DE upgrade removes pam.conf needed for Challenge/Response feature
DLPX-38243	Create GUI for new data and read only user roles
DLPX-38235	Add data and read only user roles
DLPX-38195	MDB ::arc_compression_stats hangs in support bundle generation
DLPX-38137	Bump API version to 1.5.3 for 4.2.4 after exposing device removal
DLPX-37875	expose device removal APIs
DLPX-37864	Include IOPS, MBPS along with avg/min/max/stdev latency in test results
DLPX-37845	mds upgrade scripts for 4.2.2.1 & 4.2.3.0
DLPX-37831	inconsistent replication stats after job is resumed
DLPX-37768	reporting warning 4.2.2.0 --SSH configuration file '/export/home/delphix' is group readable.
DLPX-37698	ORA-39165 during schema export due to username with special character
DLPX-37676	Need to explicitly set the CHARSET for ASE JDBC connections
DLPX-37675	Support RESTRICT_IP tunable for ASE
DLPX-37637	Installer might get stuck without error log instead of running the silent installer
DLPX-37548	additionalMountPoints does not mount to additional environments
DLPX-37517	Oracle 12c does not work with connection information
DLPX-37492	snapshot controlfile on non-ASM shared location is still failing
DLPX-37465	windows connector cannot be installed on hosts that do not have mssql installed
DLPX-37371	synchronize ebs adpreclone database and dbtechstack on same host
DLPX-37135	java.lang.AssertionError: unexpected executor context in job
DLPX-37073	enable device removal apis for 4.2

## DelphixOS Fixes

Bug Number	Description
DLPX-38193	panic with null pointer from sys_tick()
DLPX-37766	nlockmgr failing to start after reboot leads to environment failures

## Release 4.2.3.1 Changes

### Management Server Fixes

Bug Number	Description
DLPX-38031	Add new logos for Delphix Express

## Release 4.2.3.0 Changes

### Management Server Fixes

Bug Number	Description
DLPX-37687	dx_install_archive: rpool is not a valid ZFS pool
DLPX-37667	java.lang.OutOfMemoryError: unable to create new native thread
DLPX-37595	upgrade job completes before reboot
DLPX-37499	Null pointer error when viewing admin app due to free version check
DLPX-37458	host based clients stuck upon session reset
DLPX-37422	Delphix Express
DLPX-37420	DUE exception handling for SnapSync jobs
DLPX-37414	mds upgrade scripts for 4.2.2.0
DLPX-37412	Consider switching capacity pages to have a refresh button
DLPX-37411	The maximum number of entries in the pie graph on usage overview page should be 10
DLPX-37382	EBS adpreclone script exits 0 even during failure
DLPX-37378	[IE-11] drop-down menu for owner on container creation page is not visible
DLPX-37376	Make the toolkit size available check more sophisticated
DLPX-37375	Extend the oracle home detection improvements to the Oratab check
DLPX-37374	Oracle DB Instance check should only run for Oracle Sources
DLPX-37373	Explicit timeouts for EBS stop scripts
DLPX-37372	EBS 12.2 appsTier snapsync should fail if server is down
DLPX-37307	V2P Recovery should ignore RMAN-07518 warnings
DLPX-37306	native OOM issues not surfaced by libumem
DLPX-37302	API to map REFRESH, RESTORE, RESET operation to the time for the previous snapshot
DLPX-37300	Jet Stream UI needs to use new API to get time for last tickmark prior to REFRESH, RESET, RESTORE
DLPX-37282	Handle symlinks in toolkit check
DLPX-37279	Spurious fault.policy.log.retention.old.snapshot faults possible
DLPX-37277	"Unable to purge logs" occurs even when dSource is unlinked/disabled
DLPX-37256	test_usage_bookmark_externally_referenced_container failed in dvc regression on 4.2.3.0
DLPX-37251	Allow non-standard homes in 12.1 and 11i appsTier provisioning
DLPX-37230	SerializationStateManager is not syncing manifest on receive
DLPX-37205	After upgrading to 4.2.1.1 VDB configuration template parameters do not display during provisioning



