

Creating the BI CMS and BI Auditing Databases

Chapter

3

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This chapter outlines the steps to create the BI CMS and BI Auditing databases using the provided RFMS/C 1.0.0.0 BI Database Installer, either via the command line or Control-M.

The Installer will create the databases with Oracle TDE applied to the application data tablespace.

Checklist

The following list of items must be completed prior to running the RFMS/C 1.0.0.0 BI Database Installer to create the BI CMS and BI Auditing databases:

- Windows logon account running the RFMS/C 1.0.0.0 BI Database Installer must have administrator and Oracle SYSDBA privileges. If executing via Control-M, make sure that Control-M agent account has such privileges.
- RFMS/C 1.0.0.0 BI Database Installer.
- Database Domain Name, for example, *gfs.state.sbu*.
- Oracle Home directory, for example, *D:\Apps\Oracle\Ora12c*.
- Database name for BI CMS to be created, for example, *BICMSPRD*.
- Database name for BI Auditing to be created, for example, *BIADTPRD*.
- Drive letters for Oracle diagnostic folder, control files, redo log members, data, and temporary database files.
- Read/write permissions on Oracle 12c TDE Wallet folder must be granted to the Oracle service and the account running the Installer.
- The Oracle TDE Wallet folder, if already created, must be empty before running the Installer. The example of the TDE Wallet location for *BICMSPRD* and *BIADTPRD* databases, respectively, are as follows: for network shared path (using UNC):


```
\\gfscdvkwst01\sdmkeystore$\OraWallets\GFSCDSVMDBOARD19\BICMSPRD\Wallet
```


```
\\gfscdvkwst01\sdmkeystore$\OraWallets\GFSCDSVMDBOARD19\BIADTPRD\Wallet
```


- Or, for local path,


```
D:\Apps\Oracle\admin\BICMSPRD\Wallet
```


```
D:\Apps\Oracle\admin\BIADTPRD\Wallet
```

 An AES256 encryption algorithm provided with Oracle 12c TDE SQL commands is used to encrypt the tablespaces. AES256 is an Advanced Encryption Standard (AES), which is a symmetric cipher algorithm defined in the Federal Information Processing (FIPS) standard no. 197, with approved key length or 256 bits.

 Oracle database name can be up to 8 characters. Valid characters are alphanumeric characters, underscore (_), number sign (#), and dollar sign (\$). No other characters are valid. The database name is case insensitive.

 Read/write permissions on the Oracle TDE Wallet folder must be granted to the Oracle service and the account running the Installer.

 The Oracle TDE folder, if already created, must be empty before running the Installer.

 The Oracle TDE Wallet directory is defined by the ENCRYPTION_WALLET_LOCATION parameter in sqlnet.ora under <Oracle Home>\network\admin folder.

Preparing Database Parameters

For the RFMS/C 1.0.0.0 Silent Installation to properly function, the top working folder must be the same across the RFMS/C 1.0.0.0 Database, Application, Report, and Web Servers. Therefore, the example top working folder provided here, for example, D:\temp\RFMSC1000_Installer_Control-M, is the same as the example top working folder provided in the *RFMS/C 1.0.0.0 Technical Notes* in “Appendix D - Silent Installation for RFMS/C Servers”.

➤ Preparing database parameters

1. On RFMS/C database server, extract the RFMS/C 1.0.0.0 BI Database Installer (*RFMSC1000_BIDBInstaller.zip*) into the top working folder, for example, D:\temp\RFMSC1000_Installer_Control-M
2. Locate the database parameter file under RFMSC1000_BIDBInstaller\par folder, for example, D:\Temp\RFMSC1000_Installer_Control-M\RFMSC1000_BIDBInstaller\par, as follows:

Parameter File	Description
BICMS.par	Parameter file for the BI CMS database to be created.
BIADT.par	Parameter file for the BI Auditing database to be created.

