

Oracle® Big Data Discovery

Upgrade Guide

Version 1.3.0 • July 2016

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Preface

Oracle Big Data Discovery is a set of end-to-end visual analytic capabilities that leverage the power of Apache Spark to turn raw data into business insight in minutes, without the need to learn specialist big data tools or rely only on highly skilled resources. The visual user interface empowers business analysts to find, explore, transform, blend and analyze big data, and then easily share results.

About this guide

This guide describes how to upgrade your Big Data Discovery cluster to version 1.3.0.

Audience

This guide is intended for system administrators and developers who are upgrading Oracle Big Data Discovery.

Conventions

The following conventions are used in this document.

Typographic conventions

The following table describes the typographic conventions used in this document.

Typeface	Meaning
User Interface Elements	This formatting is used for graphical user interface elements such as pages, dialog boxes, buttons, and fields.
Code Sample	This formatting is used for sample code segments within a paragraph.
<i>Variable</i>	This formatting is used for variable values. For variables within a code sample, the formatting is <i>Variable</i> .
File Path	This formatting is used for file names and paths.

Symbol conventions

The following table describes symbol conventions used in this document.

Symbol	Description	Example	Meaning
>	The right angle bracket, or greater-than sign, indicates menu item selections in a graphic user interface.	File > New > Project	From the File menu, choose New, then from the New submenu, choose Project.

Path variable conventions

This table describes the path variable conventions used in this document.

Path variable	Meaning
\$ORACLE_HOME	Indicates the absolute path to your Oracle Middleware home directory, where BDD and WebLogic Server are installed.
\$BDD_HOME	Indicates the absolute path to your Oracle Big Data Discovery home directory, \$ORACLE_HOME/BDD- <i><version></i> .
\$DOMAIN_HOME	Indicates the absolute path to your WebLogic domain home directory. For example, if your domain is named <i>bdd-<i><version></i>_domain</i> , then \$DOMAIN_HOME is \$ORACLE_HOME/user_projects/domains/ <i>bdd-<i><version></i>_domain</i> .
\$DGRAPH_HOME	Indicates the absolute path to your Dgraph home directory, \$BDD_HOME/dgraph.

Contacting Oracle Customer Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. This includes important information regarding Oracle software, implementation questions, product and solution help, as well as overall news and updates from Oracle.

You can contact Oracle Customer Support through Oracle's Support portal, My Oracle Support at <https://support.oracle.com>.



Chapter 1

Before You Upgrade

Before upgrading BDD, you must download the required software packages and prepare your cluster.

[*Supported upgrade paths*](#)

[*Upgrade requirements*](#)

[*Downloading the upgrade packages*](#)

[*Downloading a WebLogic Server patch*](#)

[*Obtaining the Hadoop client libraries*](#)

[*Running the BDD hotfix*](#)

[*Backing up your current cluster*](#)

Supported upgrade paths


The following upgrade paths are supported.

- 1.0 to 1.3.0
- 1.1.x to 1.3.0
- 1.2.x to 1.3.0

Upgrade requirements

Before upgrading, make sure your system meets the following requirements.