DLPX-37201	Cannot increase Oracle V2P file concurrency to more than 10
DLPX-37196	EBS DB_SYNC fails if Apache not installed on DB Tier
DLPX-37195	enable zpool features on upgrade
DLPX-37193	After upgrade to 4.2 stack doesn't start up because a fault has no message associated with it
DLPX-37181	Large number of phonehome timeouts cannot be cleared
DLPX-37152	PGSQL_INSTALL already exists
DLPX-37151	Better reporting of parsing failures when linking postgresql database
DLPX-37150	pgsql host checker for versions 9.3 and 9.4
DLPX-37147	invalid credentials fault broken
DLPX-37146	`sunrpc.tcp_slot_table check` should only run on target machines
DLPX-37145	Better separation of "source" checks and "target" checks
DLPX-37085	DSP: illegal transition from FREE to ZOMBIE
DLPX-37078	configuration service leaks file descriptor
DLPX-37053	Prevent null timezones in dlp_x_policy
DLPX-37042	Basic support for postgresql 9.3 and 9.4
DLPX-36883	Oracle provision scripts affected adversely by customer turning SET TIMING ON in their SQLPLUS init file
DLPX-36869	No Postgres installation found when provisioning
DLPX-36850	Fix version command in CLI to be synchronous
DLPX-36780	Translator for configTemplate and configParam conflict
DLPX-36774	callout export sometimes fails if user tablespaces are readonly
DLPX-36743	VDB provision takes long time in doRenameDatafiles, dSource has ASM datafiles, target host does not have ASM
DLPX-36660	12c OJDBCAccessorImpl#getConId() needs sanity check before return zero con_id
DLPX-36632	ASE support for AIX
DLPX-36521	Continued WARNING alerts: "Command exited with a non-zero status"
DLPX-36441	upgrade tests fail due to missing chap secret
DLPX-36299	Dropping VDB with cross references fails
DLPX-36298	NPE in cloneNewTimeflow() during SnapSync
DLPX-36164	iscsicli doesn't parse ASCII correctly
DLPX-36001	Oracle Validated Sync fails with ORA-01157 during post provision query
DLPX-35932	iSCSI CHAP
DLPX-35892	Live Source Gear stuck in waiting after it is created
DLPX-32667	Policy enforcement runs and alerts on disabled VDBs

## DelphixOS Fixes

Bug Number	Description
DLPX-37443	ZFS "hangs" while deleting file
DLPX-37430	native heap OOM issues don't cause core dumps

## Release 4.2.2.1 Changes

### Management Server Fixes

Bug Number	Description
DLPX-37083	Alert for permissions on CRS home
DLPX-37254	Instance listed in oratab file is not running fault should be removed
DLPX-36921	UEM raising faults for permissions on CRS home for single instances
DLPX-37506	add instrumentation to help root-cause DLPX-37365