3. For the BI CMS database to be created, enter the parameter values in the BICMS.par parameter file as follows:

BI CMS Database Parameter File		
Installer Parameter	Description	Example
ORACLE_HOME	Oracle Home directory	D:\Apps\Oracle\ Ora12c
ORACLE_SID	Database name (up to 8 characters) of the database to be created.	BICMSPRD
DB_DOMAIN	Logical location of the database within the network structure.	gfs.state.sbu
DRV_ADMIN	Drive to store database diagnostics, database creation log, and database initialization parameter file.	D:




All parameters listed are required.



All DRV parameter values require a colon (:) after a drive letter; for example, “D:”.


BI CMS Database Parameter File (Continued)		
Installer Parameter	Description	Example
DRV_CONTROL_1	Drive to store database control file #1.	C:
DRV_CONTROL_2	Drive to store database control file #2.	D:
DRV_CONTROL_3	Drive to store database control file #3.	L:
DRV_REDOLOG_1	Drive to store database redo log member #1.	D:
DRV_REDOLOG_2	Drive to store database redo log member #2.	L:
DRV_DATA	Drive to store database data files.	J:
DRV_TEMP	Drive to store database temporary files.	O:

 “#” marks the comments. “#” and all text to the right on the line are treated as comments and will be ignored.

The box below contains example content of the *BICMS.par* parameter file:

```
#- Database Parameters =====
ORACLE_HOME = D:\Apps\Oracle\Ora12c
ORACLE_SID  = BIADTPRD
DB_DOMAIN   = gfs.state.sbu

DRV_ADMIN   = D:
DRV_CONTROL_1 = C:
DRV_CONTROL_2 = D:
DRV_CONTROL_3 = L:
DRV_REDOLOG_1 = D:
DRV_REDOLOG_2 = L:
DRV_DATA    = J:
DRV_TEMP    = O:
```

 Space is allowed before and after the equal sign (=).

The Installer parameter values are assigned to the following Oracle database initialization parameters as follows:

```
DB_Domain = <DB_DOMAIN>
DB_NAME   = <ORACLE_SID>
DIAGNOSTIC_DEST =
    <DRV_ADMIN>\ORADATA\<ORACLE_SID>\ADMIN
```

```
CONTROL_FILES =
(<DRV_CONTROL_1>\ORADATA\<ORACLE_SID>\CON
TROL\CONTROL01.CTL,
<DRV_CONTROL_2>\ORADATA\
<ORACLE_SID>\CONTROL\CONTROL02.CTL,
<DRV_CONTROL_3>\ORADATA\
<ORACLE_SID>\CONTROL\CONTROL03.CTL)
```

4. Save the *BICMS.par* parameter file under the *RFMSC1000_BIDBInstaller\par* folder.
5. To create the BI Auditing database, enter the parameter values in the *BIADT.par* parameter file as follows:

Installer Parameter	Description	Example
ORACLE_HOME	Oracle Home directory	D:\Apps\Oracle\ Ora12c
ORACLE_SID	Database name (up to 8 characters) of the database to be created.	BIADTPRD
DB_DOMAIN	Logical location of the database within the network structure.	gfs.state.sbu
DRV_ADMIN	Drive to store database diagnostics, database creation log, and database initialization parameter file.	D:
DRV_CONTROL_1	Drive to store database control file #1.	C:
DRV_CONTROL_2	Drive to store database control file #2.	D:
DRV_CONTROL_3	Drive to store database control file #3.	L:
DRV_REDOLOG_1	Drive to store database redo log member #1.	D:
DRV_REDOLOG_2	Drive to store database redo log member #2.	L:
DRV_DATA	Drive to store database data files.	J:
DRV_TEMP	Drive to store database temporary files.	O:

The box below contains example content of the *BICMS.par* parameter file:

```
#- Database Parameters -----
ORACLE_HOME = D:\Apps\Oracle\Ora12c
ORACLE_SID  = BIADTPRD
DB_DOMAIN   = gfs.state.sbu

DRV_ADMIN   = D:
DRV_CONTROL_1 = C:
DRV_CONTROL_2 = D:
DRV_CONTROL_3 = L:
DRV_REDOLOG_1 = D:
DRV_REDOLOG_2 = L:
DRV_DATA    = J:
DRV_TEMP    = O:
```


The Installer will automatically create the following folders, if they do not already exist:

```
<DRV_ADMIN\ORADATA\<ORACLE_SID>\ADMIN
<DRV_CONTROL_1>\ORADATA\
<ORACLE_SID>\CONTROL
<DRV_CONTROL_2>\ORADATA\
<ORACLE_SID>\CONTROL
<DRV_CONTROL_3>\ORADATA\
<ORACLE_SID>\CONTROL
<DRV_REDOLOG_1>\ORADATA
\<ORACLE_SID>\REDO_LOG
<DRV_REDOLOG_2>\ORADATA
\<ORACLE_SID>\REDO_LOG
<DRV_DATA>\ORADATA\<ORACLE_SID>\DATA
<DRV_TEMP>\ORADATA\<ORACLE_SID>\TEMP
```

Save the BIADT.par parameter file under the RFMSC1000_BIDBInstaller\par folder.

Running the Installer via Command Line

The Installer performs the following tasks when it is run from the Command Line:

 Each database took about a half-hour to create in the development environment.

- Verify the parameters in the database parameter file.
- Create the Oracle service for the database.
- Create folders for the Oracle diagnostic, control files, redo logs, data files, temporary files, and TDE Wallet.
- Create the database initialization parameter file.
- Create the database with Oracle TDE applied to the application data tablespace.

The following section provides the steps necessary to create the BI CMS and BI Auditing databases via the Command Line, one instance at a time.

➤ Running the Installer via the Command Line

1. Log in to the **RFMS/C** database server using a Windows account with administrator and Oracle SYSDBA privileges.
2. Open a Windows **PowerShell** with **Run as Administrator**.
3. Change directory to the RFMSC1000_BIDBInstaller folder under the working directory, for example,
D:\temp\RFMSC1000_Installer_Control-M\RFMSC1000_BIDBInstaller

```
PS as Admin> pushd
D:\temp\RFMSC1000_Installer_Control-
M\RFMSC1000_BIDBInstaller
```

4. To create the BI CMS database, execute the BI CMS Installer script as follows:


```
PS as Admin> .\cmd\BICMS_Installer.ps1
```


5. If an error occurs prior to database creation, the exit code will be non-zero with an error message, for example,


```
Database parameter file
"D:\Temp\RFMSC1000_BIDBInstaller\par\BICMS.par"
Line ...: "... .." --> Duplicate "... "
parameter.
Exit Code = 1
```


See “Appendix A - Installer Error Messages” in the “List of Error Messages Prior to Database Creation” on page 70. Correct the problem and rerun the Installer script per step 4 above.

6. If an error occurs during the database creation, the exit code will be non-zero with an error message, for example,

 Running the **PowerShell** script to create the BI CMS and BI Auditing databases one instance at a time is highly recommended. See “Appendix D” and “Known Issue #1” on page 78.

 For errors that occurred prior to database creation, the error message does not begin with “Problem occurs during database creation.”

 For errors that occurred during database creation, the error message begins with “Problem occurs during database creation.”

 Database creation log files are generated in the <DRV_ADMIN>\ORADATA\<ORACLE_SID>\admin\create\1.0.0.0 folder. Oracle error messages in the crdb2.log file that can be safely ignored are listed in “Appendix B: Ignorable Oracle Error Messages” on page 73.

Problem occurs during database creation. Please review error in
 "D:\ORADATA\BICMSPRD\admin\create\1.0.0.0\crdb3.log"
 ” Exit Code = 55

See “Appendix A - Installer Error Messages” in the “List of Error Messages During Database Creation” on page 72. Correct the problem. Remove the unsuccessfully created database as outlined in “Appendix C: Removing Oracle Database” on page 75. Then rerun the Installer script per step 4 above.