Requirement	Description
Hadoop	<p>BDD 1.3.0 supports the following:</p> <ul style="list-style-type: none"> • Cloudera Distribution for Hadoop (CDH) 5.5.x (min. 5.5.2), 5.6, 5.7.1 • Hortonworks Data Platform (HDP) 2.3.4.17-5, 2.4.x (min. 2.4.2) <p>If you don't have one of the above installed, upgrade your Hadoop cluster before upgrading BDD. For instructions, refer to the documentation for your Hadoop distribution.</p> <p>Before upgrading your Hadoop cluster, be aware of the following:</p> <ul style="list-style-type: none"> • You can't switch to a different Hadoop distribution without reinstalling BDD. For example, if you currently have CDH, you can't switch to HDP. • You should stop your BDD cluster before you upgrade Hadoop. Once Hadoop has been upgraded, follow the procedure described in "Switching Hadoop versions" in the <i>Administrator's Guide</i> to enable BDD to work with the new version. • After you upgrade Hadoop, verify that the YARN configuration changes you made before installing BDD weren't reset. For more information, see "YARN setting changes" in the <i>Installation Guide</i>. <p>If you're upgrading from BDD 1.0, upgrade Hadoop just before you run the BDD upgrade script. BDD 1.0 doesn't support any of the currently-supported versions of CDH, so your BDD cluster must remain stopped once you upgrade Hadoop. Additionally, you should verify that the server roles in your Hadoop cluster don't change during the upgrade.</p>
Secure Hadoop	<p>BDD 1.3.0 can run on Hadoop clusters secured with TLS/SSL and HDFS data at rest encryption. If you don't currently have these enabled, you can configure them in your Hadoop cluster before upgrading BDD and then enable them for BDD at upgrade time.</p> <p>See the section "Security options" in the <i>Installation Guide</i> for instructions. Also, be sure to set the <code>HADOOP_CERTIFICATION_PATH</code> property in <code>bdd.conf</code> before upgrading.</p>
Operating system	<p>BDD supports the following operating systems:</p> <ul style="list-style-type: none"> • Oracle Enterprise Linux 6.4+, 7.1 • Red Hat Enterprise Linux 6.4+, 7.1 <p>If you don't have one of the above installed, upgrade your OS before upgrading BDD. Additionally, you must clear the <code>\$http_proxy</code> environment variable:</p> <pre>export http_proxy=</pre>
OS user	<p>The entire upgrade process must be performed by the <code>bdd</code> user (the OS user that installed BDD and runs all BDD processes). This user must have the same UID on all nodes in the cluster, including Hadoop nodes.</p>

Requirement	Description
Dgraph databases (index)	<p>The Dgraph database (index) directory must contain enough free space to double your databases, as this may occur temporarily during the upgrade process.</p> <p> Note: Although BDD 1.3.0 enables you to store your Dgraph databases (index) on HDFS, you can't move them there until after the upgrade. For instructions on doing this, see the <i>Administrator's Guide</i>.</p>
Transform Service	<p>If you're upgrading from 1.0 or 1.1.x, the upgrade script will install the Transform Service on the nodes you specify in <code>bdd.conf</code>. For best performance, these should be WebLogic Managed Servers.</p> <p>The Transform Service requires at least 11GB of RAM and 39GB of virtual memory, and may require more depending on the size of its workloads. Be sure that the nodes you install it on meet these requirements.</p>
Perl modules	<p>Verify that the following Perl modules are installed on the Admin Server:</p> <ul style="list-style-type: none"> • <code>Mail::Address</code> • <code>XML::Parser</code> • <code>JSON-2.90</code> <p>If any are missing, install them according to the instructions in "Installing the required Perl modules" in the <i>Installation Guide</i>.</p>
Linux utilities	<p><code>curl 7.19.7+</code> and Network Security Services (NSS) 3.16.1+ must be installed on all Studio nodes. Additionally, <code>curl</code> must support the options <code>--tlsv1.2</code> and <code>--negotiate</code>.</p>

Downloading the upgrade packages

Once you have satisfied all prerequisites, you can download the upgrade packages.

These are available on the Oracle Software Delivery Cloud. After downloading them, you must put them in a single directory on the Admin Server, called the *upgrade source directory*. You will perform the entire upgrade process from this location.

To download the upgrade packages:

1. On the Admin Server, create a new directory or select an existing one to be the upgrade source directory.
2. Within the upgrade source directory, create a subdirectory named `packages`.
3. Go to the [Oracle Software Delivery Cloud](#) and sign in.
4. Accept the Export Restrictions.
5. Check **Programs** if it isn't already selected.
6. In the **Product** text box, enter `Oracle Big Data Discovery`.

7. Click **Select Platform** and check **Linux x86-64**.
Oracle Big Data Discovery displays in the **Selected Products** table.
8. Click **Continue**.
9. Verify that **Available Release** and **Oracle Big Data Discovery 1.3.x.x.x for Linux x86-64** are both checked, then click **Continue**.
10. Accept the Oracle Standard Terms and Restrictions and click **Continue**.
11. In the **File Download** popup, click **Download All**.

The following packages are downloaded to your machine:

- **First of two parts of the Oracle Big Data Discovery binary**
- **Second of two parts of the Oracle Big Data Discovery binary**
- **Installer for Oracle Big Data Discovery**
- **SDK for Oracle Big Data Discovery**
- **Documentation for Oracle Big Data Discovery**

Also, make a note of each package's part number, as you will need this information to identify it.