## Release 4.2.2.0 Changes

### Management Server Fixes

Bug Number	Description
DLPX-36658	VDBs not re-enabled if environment fails to refresh
DLPX-37040	Upgrade action is shown as cancelable in action panel
DLPX-37032	Latency values not showing up on Performance Analytics page
DLPX-37025	deferred os upgrade with OsTooOld due to faulty comparison
DLPX-36944	Run V020140710__fhloston_pre_post_scripts_windows_appdata upgrade script conditionally
DLPX-36896	MSSqlJDBCConnectionUtil cannot connect to master for case sensitive collations
DLPX-36894	IllegalStateException: Property value null is not a known schema type
DLPX-36873	Oracle log link worker does not properly end contexts
DLPX-36867	NPE(s) after upgrade to 4.2.1.1 preventing Faults from being shown in GUI
DLPX-36781	Continued WARNING alerts: "Command exited with a non-zero status"
DLPX-36768	NPE in MSSqlPreProvisioningWorker#raiseFault
DLPX-36723	Do not send emails about ignored faults
DLPX-36721	4.2.1.1failed in fhloston_migrate_serialization_state.java:168 on a replication source
DLPX-36715	DFE deserializing Oracle source on bundle upgrade
DLPX-36714	intactfinancial upgrade to 4.2.1.1 failed in flyway script execution
DLPX-36699	cli and backend disagree on source.operations.configureClone type
DLPX-36685	NPE in FaultManagerImpl.java on bundle upgrade
DLPX-36682	MongoDB should be restarted periodically to prevent it from consuming too much memory
DLPX-36671	ssh_config requirements not listed in 4.2 documentation
DLPX-36659	MongoDB timeout window too short sometimes
DLPX-36656	source.host.mismatch exception upgrading Ontario Teachers bundle
DLPX-36616	IllegalStateException: pending sync action in unexpected state
DLPX-36592	NPE upgrading clorox support bundle to 4.2.2.0
DLPX-36571	migration_list for 4.2.1.1

DLPX-36569	After upgrading to 4.2.1.0 debug log files roll over in 3 hours due to logging MDS queries
DLPX-36545	Source Continuity creates unnecessary source-archive file system on zfs
DLPX-36524	After upgrading to 4.2.1.0 debug log files roll over in 3 hours due to logging MDS queries
DLPX-36488	Oracle V2P should support configuration of underlying DSP config options
DLPX-36483	Support ASE 16
DLPX-36429	Eliminate wildcard imports from our codebase
DLPX-36418	If host IP address exists in duplicate environments (RAC and standalone), disable of one prevents refresh of other
DLPX-36413	Dropping VDB with cross references fails
DLPX-36407	mds upgrade scripts for 4.2.1.0
DLPX-36403	The UI shows that a JS bookmark's data has been cleaned up by retention
DLPX-36352	EBS 12.2 toolkit *determine-run-edition.sh does not work properly on Solaris
DLPX-36337	Remove setInterval() calls
DLPX-36300	dSource card layout allows drawing confirmation buttons out of visible area
DLPX-36287	Clean-up and optimize old storage container stats capacity code
DLPX-36281	NPE in test_validate_xpp_with_invalid_timeflow_point
DLPX-36279	AppData staging should not allow you to choose an incompatible staging environment
DLPX-36277	Windows Appdata staging dsource card contents don't fit within box
DLPX-36247	Fix text strings in live source ui-part 2
DLPX-36190	No compatible Oracle Installation Home from Provision VDB
DLPX-36182	VDB Refresh doesn't honor "Open Database After Provision" selection
DLPX-36128	hostchecker.sh does not extract and use bundled jdk when it should
DLPX-36108	Oracle 12c - PdbPlug and PdbOpen exception handling made wrong assumption, causing incomplete clean up after provision failure
DLPX-36079	stack on upgraded replication target does not come up after vm is unregistered and reregistered
DLPX-36021	Add PowerShell test toolkit
DLPX-35992	Navigation in Jet stream is broken with non en-US locale
DLPX-35985	XPP needs to handle 12c APEX user
DLPX-35983	NPE in MSSqlPreProvisioningWorker.java
DLPX-35935	Fix text strings in live source ui
DLPX-35934	Pages scroll bar only displays up to the first 4 pages when dSource is selected
DLPX-35933	Long MSSql LSNs create scroll bar on dSource and VDB snapshots
DLPX-35705	add compression statistics to support bundle
DLPX-35638	vdb rewind fails during recovery
DLPX-35559	i18n for flex, action and schema encoding
DLPX-35524	Time selector flyouts sometimes show when clicking timeline
DLPX-34562	startLiveSourceResync hang against multiple Live Source almost at the same time
DLPX-34557	Consolidate Windows mounting and unmounting
DLPX-34518	Live Source Validation Logic