7. If the BI CMS database creation is successful, the exit code will be 0 with a success message, for example,

BI CMS database: “BICMSPRD” successfully created.
 Exit Code = 0

8. To create the BI Auditing database, execute the BI Auditing Installer script as follows:

```
PS as Admin> .\cmd\BIADT_Installer.ps1
```

9. If an error occurs prior to database creation, the exit code will be non-zero with an error message, for example,

Database parameter file
 “D:\Temp\RFMSC1000_BIDBInstaller\par\BIADT.par” Line
 ...: “... ..” --> Duplicate “...” parameter.
 Exit Code = 1

See “Appendix A - Installer Error Messages” in the “List of Error Messages Prior to Database Creation” on page 70. Correct the problem and rerun the Installer script in step 8 above.

10. If an error occurs during database creation, the exit code will be non-zero with an error message, for example,

Problem occurred during database creation. Please review error in
 in
 "D:\ORADATA\BIADTPRD\admin\create\1.0.0.0\crdb3.log"
 Exit Code = 55

See “Appendix A - Installer Error Messages” in the “List of Error Messages During Database Creation” on page 72. Correct the problem. Remove the unsuccessfully created database as outlined in “Appendix C: Removing Oracle Database” on page 75. Then rerun the Installer script in step 8 above.

11. If the BI Auditing database creation is successful, the exit code will be 0 with success message, for example,

BI Auditing database: “BIADTPRD” successfully created. Exit Code = 0

Running the Installer via Control-M

The Installer will perform the following tasks when run from Control-M:


- Verify parameters for the database.
- Create the Oracle service for the database.
- Create the folders for Oracle diagnostic, control files, redo logs, data files, temporary files, and TDE Wallet.
- Create the database initialization parameter file.
- Create the database with Oracle TDE applied to the application data tablespace.


This section details the steps necessary to create the BI CMS and BI Auditing databases via Control-M, one instance at a time.

➤ Running the Installer via Control-M

1. Review the items described in the “Checklist” on page 34, and ensure that the Control-M agent Windows account on the *RFMS/C* database server has administrator and Oracle SYSDBA privileges.
2. Prepare the database parameter file as outlined in “Preparing Database Parameters” on page 35.
3. Create the Control-M job for creating the BI CMS database as follows:

Field	Description	Example
Job Name	Control-M Job Name	CREATE DATABASE.BICMS
Command	<i>PowerShell</i> command to create the BI CMS database	powershell D:\temp\RFMSC1000_Installer_Control-M\RFMSC1000_BIDBInstaller\cmd\BICMS_Installer.ps1
Host/Host Group	<i>RFMS/C</i> database server	Gfscrmscdb


 Make sure the Control-M agent account has administrator and Oracle SYSDBA privileges.

 Each database took about a half-hour to create in the development environment.

Field	Description	Example
Run As	Control-M agent Windows account	GFS\CONTROLM
Application	Control-M Application Name	RFMSC
Sub Application	Control-M Sub Application Name	RFMSC

4. Create the Control-M job for creating the BI Auditing database as follows:

Field	Description	Example
Job Name	Control-M Job Name	CREATE DATABASE.BIADT
Command	<i>PowerShell</i> command to create the BI CMS database	powershell D:\temp\RFMSC1000_Installer_Control-M\RFMSC1000_BIDB_Installer\cmd\BIADT_Installer.ps1
Host/Host Group	<i>RFMS/C</i> database server	Gfscrfsbdb
Run As	Control-M agent Windows account	GFS\CONTROLM
Application	Control-M Application Name	RFMSC
Sub Application	Control-M Sub Application Name	RFMSC

 For errors that occurred prior to database creation, the error message does not begin with “Problem occurs during database creation.”

