This ReadMe describes changes and updates to the Data Sync tool for Oracle Business Intelligence Cloud Data Sync Release 1.1 and provide instructions for installing the Data Sync and updating it from prior releases. This Read Me contain the following sections:

- What’s New for Data Sync 1.2
- What’s New for Data Sync 1.1
- Installing Data Sync 1.2
- Known Issues

## What’s New for Data Sync 1.2

The following is a list of the changes and updates for this release:

- The system columns added in Data Sync 1.1 have been optimized to use less space and perform better in the database.
- By default, the data cache for data model objects in BICS is deleted at the end of every completed job run. Set the Delete Data Cache property to false if you do not want the cache deleted. For the cache purge, you need to grant the BI Data Modeler role to the user who is registered to upload data.

## What’s New for Data Sync 1.1

The following is a list of the changes and updates for the 1.1 release:

- In this version, Data Sync automatically retries 10 times to successfully upload data in case of network errors. Three system columns for every target table are used to support this restart capability.
  
  When a failed job is restarted, for those tables where the load strategy is "Insert only" or "Append data", any partially loaded data since the last successful batch is cleaned up and new data is reloaded. This prevents duplicate data in the case of failure restarts.
- For file-based sources, any number that cannot be accommodated by a NUMBER datatype is created with BINARY_DOUBLE data type.
- Support is included for additional delimiters in comma-separated value file sources, including pipe, and custom single character delimiters can be specified.
- The tool now supports table and column names with mixed cases and Oracle reserved words in their names.

## Installing Data Sync 1.2

Data Sync 1.2 is installed differently depending on whether you have an existing Data Sync installation.
Updating an Existing Installation

Install the Data Sync into a new directory using the instructions in the "Installing and Updating the Business Intelligence Cloud Service Data Sync" section in the Using Oracle Business Intelligence Cloud Service Data Sync guide. When Data Sync is started for the first time, select the "Copy an existing configuration" option, then choose the root directory of an existing Data Sync installation. This process copies all of the repository contents from the previous installation. During this process, you can change the name of the repository if desired. You will be asked to provide the password originally used for the previous installation.

Once Data Sync 1.2 is successfully installed and you are able to use the new environment, uninstall the old environment by deleting the old directory.

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Note: Any repository exported from the earlier Data Sync version cannot be imported into the newer version. You should always use the "Copy an existing configuration" option to migrate existing projects and system configuration.

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Performing a New Installation

Install Data Sync into a new directory using the instructions in the "Installing and Updating the Business Intelligence Cloud Service Data Sync" section in the Using Oracle Business Intelligence Cloud Service Data Sync guide.

Post-Installation Steps for Updating from Data Sync 1.1 to 1.2

The Business Intelligence Cloud Service (BICS) schema tables created by Data Sync version 1.1 had system columns with datatypes that consumed a lot of space. Data Sync 1.2 uses number datatypes for all of the system columns. Because of the datatype change the existing tables cannot be altered automatically. Job execution will fail with the following exception:

ANOMALY INFO::: Error while creating/altering tables on the cloud for table : SAMP_REVENUE_F
MESSAGE:::Error sending request "create/alter table SAMP_REVENUE_F" to http://xxxx!
Error code 500

[BICS-DATALOAD] The table definition as in the request has conflicts with the one in the schema.

SAMP_REVENUE_F - DSYS_INSTANCE_ID: the data type is changed from VARCHAR to NUMBER.
SAMP_REVENUE_F - DSYS_PROCESS_ID: the length of the column is changed from 30 to 12.
SAMP_REVENUE_F - DSYS_BATCH_ID: the data type is changed from VARCHAR to NUMBER(30)

There are two ways to address this issue, depending on whether you are always performing full loads or using incremental loads.

Drop and Recreate the Tables

If you are using 'Replace Data Always' for the tables and don’t need to retain previously loaded data, or if you can perform a full load of the data again, you can drop and recreate the tables to create the tables with the correct definitions. To do this:

1. In Data Sync, navigate to the Target Tables tab and query for the tables you want to recreate.
2. Right-click and select Drop/Create/Alter Tables.
3. In the Generate DW Table Scripts dialog box, select **All records in the list** and click **OK**.

4. Select the **Create New** radio button and check the **Drop Tables** checkbox. This will force all data to be re-extracted the next time the job is run.

5. Click **OK**.

**Upgrade System Columns While Retaining Tables**

If you have been performing incremental loads and do not wish to drop and recreate the tables and lose the data already loaded in the BICS schema, alter the tables so that the old system columns are removed and recreated with optimal datatypes. To do this:

1. In Data Sync, navigate to the Target Tables tab.

2. Right-click and select **Upgrade System Columns**. A SQL file, `conf\sqlgen\sql\Oracle (BICS)\upgradesystemcols.sql` is generated in the installation directory.

3. Log in to the APEX SQL Command application in a browser and execute the SQL file on the BICS schema. To access the APEX SQL command line application URL, follow this pattern: `https://<Service Instance Name>db-<Domain Name>.db.us2.oraclecloudapps.com/apex`. You need to have Administrator privileges to access this URL.

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**Note:** After the tables are altered in the BICS schema, a "Synchronize with Database" in BICS modeler will show the Data Sync system columns being out of sync. Review the synchronization messages and Sync the model objects.

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**Known Issues**

For relational sources, if the table or column names contain special characters like `$`, `#`, and so on, Data Sync jobs will fail.

To work around this issue, create a view on the table with no special characters in its name or column name and use that as a data source.

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