DLPX-32668	SMTP Auth can not be successfully disabled once enabled
DLPX-35883	Add ':: <kmostat' bundle<="" support="" td="" to=""> </kmostat'>

## DelphixOS Fixes

Bug Number	Description
DLPX-36529	kmem reap thread gets blocked in reclaim callback
DLPX-35303	track arc buf compressed size
DLPX-36416	NULL pointer dereference when activating a partially added metaslab
DLPX-36511	verify failed in zio_done(): BP_EQUAL(bp, io_bp_orig)
DLPX-36189	add tunables to combat scheduling delay of kernel threads

## Release 4.2.1.1 Changes

### Management Server Fixes

Bug Number	Description
DLPX-36535	HOST references remain in MDS after upgrade to 4.2

## Release 4.2.1.0 Changes

### Management Server Fixes

Bug Number	Description
DLPX-36355	Engine becomes slow after storage migration and removing device from ESX
DLPX-36349	Upgrade migration failed, unexpected character in LinkedSourceOperations
DLPX-36348	<u>Capacity API calls get extremely slow with large number of snapshots</u>
DLPX-36347	cannot create AppData dSource using older webservice versions
DLPX-36336	Remove setInterval() calls
DLPX-36321	dx_verify subject to SMF and postgres race conditions
DLPX-36319	IllegalStateException upgrading MDS with DB_SYNC in WAITING state
DLPX-36262	mds upgrade scripts for 4.2.0.3
DLPX-36259	Trying to edit the database user for a vPDB fails with "virtual database is enabled"
DLPX-36251	Unable to update AppData Staging Mount Base from GUI
DLPX-36236	Running toolkit scripts fails on win2003
DLPX-36233	dx_upgrade should pass -v before version argument when calling dx_verify
DLPX-36227	Updating the env user for an AppData Staging dsource leads to crash
DLPX-36221	ZfsService.getAllSnapshotsSorted returns incorrect number of snapshots
DLPX-36215	Upgrade translator V020150119__fhloston_stream_state specifies manifest path incorrectly
DLPX-36214	4.1.6.0 upgrade scripts
DLPX-36196	AssertionError: object reaper service was never started

DLPX-36195	AssertionError: object reaper service was never started
DLPX-36194	clearing read-only attribute failed for disk
DLPX-36186	explicitly say no to rac in dbtechstack adcfgclone
DLPX-36173	dx_verify.sh tries to mount root even if it's already mounted
DLPX-36168	AppData toolkit mounts fail on windows
DLPX-36115	SyncDir.ps1 fails when running on Windows 2003 with robocopy error
DLPX-36098	Enable live source fails due to DFE after replication failover
DLPX-36082	"read" in dlpx_pfxexec script may not accept empty input from /dev/null, need terminating "\n"
DLPX-36071	Pause and resume of Oracle V2P during database recovery phase results in crash dump

### DelphixOS Fixes

Bug Number	Description
DLPX-36111	allocation throttled zio gets stuck behind other tasks in taskq
DLPX-36017	correct the dcenter_group for os-gate's .delphixrc file on 4.2 branch

### Release 4.2.0.3 Changes

#### Management Server Fixes

Bug Number	Description
DLPX-36165	JNA leaking CallbackReferences, leads to native memory exhaustion
DLPX-36163	<u>After VPDB Rewind always shows one snapshot</u>
DLPX-36162	Exception on start up if LiveSource present
DLPX-36135	After VPDB Rewind always shows one snapshot
DLPX-36085	Cannot import PowerShell Script operation template
DLPX-36073	mds upgrade scripts for 4.2.0.2
DLPX-36052	dx_verify fails from 4.2 to trunk due to class path errors
DLPX-36042	MDSVerify fails on DCoD due to flyway placeholders
DLPX-36018	AppData Staging dSource not showing correct environment users
DLPX-36014	Faults raised for recovered error - TLog was busy
DLPX-35963	NPE in TrileadC3ConnectionImpl.java
DLPX-35957	EBS 12.2 AppsTier vFiles sync failed
DLPX-35799	Engine restarts when clicking V2P on Windows
DLPX-35691	Switchtimeflow can't handle NULL or not ready current timeflow
DLPX-35646	Do not allow Agile Masking to be enable in 4.2.0.0