12. On the Admin Server, move the packages you downloaded to `/<upgrade_source_dir>/packages`.
13. Rename the first BDD binary package `bdd1.zip` and the second `bdd2.zip`.
This is required for the upgrade script to recognize them.
14. Move up a directory to the upgrade source directory and unzip the installer package:

```
unzip packages/<installer_package>.zip
```

This creates a new directory within the upgrade source directory called `/installer`, which contains the scripts and files required to perform the upgrade.

Next, you can optionally download a WebLogic Server patch for the upgrade script to apply. If you don't want to patch WebLogic Server, move on to [Obtaining the Hadoop client libraries on page 10](#).

Downloading a WebLogic Server patch

You can optionally download a WebLogic Server patch for the upgrade script to apply when it runs.

You can only apply one patch when upgrading. If the patch fails, the upgrade script will remove it and continue running. For more information on patching WebLogic Server, see [Oracle Fusion Middleware Patching with OPatch](#).

To download a WebLogic Server patch:

1. Within the upgrade source directory, create a new directory called `WLSPatches`.
Don't change the name of this directory or the upgrade script won't recognize it.
2. Go to [My Oracle Support](#) and log in.
3. On the **Patches & Updates** tab, find and download the patch you want to apply.

4. Move all ZIP files associated with the patch to `<upgrade_source_dir>/WLSpatches`.

Don't extract the files. The upgrade script will do this when it runs.

Next, you must obtain the Hadoop client libraries.

Obtaining the Hadoop client libraries

Next, obtain the Hadoop client libraries and put them on the Admin Server.

BDD requires a number of client libraries to interact with Hadoop. In a normal Hadoop cluster, these libraries are spread out, making it difficult for BDD to find them all. To solve this issue, the upgrade script adds the required libraries to a single JAR, called the Hadoop fat JAR, and distributes it to all BDD nodes.

The specific libraries you need depend on your Hadoop distribution. The location you put them in is arbitrary, as you will define it in `bdd.conf`.



Note: If you're upgrading from BDD 1.0, be sure to obtain the libraries for one of the currently-supported CDH versions, even though you haven't upgraded to it yet.

- **CDH:** Download the following files from <http://archive-primary.cloudera.com/cdh5/cdh/5/> to the Admin Server and extract them:
 - `spark-<spark_version>.cdh.<cdh_version>.tar.gz`
 - `hive-<hive_version>.cdh.<cdh_version>.tar.gz`
 - `hadoop-<hadoop_version>.cdh.<cdh_version>.tar.gz`
 - `avro-<avro_version>.cdh.<cdh_version>.tar.gz`

Be sure to download the files that correspond to the component versions you currently have installed (unless you're upgrading from BDD 1.0).

- **HDP:** Copy the following libraries from your Hadoop nodes to the Admin Server. Note that these directories might not all be on the same node.
 - `/usr/hdp/<version>/hive/lib/`
 - `/usr/hdp/<version>/spark/lib/`
 - `/usr/hdp/<version>/hadoop/`
 - `/usr/hdp/<version>/hadoop/lib/`
 - `/usr/hdp/<version>/hadoop-hdfs/`
 - `/usr/hdp/<version>/hadoop-hdfs/lib/`
 - `/usr/hdp/<version>/hadoop-yarn/`
 - `/usr/hdp/<version>/hadoop-yarn/lib/`
 - `/usr/hdp/<version>/hadoop-mapreduce/`
 - `/usr/hdp/<version>/hadoop-mapreduce/lib/`

If you're upgrading from 1.0 or 1.1.x, you should now apply the upgrade hotfix. If you have 1.2.x, move on to [Backing up your current cluster on page 11](#).

Running the BDD hotfix

If you're upgrading from 1.0 or 1.1.x, you must apply one of the hotfixes to install the backup and restore scripts required during the upgrade.



Note: This isn't required if you're upgrading from 1.2.x.

There are separate hotfixes for versions 1.0, 1.1.0, and 1.1.1. Run the script that corresponds to the version you currently have installed.

To run the BDD hotfix:

1. On the Admin Server, go to
`<upgrade_source_dir>/installer/hotfix/<version>/hotfix_EADMIN-1503.`

Where `<version>` is the version of BDD you currently have installed.

2. Run the hotfix script:

```
./hotfix_EADMIN-1503.sh <path/to/bdd.conf>
```

Where `<path/to/bdd.conf>` is the absolute path to your current `bdd.conf` file.

The hotfix adds two new scripts to `$BDD_HOME/BDD_manager/bin`: `bdd-backup.sh` and `bdd-restore.sh`.