5. Order and run the Control-M jobs listed in step 4 to create the BI CMS and BI Auditing databases, one instance at a time.
6. If an error occurs prior to the database creation, the exit code will be non-zero with an error message, for example,

```
Database parameter file
"D:\Temp\RFMSC1000_BIDBInstaller\par\BICMS.par"
Line ...: "... .." --> Duplicate "... "
parameter. Exit Code = 1
```

See “Appendix A - Installer Error Messages” in the “List of Error Messages Prior to Database Creation” on page 70. Correct the problem and rerun the Control-M job in step 5 above.

- If an error occurs during database creation, the exit code will be non-zero with an error message, for example,

Problem occurs during database creation. Please review error in "D:\ORADATA\BICMSPRD\admin\create\1.0.0.0\crdb3.log"
Exit Code = 55

See "Appendix A - Installer Error Messages" in the "List of Error Messages During Database Creation" on page 72. Correct the problem. Remove the unsuccessfully created database as outlined in "Appendix C: Removing Oracle Database" on page 75. Then rerun the Control-M job per step 5 above.

- If the database creation is successful, the exit code will be 0 with a success message, for example,

BI CMS database: "BICMSPRD" successfully created.
Exit Code = 0

- Verify as in step 5 above that both the BI CMS and BI Auditing databases are successfully created.


Applying Oracle 12C CPU (64-bit) to Databases


The steps outlined in this section for applying Oracle 12c CPU post-installation patch to the databases are for example only. Only the instructions outlined in the latest approved Oracle 12c CPU for Windows (64-bit) should be used. Detailed instructions may vary, depending on each CPU. Always refer to the corresponding Oracle CPU README.html in the latest approved CPU for up to date and detailed instructions.


➤ Applying Oracle 12c CPU (64-bit) post-installation patch


- Log in to the **RFMS/C** database server with a Windows account with Oracle SYSDBA privileges.
- Open a Windows **PowerShell**. Set the ORACLE_HOME environment variable to the Oracle Home location, and change directory to the **OPatch** folder under Oracle Home, for example,


```
PS> $env:ORACLE_HOME="D:\Apps\Oracle\Ora12c"
PS> pushd $env:ORACLE_HOME\Opatch
```

 For errors that occurred during database creation, the error message begins with "Problem occurs during database creation."

 Database creation log files are generated in the <DRV_ADMIN>\ORADATA\<ORACLE_SID>\admin\create\1.0.0.0 folder. Oracle error messages in the crdb2.log file that can be safely ignored are listed in "Appendix B: Ignorable Oracle Error Messages" on page 73.

 Apply the Oracle 12c CPU (64-bit) post-installation patch to the BI CME and BI Auditing databases one at a time.

 Each database took about 10 minutes to run *datapatch* in the development environment.

 If *datapatch* generates the PLS-00201: identifier 'DBMS JAVA.LONG NAME' must be declared error message, refer to "Appendix D" and "Known Issue #2" on page 79.

3. Set the ORACLE_SID environment variable to the BI CMS database, for example,

```
PS> $env:ORACLE_SID="BICMSPRD"
```

4. Log in to the database via SQL*Plus as SYSDBA, and run the following commands to restart the database in upgrade mode:

```
SQL> shutdown immediate
SQL> startup upgrade
SQL> exit
```

5. Open a Windows *PowerShell*, and apply the CPU post-installation patch to the database as follows:

```
PS> .\datapatch -verbose
```

The Oracle SQL Patching tool should display a message similar to the one below, based on the Oracle CPU already applied to Oracle Home, for example, for CPU October 2017,

```
Connecting to database...OK
```

```
.....
```

```
The following patches will be applied:
```

```
26792369 (26792369:WINDOWS ORACLE JAVAVM
COMPONENT BUNDLE PATCH 12.2.0.1.171017)
```

```
26758841 (WINDOWS DB BUNDLE PATCH
12.2.0.1.171017(64bit):26758841)
```

```
.....
```

```
Patch installation complete. Total patches installed: 2
```

```
.....
```

```
Patch 26792369 apply: SUCCESS
```

```
Patch 26758841 apply: SUCCESS
```

```
.....
```

```
SQL Patching tool complete ...
```