### DelphixOS Fixes

Bug Number	Description
------------	-------------

DLPX-36111	allocation throttled zio gets stuck behind other tasks in taskq
DLPX-36017	correct the dcenter_group for os-gate's .delphixrc file on 4.2 branch

## 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

Bug Number	Description
DLPX-35826	vioif mtu cannot be set to values other than 1500

## 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#getSnapshotCapacityBucketsPolicyOrManual 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 \(fio\)](#) 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

### Benign Faults on Oracle Cluster Homes

Sophisticated error detection logic has been added to the Delphix Engine to verify that Oracle homes meet the [documented criteria for linking](#). This logic may incorrectly run against Oracle Cluster homes resulting in benign faults. Faults raised against cluster homes can be programmatically ignored when they appear using the [ignore faults feature](#) introduced in 4.2.

### 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.

### **Unstructured Files and Oracle Enterprise Business Suite**

The **Additional Mount Points** feature available for Unstructured Files and Oracle Enterprise Business Suite does not work as intended on versions of the Delphix Engine between 4.2.0.0 and 4.2.4.0. On these affected version, all configured **Additional Mount Points** will mount to the primary target environment instead of the additional environments specified.

## Release 4.3 - 4.3.x.x Known Issues and Changes

These are the known issues and workarounds for Delphix Engine release 4.3 - 4.3.x.x

- **Release 4.3.2.0 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.3.1.0 Changes**
  - **Management Server Fixes**
- **Release 4.3.0.3 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.3.0.2 Changes**
  - **Management Server Fixes**
- **Release 4.3.0.1 Changes**
  - **Management Server Fixes**
  - **DelphixOS Fixes**
- **Release 4.3.0.0 Changes**
- **Release 4.3 Known Issues**
  - **SAP ASE Issues**
  - **Oracle 12c Pluggable Database Issues**
  - **Cross-Platform Provisioning Issues**
    - **Unsupported Oracle Features**
  - **Toolkit Scripts on \*nix**

### Release 4.3.2.0 Changes

#### Management Server Fixes

Bug Number	Description
DLPX-40092	ProcessExplorer does not capture cmdline arguments correctly on Solaris
DLPX-40064	NPE hit when refreshing AppData Restoration Dataset
DLPX-40032	Need to Support MySQL 5.6.26 Enterprise Commercial Version
DLPX-40031	ProcessExplorerTest should not expect a number of calls / call ordering
DLPX-40030	MySQL environment variable extraction broken on Solaris
DLPX-40004	MySQL DB_SYNC job hangs in replication stream state tests
DLPX-39957	MSSQL fix environment error handling
DLPX-39939	libiconv linker error for bash on sunos x86
DLPX-39886	Status script exit errors are not throwing faults.
DLPX-39865	ASE: Compatible repositories is broken for sybase
DLPX-39714	Staging Server Processor Continually Maxed at 100% CPU Utilization
DLPX-39703	CREATE_CONTROL_FILE_ERROR in V2P/DB_EXPORT
DLPX-39568	mds upgrade scripts for 4.3.1.0
DLPX-39540	AppData vFiles card boolean sliders are too long and card contents glitch and disappear
DLPX-39531	Quiesce MSSQL containers in parallel during upgrade
DLPX-39526	fix for DLPX-36370 accidentally reverted DLPX-37692
DLPX-39518	Ratio display as n/a in GUI