Backing up your current cluster

Next, back up your current cluster.

If you're upgrading from 1.0 or 1.1.x, run the backup script added by the hotfix. If you're upgrading from 1.2.x, use `bdd-admin`'s `backup` command. All versions of the script back up the following data to a single TAR file:

- Configuration files
- Studio database
- Schema and data for Hive tables created in Studio
- Dgraph databases (index)
- Sample files in HDFS

You can use this file to restore your current cluster if the upgrade fails.

Before you run the backup script, verify the following:

- The `BDD_STUDIO_JDBC_USERNAME` and `BDD_STUDIO_JDBC_PASSWORD` environment variables are set. If they aren't, the script will prompt you for the username and password of the Studio database at runtime.
- The database client is installed on the Admin Server. For MySQL databases, this should be MySQL client. For Oracle databases, this should be Oracle Database Client, which must be installed with a type of Administrator. Note that the Instant Client isn't supported.
- If you have an Oracle database, the `ORACLE_HOME` environment variable is set to the parent directory of the `/bin` directory the `sqlplus` executable is located in. For example, if the `sqlplus` executable is

located in `/u01/app/oracle/product/11/2/0/dbhome/bin`, set `ORACLE_HOME` to `/u01/app/oracle/product/11/2/0/dbhome`.

- The temporary directories used during the backup operation contain enough free space. For more information, see section "backup" in the *Administrator's Guide*.

To back up your current cluster:

1. On the Admin Server, open a command prompt and go to `$BDD_HOME/BDD_manager/bin`.
2. Stop your cluster :

```
./bdd-admin.sh stop [-t <minutes>]
```

3. Run the backup script.

- BDD 1.0:

```
./bdd-backup.sh -v <backup_tar_file>
```

- BDD 1.1.x:

```
./bdd-backup.sh -o -v <backup_tar_file>
```

- BDD 1.2.x:

```
./bdd-admin.sh backup -o -v <backup_tar_file>
```

Where `<backup_tar_file>` is the absolute path to the backup TAR file. This file must not exist and its parent directory must be writable.

4. Enter the username and password for the Studio database, if prompted.

The script backs up your current cluster to the specified TAR file.



Chapter 2

Upgrading Big Data Discovery

Once you've obtained the required BDD and Hadoop packages and prepared your cluster, you can begin upgrading BDD.

[Overview](#)

[Merging the configuration file](#)

[Editing the configuration file](#)

[Upgrading the cluster](#)

[Troubleshooting a failed upgrade](#)

[Rolling back a failed upgrade](#)

Overview

You upgrade your cluster by running two separate scripts.

The first script merges the current version of `bdd.conf` with the version from the new release. This ensures that your cluster will retain most of its current configuration. However, you still need to manually edit the file to set new properties added in this release and any that couldn't be merged.

The second script upgrades your cluster and installs the new components and features. When it finishes running, your cluster will be completely upgraded and ready to use.

\$BDD_HOME

The upgrade script installs the new version of BDD in `/BDD_<version>`, which is the new `$BDD_HOME`. The script doesn't remove `/BDD_<old_version>`, however. You can delete this if you want.



Important: If you decide to uninstall BDD, the uninstallation script will delete the contents of *all* instances of `/BDD_<version>`, not just the latest one. If there's anything in an older `/BDD_<version>` that you want to keep, back it up to a different location before uninstalling. See the *Installation Guide* for more information.

[Silent upgrade](#)

Silent upgrade

You can optionally run the upgrade script in silent mode. This means that instead of prompting you for information it requires at runtime, the script obtains it from environment variables you set beforehand.

Normally, when you run the script, it prompts you to enter:

- The username and password for your Hadoop cluster manager (Cloudera Manager or Ambari).
- The username and password for the WebLogic Server admin.
- The username and password for the Studio database.

You can avoid these steps by setting the following environment variables before running the script.

Environment variable	Description
BDD_HADOOP_UI_USERNAME	The username for Cloudera Manager/Ambari.
BDD_HADOOP_UI_PASSWORD	The password for Cloudera Manager/Ambari.
BDD_WLS_USERNAME	The username for the WebLogic Server admin.
BDD_WLS_PASSWORD	The password for the WebLogic Server admin.
BDD_STUDIO_JDBC_USERNAME	The username for the Studio database.
BDD_STUDIO_JDBC_PASSWORD	The password for the Studio database.