6. Log in to the database via SQL*Plus as SYSDBA, and run the following commands to restart database in normal mode:

```
SQL> shutdown immediate
SQL> startup
```

7. In SQL*Plus as SYSDBA, verify the patch application entries as follows:

```
SQL> select
patch_id,version,action,status,action_time,descripti
on from dba_registry_sqlpatch order by action_time;
```

The result should look similar to the following, for example, for CPU October 2017,

PATCH_ID	VERSION	ACTION	STATUS	ACTION_TIME	DESCRIPTION
26792369	12.2.0.1	APPLY	SUCCESS	27-FEB-18 12.58.50.248000 AM	26792369-WINDOWS ORACLE JAVAVM COMPONENT BUNDLE PATCH 12.2.0.1.171017
26758841	12.2.0.1	APPLY	SUCCESS	27-FEB-18 12.58.51.483000 AM	WINDOWS DB BUNDLE PATCH 12.2.0.1.171017(64bit):26758841

8. In SQL*Plus as SYSDBA, verify that there is no invalid database object as follows:

```
SQL> select count(*) from dba_objects where
status!='VALID' ;
```

The invalid object count should be zero. Otherwise, recompile invalid objects as follows:

```
SQL> @?\rdbms\admin\utlrp.sql
```

9. Exit from SQL*Plus.
10. Set the ORACLE_SID environment variable to the BI Auditing database, for example,

```
PS> $env:ORACLE_SID="BIADTPRD"
```

11. Repeat steps 4-9 to apply the CPU post-installation patch to the BI Auditing database.

Resetting Passwords

This section outlines the steps to reset the passwords for Oracle systems, BI CMS and BI Auditing application database accounts, the Oracle TDE Wallet.

For security purposes, passwords for the following Oracle default accounts are automatically reset by the RFMS/C 1.0.0.0 BI Database Installer. These accounts are also automatically locked and expired by the Installer:

- ANONYMOUS
- APPQOSSYS
- AUDSYS
- DBSFUSER
- DBSNMP
- DIP
- GGSYS
- GSMADMIN_INTERNAL
- GSMCATUSER
- GSMUSER
- ORACLE_OCM
- OUTLN
- REMOTE_SCHEDULER_AGENT
- SYS\$UMF
- SYSBACKUP
- SYSDG
- SYSKM
- SYSRAC
- XDB

Passwords are reset for the following database accounts:

Account	Description
SYS	Oracle SYS account to perform database administration tasks
SYSTEM	Oracle SYSTEM account to perform database administration tasks
BICMS	BI CMS schema account in BI CMS database
BIADT	BI Auditing schema account in BI Auditing database

BI CMS Database

➤ Resetting passwords for the BI CMS database

1. Log in to the **RFMS/C** database server with a Windows account with Oracle SYSDBA privileges.
2. Open a Windows **PowerShell**, and set ORACLE_SID to BI CMS database, for example,

```
PS> $env:ORACLE_SID="BICMSPRD"
```

3. Log in to SQL*Plus as SYSDBA, and run the following commands to change the passwords for the SYS, SYSTEM, and BI CMS application accounts, respectively:

```
SQL> alter user SYS identified by "<SYS password>";
SQL> alter user SYSTEM identified by "<SYSTEM
password>";
SQL> alter user BICMS identified by "<BICMS
password>";
```

Substitute the <SYS password>, <SYSTEM password>, and <BICMS password> with appropriate passwords for SYS, SYSTEM, and BICMS database accounts, respectively.