DLPX-39512	ASE Virtual Sources are not auto-enabled after self-service upgrade
DLPX-39503	4.2 format status script causes errors in 4.3.1
DLPX-39489	ASE ValidatedSync rollback logic should attempt to use UNMOUNT before falling back to DROP DATABASE
DLPX-39458	IllegalStateException thrown in DTraceDataCollector
DLPX-39440	Improve the role of data management toolkits in release process
DLPX-39436	CLI objname.js should only list APIs that are visible to the user
DLPX-39413	Don't leak notification channels when creating new APISessionDO for existing HttpSession
DLPX-39383	Unable to delete the failed action
DLPX-39342	Hook template can't be edited if it has % sign
DLPX-39237	mgmt service spuriously fails to start due to chown failure
DLPX-39209	Number of Hooks are inconsistent for Live Source GUI
DLPX-38889	MDS PENDING_UPDATE state incorrect for stable source DB
DLPX-40152	4.3.2.0 upgrade failed "dplx_namespace_filesystem_mapping" does not exist

### DelphixOS Fixes

Bug Number	Description
DLPX-39572	adding a DHCP address fails with a DFE
DLPX-39179	i/o larger than 1MB (from device removal) breaks mpt
DLPX-39167	ztest: hits vd->vdev_top_zap != 0 assertion when removing log device

### Release 4.3.1.0 Changes

#### Management Server Fixes

Bug Number	Description
DLPX-39385	java.lang.RuntimeException: [class com.delphix.appliance.server.dco.host.WindowsHostDO] is not a valid BundleParam initialization type.
DLPX-39384	NPE at system summary screen
DLPX-39358	CLONE - Configs with toolkit defined params should not be manually created or updated
DLPX-39352	Upgrade to 4.2.4.1 gets dSource out of NPM mode but associated filesystems are not mounted - mds state
DLPX-39351	Upgrade to 4.2.4.1 gets dSource out of NPM mode but associated filesystems are not mounted - zfs state
DLPX-39350	xpp validation fails when delphix database user does not have 'select any dictionary' privilege
DLPX-39348	MSSqlBackupSetTest lookupFirstFullDBBackupSetComplex2 can fail
DLPX-39317	Missing type during DynamicEnumParameter to Delphix constraint conversion
DLPX-39306	mds upgrade scripts for 4.3.0.3
DLPX-39277	Initial setup hangs on create domain with VirtualBox
DLPX-39274	Failure in forceSendReceiveTest
DLPX-39269	Existing AppData repositories in 4.2 and upgrade to 4.3 leads to duplicated repositories

DLPX-39249	Race between serialization point becoming inactive and reaper checking for holds
DLPX-39239	SMTP Configuration does not persist when set.
DLPX-39195	Initial setup can't proceed past Storage Setup or Setup Summary screens
DLPX-39114	Stack crashes when trying to create more than 800 worker threads
DLPX-39024	Replication fails with LDAP error on target, but user auth works
DLPX-38819	dsources should be taken out of performance mode on upgrade
DLPX-38818	It should not be possible to enable PerformanceMode on dSources
DLPX-38712	Remove cleanup hook from toolkit
DLPX-38703	mgmt smf startup failure sometimes leaves 'java' process running
DLPX-38699	EBS appsTier vFiles GUI card contents can overflow with a long INST_TOP value
DLPX-36278	Windows Appdata staging provision wizard slightly cuts off content on the right
DLPX-39528	mds upgrade scripts for 4.2.5.0
DLPX-39399	IllegalArgumentException while deleting jet stream data container
DLPX-39482	daoFactory.getStorageContainer should return an Optional
DLPX-39502	Setup sometimes hangs on VirtualBox creating domain
DLPX-39522	Management stack crash when doing a resynchronize (redoBaseBackup) on postgres