Merging the configuration file

The first step in the upgrade process is to merge your current `bdd.conf` with the version from the new release.

You do this by running `merge-bddconf.sh`, which populates the new version of `bdd.conf` with values from the current version. Although the merged file will contain most of your current settings, you'll need to manually edit any properties the script couldn't merge, as well as those that were added in the new release.

To merge the configuration files:

1. On the Admin Server, open a command prompt and go to the upgrade source directory.
2. Run the merge script:

```
./merge-bddconf.sh <current_bdd.conf> <new_bdd.conf>
```

Where `<current_bdd.conf>` is the absolute path to your current `bdd.conf`, and `<new_bdd.conf>` is the relative path to the new one. On most systems, this should be:

```
./merge-bddconf.sh $BDD_HOME/BDD_manager/conf/bdd.conf bdd.conf
```

Next, update the new and unmerged properties in `bdd.conf`.

Editing the configuration file






After you merge `bdd.conf`, you need to manually edit the new properties and any that weren't merged properly.

The upgrade script validates `bdd.conf` at runtime and fails if the file contains any invalid values. To avoid this, keep the following in mind when editing the file:

- The accepted values for some properties are case-sensitive and must be entered exactly as they appear in the table below.
- All hostnames must be fully qualified domain names (FQDNs).
- Any symlinks included in paths must be identical on all nodes. If any are different or don't exist, the upgrade may fail.
- Each port setting requires a unique value. You can't use the same port number more than once.
- Some of the directories defined in `bdd.conf` have location requirements. These are specified in the table below.

The properties you need to edit are described below. You should also review the rest of the file to verify that all other settings are still accurate. Additional information on the properties in `bdd.conf` is available in the *Installation Guide*.

Property	Description
BDD_OLD_CONFIG	The absolute path to your current version of <code>bdd.conf</code> . This will already be populated.
INSTALLER_PATH	The absolute path to the BDD software packages in the upgrade source directory.
STUDIO_JDBC_URL	The JDBC URL for your database. This isn't a new property, but the URL for your database may have changed since you installed. You should verify that this property is still accurate and edit it if it's not.
HADOOP_CLIENT_LIB_PATHS	A comma-separated list of the absolute paths to the Hadoop client libraries. To set this property, copy the template to <code>HADOOP_CLIENT_LIB_PATHS</code> and update the paths to point to the client libraries you copied to the install machine. Don't change the order of the paths in the list as they <i>must</i> be specified as they appear. For more information on the client libraries and how to obtain them, see Obtaining the Hadoop client libraries on page 10 .
HADOOP_CERTIFICATES_PATH	Only required for Hadoop clusters with TLS/SSL enabled. The absolute path to the directory on the install machine where you put the certificates for HDFS, YARN, Hive, and the KMS services. For instructions on exporting these, see the <i>Installation Guide</i> .

Property	Description
SPARK_ON_YARN_JAR	The absolute path to the Spark on YARN JAR on Hadoop nodes. Verify that the value matches the correct version of your Hadoop distribution.
ENABLE_CLUSTERING_SERVICE	 Important: For use by Oracle Support only. Leave this property set to FALSE.
CLUSTERING_SERVICE_SERVERS	 Important: For use by Oracle Support only. Don't modify this property.
CLUSTERING_SERVICE_PORT	 Important: For use by Oracle Support only. Don't modify this property.
FORCE	Determines whether the upgrade script will remove files and directories left over from previous installations when it runs. This can be set to TRUE or FALSE.
STUDIO_JDBC_CACHE	Enables/disables database caching in Studio.
DGRAPH_ENABLE_MPP	 Important: For use by Oracle Support only. Don't modify this property.
DGRAPH_MPP_PORT	 Important: For use by Oracle Support only. Don't modify this property.
RECORD_SEARCH_THRESHOLD	The minimum number of characters the average value of a String attribute must contain to be record searchable. For more information, see the <i>Data Processing Guide</i> .
VALUE_SEARCH_THRESHOLD	The minimum number of characters the average value of a String attribute must contain to be value searchable. For more information, see the <i>Data Processing Guide</i> .

BDD 1.1.x upgrades

If you're upgrading from BDD 1.1.x, you should also verify the following properties.