4. Run the following commands to change the password for the TDE Wallet:

```
SQL> administer key management alter keystore
password identified by ",Password123" set "<TDE
Wallet password>" with backup using '<TDE Wallet
Backup Identifier>';
```

Substitute the <TDE Wallet password> with the appropriate password. Also substitute <TDE Wallet Backup Identifier> with the identifier for the wallet backup file, for example, *MEK* (for Master Encryption Key).

5. If the database is accidentally restarted, the following error message appears. Follow the instructions below to fix the problem:

```
ORA-28417: password-based keystore is not open
```

 <TDE Wallet Backup Identifier> is part of the wallet backup file name. For example, if MEK is used for the <TDE Wallet Backup Identifier>, the wallet backup file will be *ewallet_<Date Time>_MEK.p12*.

Shut down the database, rename the TDE auto-login wallet file (*cwallet.issso*) in the TDE Wallet folder (for example, rename to *cwallet_ORG.sso*), restart the database, and run the following command:

```
SQL> administer key management set keystore open
identified by ",Password123";
```

Rerun the command to change the password for the TDE Wallet per step 4 above. Then rename the auto-login wallet file in the TDE Wallet folder back to the original, for example, rename *cwallet_ORG.sso* file back to *cwallet.issso*.

6. Exit from SQL*Plus.

BI Auditing Database

➤ Resetting passwords for the BI Auditing database

1. Log in to the **RFMS/C** database server with a Windows account with Oracle SYSDBA privileges.
2. Open Windows **PowerShell**, and set ORACLE_SID to BI Auditing database, for example,

```
PS> $env:ORACLE_SID="BIADTPRD"
```

3. Log in to SQL*Plus as SYSDBA, and run the following commands to change the passwords for SYS, SYSTEM, and BI Auditing application accounts, respectively:

```
SQL> alter user SYS identified by "<SYS password>";
SQL> alter user SYSTEM identified by "<SYSTEM
password>";
SQL> alter user BIADT identified by "<BIADT
password>";
```

Substitute <SYS password>, <SYSTEM password>, and <BIADT password> with the appropriate passwords for SYS, SYSTEM, and BI Auditing application accounts, respectively.

- Run the following commands to change the password for the TDE Wallet:

```
SQL> administer key management alter keystore
password identified by ",Password123" set "<TDE
Wallet password>" with backup using '<TDE Wallet
Backup Identifier>';
```

Substitute the <TDE Wallet password> with the appropriate password. Also substitute the <TDE Wallet Backup Identifier> with the identifier for the wallet backup file, for example, *MEK* (for Master Encryption Key).

- If the database is accidentally restarted, the following error message appears. Follow the instructions below to fix the problem:


ORA-28417: password-based keystore is not open

Shut down the database, rename the TDE auto-login wallet file (*ewallet.issso*) in the TDE Wallet folder (for example, rename to *ewallet_ORG.sso*), restart the database, and run the following command:

```
SQL> administer key management set keystore open
identified by ",Password123";
```

Rerun the command to change the password for the TDE Wallet per step 4 above. Then rename the auto-login wallet file in the TDE Wallet folder back to the original, for example, rename *ewallet_ORG.sso* file back to *ewallet.issso*.

- Exit from SQL*Plus.

 <TDE Wallet Backup Identifier> is part of the wallet backup file name. For example, if *MEK* is used for the <TDE Wallet Backup Identifier>, the wallet backup file will be *ewallet_<Date Time>_MEK.p12*.

Securing Database Folder & Service Registry

Refer to the *RFMS/C 1.0.0.0 Folder Permission Guide* in the section titled “Setting RFMS/C Folder Permission” for instructions on securing Oracle database Folder & Service Registry for the BI CMS and BI Auditing databases.

To create a snapshot as the **2nd CheckPoint (Golden Image)**, follow instructions in the *RFMS/C 1.0.0.0 Technical Notes* in “Appendix C – Creating and Restoring RFMS/C 1.0.0.0 Golden Images”.