## Release 4.3.0.3 Changes

### Management Server Fixes

Bug Number	Description
DLPX-39224	EOL api whitelist
DLPX-39200	NPE in ObjectReaperTest
DLPX-39198	ant dev causes inconsistent schemas
DLPX-39174	Hooks UI does not show up in linking wizard
DLPX-39155	mds upgrade scripts for 4.3.0.2
DLPX-39147	Finding the first- and latest backup sets for an mssql timeflow grows very slow over time
DLPX-39138	Add JVM options to facilitate observability
DLPX-39134	mds upgrade scripts for 4.3.0.1
DLPX-39127	Enable RAC VPDB will fail with exception.oracle.dbc.database.notopen
DLPX-39107	Got Exception During Linking/SnapSync a dSource on MySQL 5.7 Installation with GTID Enabled
DLPX-39105	login screen should say IE8 is unsupported (not deprecated)
DLPX-38994	network analytic code is making too many DNS queries, blocks dtrace reading threads
DLPX-38993	analytics LocalTCPStatsCollector filling up info logs
DLPX-38872	Click Next button from Add dSource but did not go to next screen
DLPX-38858	IllegalArgumentException: No enum constant MSSqlDBCContainerDO.ValidatedSyncMode.FULL_OR_INCREMENTAL
DLPX-38853	MSSQL 15k partitions support breaks 2005 test runs
DLPX-38851	MySQL 5.6.22 changes behavior of relay_log_recovery

DLPX-38714	Manifest files lost with MDS postgres upgrade to 9.4
DLPX-38705	Restoration Dataset sourceConfigs should be filtered from environment page and dSource wizard
DLPX-38701	oratab entries for RAC databases are not checked correctly

### DelphixOS Fixes

Bug Number	Description
DLPX-39146	system hung waiting on free segment

## Release 4.3.0.2 Changes

### Management Server Fixes

Bug Number	Description
DLPX-39088	Uploading old appdata toolkit causes NPE in Gallifrey translators
DLPX-39080	Delphix Express registration is done twice
DLPX-39078	Delphix Express Update phone home to call home an hour after stack startup if first time or if it hasn't been a week
DLPX-39003	Remove toolkit script dump from user-visible exceptions
DLPX-38997	Warehouse Upgrade button is missing
DLPX-38969	Windows cluster refresh fails with script not found
DLPX-38835	GUI needs to hide migrate warehouse button
DLPX-38716	No hook operations for SQL Server VDBs
DLPX-38713	GUI different from documentation when showing hooks.
DLPX-38696	MSSQL VDB refresh can fail trying to set recovery mode to 'UNKNOWN'
DLPX-38693	Getting Exception While Migrating a VDB to Remote Host
DLPX-38691	V2P and Provision buttons should be disabled for Conspro
DLPX-38686	unrevert DLPX-28695 sql upgrade scripts need to be valid HyperSQL and PostgreSQL at the same time
DLPX-38673	Unmount and unexport unused LUNs for mssql staging and target dbs
DLPX-38672	test_mssql_snapshot_dsource fails in nightly trunk run

## Release 4.3.0.1 Changes

### Management Server Fixes

Bug Number	Description
DLPX-38959	mds upgrade scripts for 4.3.0.0
DLPX-38906	Upgrade script needed for hanging references fixed by DLPX-37621
DLPX-38877	NexusResetException treated as fatal again
DLPX-38873	AppData NFS mounting options should include "noac" when Additional Mount Points in use
DLPX-38852	java.lang.NullPointerException com.delphix.appliance.node.webapp.ApplicationInitializer.onStartup(ApplicationInitializer.java:218)

DLPX-38842	Incorrect user used for tmp file during toolkit execution
DLPX-38815	Cannot add Unstructured Files to windows host
DLPX-38807	Tunable oracle.vdb.redolog_zfs_record_size_kb is not working
DLPX-38771	Migrate a warehouse to a different target and got NPE
DLPX-38711	AppData linking wizard summary screen has scrollbars with a long 'path to exclude'
DLPX-38707	Provision vFiles wizard Target Environment and Summary views don't show scrollbar with many dynamic params
DLPX-38697	Relax feature installation error handling to prevent warehouse lockout
DLPX-38681	CONSPRO needs to stop unsupported operations early
DLPX-38668	Provision VDB should remove uncheck number for cluster provision