Property	Description
ZOOKEEPER_INDEX	The index of the Dgraph cluster in the ZooKeeper ensemble, which ZooKeeper uses to identify it. This used to be called COORDINATOR_INDEX.

Property	Description
TRANSFORM_SERVICE_SERVERS	<p>A comma-separated list of the Transform Service nodes. For best performance, these should all be Managed Servers. In particular, they shouldn't be Dgraph nodes, as both the Dgraph and the Transform Service require a lot of memory.</p> <p>Each of these nodes must have at least 11GB of RAM and 39GB of available virtual memory.</p>
TRANSFORM_SERVICE_PORT	The port the Transform Service listens on for requests from Studio.
BACKUP_LOCAL_TEMP_FOLDER_PATH	The absolute path to the default temporary folder on the Admin Server used during backup and restore operations. This can be overridden on a case-by-case basis by the <code>bdd-admin</code> script.
BACKUP_HDFS_TEMP_FOLDER_PATH	The absolute path to the default temporary folder on HDFS used during backup and restore operations. This can be overridden on a case-by-case basis by the <code>bdd-admin</code> script.
DGRAPH_USE_MOUNT_HDFS	<p>Specifies whether the Dgraph databases are stored on HDFS.</p> <p>When upgrading from 1.1.x and lower, this must be set to <code>FALSE</code>.</p>
DGRAPH_HDFS_MOUNT_DIR	<p>The absolute path to the local directory where the Dgraph mounts the HDFS root directory.</p> <p>Use a nonexistent directory when installing. If this location changes after installing, the new location must be empty and have read, write, and execute permissions for the <code>bdd</code> user.</p> <p>This setting is only required if <code>DGRAPH_USE_MOUNT_HDFS</code> is set to <code>TRUE</code>.</p>
DGRAPH_ENABLE_CGROUP	<p>Enables cgroups for the Dgraph. This must be set to <code>TRUE</code> if you use cgroups on your Dgraph nodes.</p> <p>If set to <code>TRUE</code>, <code>DGRAPH_CGROUP_NAME</code> must also be set.</p> <p>For more information on setting up cgroups for the Dgraph, see the <i>Installation Guide</i> and the <i>Administrator's Guide</i>.</p>
DGRAPH_CGROUP_NAME	The name of the cgroup that controls the Dgraph. This is required if <code>DGRAPH_ENABLE_CGROUP</code> is set to <code>TRUE</code> .

BDD 1.0 upgrades

If you're upgrading from BDD 1.0, you should also verify the following properties.

Property	Description
YARN_QUEUE	The YARN queue that Data Processing jobs are submitted to.

Property	Description
DP_ADDITIONAL_JARS	<p>Optional. A comma-separated list of the absolute paths to custom SerDe jars you want to use during data processing. These will be added to the CLI classpath.</p> <p>Note that you must manually copy each SerDe jar to the same location on all cluster nodes before upgrading.</p>

Upgrading the cluster

Once you've updated `bdd.conf`, you can upgrade your cluster.



Note: If you're upgrading from 1.0, you should upgrade your Hadoop cluster before running the upgrade script.

Before you run the upgrade script, verify that you satisfied all prerequisites described in [Before You Upgrade on page 6](#). Additionally, your Hadoop cluster must be running throughout the upgrade process.

To upgrade your cluster:

1. On the Admin Server, open a command prompt and go to the upgrade source directory.
2. Run the upgrade script:


```
./upgrade.sh bdd.conf
```
3. If you're not running the script in silent mode, enter the following when prompted:
 - The username and password for your Hadoop cluster manager (Cloudera Manager or Ambari).
 - The username and password for the WebLogic Server admin.
 - The username and password for the Studio database.

Troubleshooting a failed upgrade

If the upgrade fails, you should first determine why it failed. To do this, check the script's log files in `<upgrade_source_dir>/packages/installer/upgrade.log.xxx`.

[Studio fails to start](#)

Studio fails to start

In some cases, Studio may fail to start after the upgrade.

If this occurs, restart Studio by going to `$BDD_HOME/BDD-manager/bin` on the Admin Server and running:

```
./bdd-admin.sh restart -c bddServer
```

Rolling back a failed upgrade

Once you've determined why the upgrade failed, you can roll it back and restore your old cluster.

The rollback script removes all of the changes made by the upgrade script. It also restores your old cluster from backup, starts it, and performs a healthcheck.



Important: The rollback script removes the logs created by the upgrade script, so be sure to check them beforehand to determine why the upgrade failed.

