

Oracle Environment at UWEX

January 7, 2008

Instances

There are three types of Oracle instances currently installed at UWEX: development, test and production. Each instance is a separate copy of the database and used for different purposes. The database is a collection of tables, indexes, triggers, sequences, etc. The development, test and production instances are used for application development.

Development

The development instance is used for developing databases. The purpose of the development database is to provide a place where developers can build and experiment with their database and their application. Thus, users of the development instance are granted the most privileges. The development instance should never be used as a repository for production data.

Test

The test instance is used for testing application code and database changes against a clean version of the database. After development is completed, the database should be built or moved to the test instance. In the test instance, the application should be thoroughly tested against the database. This instance is used to simulate the real production environment. The test instance should never be used as a repository for production data.

Production

The production instance is the only instance that should be used to hold production data and be accessed via applications by end-users. The production instance is the most stable database instance. Any changes made to the production database should go through the development and test databases first.

Instance Technical Specifications

The following table lists the detailed specifications for each instance:

	SID	Version
Development	D1010X	10.1.0.5
Test	T1010X	10.1.0.5
Production	P1010X	10.1.0.5

The SID is coded to identify the specific instance, the Oracle version number and the host. The first letter(s) of the SID refers to the type of instance: D for development, T for test, P for production. The '1010' refers to the Oracle version. The last letter of the SID indicates the operating system hosting the instance: 'X' stands for x86 RedHat Linux Advanced Server. The version is the Oracle Database Server version being used.

Accounts

Oracle accounts are classified as either project accounts or individual accounts. Any objects (e.g. tables, views, sequences, packages, etc.) created for an account are said to be part of the account's schema.

Project

Project accounts are not assigned to a specific person but rather to a project and are used by an individual or a group of individuals working on a project. There are two types of project accounts: a regular project account for ownership of the Oracle objects and a web access project account for accessing objects via ColdFusion and other web applications. All Oracle objects created for application systems should be owned by a project account. These accounts are generally given a name that identifies a project. The password for project accounts is set to expire every 120 days. Regular project accounts should never be used for web access. Generally, project accounts are set up to have privileges to connect to Oracle and create basic objects (e.g. tables, views, sequences, procedures, packages, functions, etc.) in their own schema.

A web access account is the ONLY type of account that should be used for web access by ColdFusion or other web applications. Web access accounts are generally given a name combining the associated project account's name and a

prefix of 'WWW_'. The passwords for web access accounts never expire. Web access accounts should be granted the appropriate privileges to access objects owned by project accounts. Generally, web access accounts are set up to have connect and create synonym privileges. Synonyms enable the account to reference database objects without specifying ownership.

Individual

Individual accounts are assigned to specific individuals. These accounts are used to experiment with Oracle. Individual accounts and all objects owned by them are removed when a person is no longer with Extension or their job function is changed. The password for an individual account is set to expire every 120 days. Individual accounts should never be used to hold project data and should never be used for web access. Individual accounts may be granted appropriate privileges to access project account objects. Generally, individual accounts are set up to have privileges to connect to Oracle and create basic objects (e.g. tables, views, sequences, procedures, packages, functions, etc.) in their own schema (the account name is the schema).

Password Expiration

All accounts, except special DBA accounts and web access accounts, have expiring passwords. The passwords expire every 120 days with the 120-day cycle restarting when the password is changed. An Oracle job is run daily to check for accounts having passwords that will be expiring soon or have already expired. When the password is 10 days from expiration, an email notice is sent to the account contact person (specified when the account is set up) requesting them to change the password. When there are 5 or fewer days left until the password expires, the account contact person will receive an email notice daily, reminding them that the password must be changed. The first time that an account is accessed after the password expires, a five-day grace period begins. If within the grace period the password is not changed, then the account will lock automatically and the Oracle DBA must be contacted to reset the password.

Passwords can be changes by entering the 'ALTER USER' SQL command or by using the password change facility located on the web: https://www.uwex.edu/infosys/oraprod/pass_change/.

Accounts left dormant for 6 months will be deleted unless there are extenuating circumstances.

Account Locking

An account may become locked for one of several reasons: the Oracle DBA has locked the account to prevent access, more than 10 consecutive unsuccessful attempts have been made to access an Oracle account, or the grace period after the account password expired has elapsed. Oracle will not permit connections to an Oracle instance using a locked account. In most cases, the only way to unlock an account is to contact the Oracle DBA.

ColdFusion Data Sources

For all of the Oracle instances, ColdFusion data sources have been set up on the development, test and production ColdFusion servers. They are defined to have the same name as the Oracle instance (e.g. data source D1010X is for the Oracle instance D1010X, etc...). These data sources maintain the Oracle connection. In addition, there are instance generic data sources on each server named ORA_1010X. The instance generic data sources connect to the Oracle instance that matches the ColdFusion server (e.g. ORA_1010X on the CFMX development server maps to D1010X, ORA_1010X on the CFMX test server maps to T1010X, etc...).

It is recommended that variables be defined in a ColdFusion template with the Oracle instance, account name, and password. The template can be included in any templates requiring access to the Oracle database. Using variables will make it easy to change the data source, user, and password, when necessary. The following are two code snippets to illustrate the use of an include file for the variables:

- ```
<!-- data source include template (datasource.cfm) --->
<cfset cDataSource= "P1010X">
<cfset cUserName = "www_account">
<cfset cPassWord = "whateveritis">
```

2. <!-- snippet from application page -->  
<cfinclude template="dataSource.cfm">  
<cfquery datasource=#cDataSource# username=#cUserName# password=#cPassWord#  
    name="qWhateverTable">  
        select column1, column2    from whatevertable  
</cfquery>

## **Tablespaces**

Generally, each account is granted a space quota in both the default and the temporary tablespaces. The default tablespace is where all objects and data are stored. The temporary tablespace is used as an additional temporary area for sorting and processing SQL statements. If there are extenuating disk space requirements, then special tablespaces will be set up for the project and/or individuals. Otherwise, the APPS\_DIO tablespace is the default tablespace for project accounts and the USERS tablespace is the default tablespace for individual accounts. The TEMP tablespace is the temporary tablespace assigned to all accounts.