### DelphixOS Fixes

Bug Number	Description
DLPX-38822	Delphix VMs configured with DHCP networking default fail to configure network interfaces if no DHCP server is present
DLPX-38683	Device removal in 4.2 and upgrade to 4.3 results in reboot loop

### Release 4.3.0.0 Changes

- Delphix now supports MySQL as a data platform. To find additional information about MySQL, click [MySQL](#) to get started.
- Delphix express is a free version of Delphix available to individuals and small team applications after registering on <http://community.delphix.com>. For additional information about Delphix Express, go to the [Delphix Express Quick Start Guide](#).
- Customers can now provision an instance of Oracle EBS in a single Jet Stream data container. Delphix will allow users to specify the order of operations in which an entire application will be provisioned. To find additional information Jet Stream Ordered Sources, see [Ordered Sources](#).
- Users can now recover unmutated copies of data for restoration and backup on Oracle EBS in addition to provisioning data into non-prod environments. To find additional information about Restoration Satasets for EBS, see [Restoration Datasets](#).
- Delphix now uses CHAP authentication to secure iSCSI connections, which will eliminate the possibility of unauthorized connections. For more information click [iSCSI Configuration](#).
- DSP integration with SOCKS leaves the firewall in control of applications and provides a clean connection across a firewall for data transfer. For more information, refer to [Configuring Network in Replication](#).
- Delphix will now support [SAP ASE on the AIX operating platform](#). Customers using ASE on AIX can now integrate Delphix with this platform.
- Delphix will fully support [SAP ASE Version 16](#) with this update
- Delphix now supports [PostgreSQL 9.3](#) on OSes.
- Delphix now supports [PostgreSQL 9.4](#) on OSes.
- Delphix now provides support for the [AWS GovCloud](#) region.
- Users can customize the [redo log size](#) while provisioning a vdb and disabling the archive log mode. This will improve VDB provision time and runtime performance.
- Duplicate data source names are no longer allowed in JetStream. Existing duplicate names will be uniquified on upgrade.
- JetStream users can now go back to the last snapshot before a REFRESH, RESTORE, or RESET operation.
- Oracle 12c w/APEX users will no longer cause Unix to Linux validation to fail.
- Cross-Site Request Forgery (CSRF) headers are now required on all browser requests. This is handled automatically by the Delphix GUI. If you see a "403 Forbidden" error you may need to refresh the page or clear the browser cache.
- The User Roles for accessing/viewing Delphix objects has changed. Please see [User Roles](#) for more details.
- The IO Report Card has been modified to include IOPS, throughput (MBps) along with avg/min/max/stddev latency. For more info please see the [IO Report Card](#) documentation.
- Ignored faults will no longer be notified via email. Please see [faults](#) for more information on fault handling.
- A warning will now be raised if an MSSQL Server source changes its recovery model.

### Release 4.3 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.
- 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
- Provisioning a RAC PDB Data Source into a non-RAC CDB is only supported if the customer is on Oracle 12.2.0.2 and they have applied an Oracle patch that fixes the following Oracle bug:

| *Bug 19637186: RAC OPTION MISMATCH PRODUCES ERROR VIOLATION DURING PDB PLUG IN*

## Cross-Platform Provisioning Issues

### **Unsupported Oracle Features**

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

### **Toolkit Scripts on \*nix**

Toolkit status scripts on \*nix based systems may not upgrade correctly if they contain the character %. This will lead to the associated source reporting being in an unknown state. A workaround exists where this problem can be fixed by uploading a new version of the toolkit after upgrade. The DB2 toolkit is affected by this known issue.