When the script finishes running, your cluster will be back to its pre-upgrade state and running. You can then either rerun the upgrade process or restore your old cluster.

If you decide to rerun the upgrade process, you must rerun the merge script, as the merged version of `bdd.conf` wasn't included in the backup.

To roll back a failed upgrade:

1. If you upgraded from BDD 1.0, downgrade your Hadoop cluster to the version you were running before.

This is required because BDD 1.0 doesn't support any of the currently-supported versions of CDH. For instructions, refer to the documentation for your Hadoop distribution.

2. On the Admin Server, open a command prompt and go to the upgrade source directory.
3. Run the rollback script:

```
./rollback.sh bdd.conf [--silent]
```

You can optionally include the `--silent` flag to avoid the confirmation step.

4. Confirm that you want to roll back the upgrade.
5. When prompted, enter the absolute path to your old cluster's backup TAR file.



Chapter 3

After You Upgrade

This section describes some of the changes made to your cluster, as well as tasks you should perform immediately after upgrading.

Verifying the upgrade

Changes made by the upgrade script

Post-upgrade configuration

Clearing browser cache

Rewriting custom transformations from BDD 1.0

Verifying the upgrade

After the upgrade script completes successfully, you should verify your upgrade by running the health-check script.

To verify the upgrade:

1. On the Admin Server, open a new terminal window and go to `$BDD_HOME/BDD_manager/bin`.
2. Run the health-check script:

```
./bdd-admin.sh status --health-check
```

If your BDD cluster is healthy, the script's output should be similar to the following:

```
[2016/03/24 04:18:55 -0700] [Admin Server] Checking health of BDD cluster...
[2016/03/24 04:20:39 -0700] [web009.us.example.com] Check BDD functionality.....Pass!
[2016/03
/24 04:20:39 -0700] [web009.us.example.com] Check Hive Data Detector health.....Hive Data
Detector has previously run
[2016/03/24 04:20:39 -0700] [Admin Server] Successfully checked statuses.
```

Changes made by the upgrade script

The upgrade script made a number of changes to your cluster, but there are a few in particular that you should be aware of.

- Your Dgraph database (index) was upgraded to the new format and `/DGRAPH_INDEX_DIR` now includes a separate database directory for each project. For more information, see the *Administrator's Guide*.
- Your sample files were upgraded to the new format and moved from `$edpDataDir/.collectionData/<collectionName>` to `$edpDataDir/.collectionData/<databaseName>.<collectionName>`.

- The list of supported Dgraph flags has changed in this release—some flags were renamed and a few were removed. Any that you had added to the `DGRAPH_ADDITIONAL_ARG` property in `bdd.conf` were updated accordingly. For more information, see the *Administrator's Guide*.

Post-upgrade configuration

If you run into any performance issues after you upgrade, you might need to adjust the configuration of your BDD or Hadoop cluster.

Please refer to the *Installation Guide* for more information on the changes you should make.

Clearing browser cache

After an upgrade, all BDD users should clear their browser caches before logging in to Studio. This ensures they'll be able to open their projects successfully.

Rewriting custom transformations from BDD 1.0

Although many of BDD's transformation functions have been refactored since 1.0 was released, the upgrade script doesn't update your custom transformation scripts accordingly. Because of this, if you upgraded from BDD 1.0, you need to update your scripts manually before you can use them in your projects.

You can edit your transformation scripts in Studio's **Transform** component. For more information, see the *Studio User's Guide*.

The following table lists the changes made to the functions.



Note: You only need to make these changes if you upgraded from BDD 1.0.

Function in release 1.0.0	Changes
geotagIPAddressGetCity	Replaced by the <code>geotagIPAddress</code> function.
geotagIPAddressGetCountry	
geotagIPAddressGetPostCode	
geotagIPAddressGetRegion	
geotagIPAddressGetRegionID	
geotagIPAddressGetSubRegion	
geotagIPAddressGetSubRegionID	

Function in release 1.0.0	Changes
geotagAddressGetCity geotagAddressGetCountry geotagAddressGetPostcode geotagAddressGetRegion geotagAddressGetSubRegion geotagAddressGetRegionID geotagAddressGetSubRegionID	Replaced by the geotagUnstructuredAddress function.
getLocationEntities getOrganizationEntities getPersonEntities	Replaced by the getEntities function.