**Database Logging Module Documentation**

Overview: There is a need for application-level logging for database applications for informational and debugging purposes. This module was developed to provide a method to log entries in an Oracle database for any modules that utilize an Oracle database. A view object is available for viewing log entries that can be filtered and searched for certain types of log entries or log entries with certain types of content based on SQL query logic. A simple module has been provided to log the different types of information from a given module independent of SQL transactions performed by that module.

Data Model (all objects are documented/commented in the objects themselves, data model diagram can be found [here](data_model/DB_Log_diagram.png)):

* Tables:
  + DB\_LOG\_ENTRY\_TYPES: This table stores the different types of database log entries. Entry types include informational, errors, and success
  + DB\_LOG\_ENTRIES: This table stores log entries for a given module to enable debugging, logging errors, etc. This table is used in the Database Logging Module (DLM)
* Views:
  + DB\_LOG\_ENTRIES\_V: This query returns all log entries stored in the DB\_LOG\_ENTRIES table that includes the associated DB\_LOG\_ENTRY\_TYPES information for each log entry
* Packages:
  + DB\_LOG\_PKG: This package provides a single procedure ADD\_LOG\_ENTRY() that will insert a database log entry into the DB\_LOG\_ENTRIES table based on the parameters passed to the procedure. This procedure commits the DB\_LOG\_ENTRIES record in an autonomous transaction that is separate from any ongoing SQL transactions in the given module's execution so even if the transaction is rolled back the database log entry will be inserted barring any database errors encountered when the log entry is inserted.

Installing/Upgrading the database for a given application version:

* New installation: If you are installing this module on a database instance for the first time run the DB\_log\SQL\DB\_log\_combined\_DDL\_DML.sql script.
* Upgrading an existing installation: You must first determine which version of the Application Authorization database is currently installed by querying the DB\_UPGRADE\_LOGS\_V view with the UPGRADE\_APP\_NAME = 'Database Log'. The highest UPGRADE\_VERSION value is the currently installed database version (e.g. 0.3). The scripts (DB\_log\_DB\_DDL\_DML\_upgrade\_v[MAJOR].[MINOR].sql where [MAJOR] is the major version number and [MINOR] is the minor version number) in the DB\_log\SQL\upgrades\ folder will be run in order to upgrade the database to the desired version. For instance if the current version of the database is 0.3 and the desired database version is 0.5 the DB\_log\_DB\_DDL\_DML\_upgrade\_v0.4.sql and DB\_log\_DB\_DDL\_DML\_upgrade\_v0.5.sql files will be executed on the database instance in that order to perform the upgrade.
* \*\*Note: DB\_log\SQL\README.txt contains detailed information for the general database version control policies