

Migrating Oracle E-Business  
Suite to Oracle Exadata Database  
Machine Using Oracle Data Pump

*Oracle Maximum Availability Architecture White Paper*  
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# Maximum Availability Architecture

Oracle Best Practices For High Availability

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## Introduction

Oracle Maximum Availability Architecture (MAA) [1] is Oracle's best practices blueprint for implementing Oracle high-availability technologies. Oracle Exadata Database Machine provides an optimal platform for all database workloads. Both Oracle E-Business Suite release 11*i* and release 12 are supported on the Oracle Exadata Database Machine.

There are several techniques for migrating the E-Business Suite database to Oracle Exadata Database Machine, as outlined in My Oracle Support (MOS) ID [1133355.1](#), “A Roadmap for Migrating Oracle E-Business Suite to the Oracle Exadata Database Machine.” This paper guides you through the steps to perform an E-Business Suite database migration using Oracle Data Pump.

Oracle Data Pump can be used to migrate an Oracle database to a new platform, and to move from an older release of the database to a newer release. Using Oracle Data Pump to move an E-Business Suite database is a well-documented and tested procedure, and can be used to migrate your database to the Oracle Exadata Database Machine and upgrade it to Oracle Database 11g release 2 (11.2) in the same exercise.

To use Oracle Data Pump, the existing source system database must be Oracle Database 10g release 10.2 or higher. This paper illustrates an example where the source system database is release 11.2. E-Business Suite releases certified on the Oracle Exadata Database Machine configuration of OEL5 with Oracle Enterprise Edition release 11.2 are:

- 11.5.10.2 (11i)
- 12.0
- 12.1

These MOS documents provide the foundational steps for using Oracle Data Pump with the E-Business Suite:

- *Export/Import Process for Oracle E-Business Suite Release 12 Database Instances Using Oracle Database 11g Release 1 or 11g Release 2* [ID [741818.1](#)]
- *Export/import notes on Applications 11i Database 11g* [ID [557738.1](#)]

In addition to the steps outlined in the MOS notes, migrating to the Oracle Exadata Database Machine involves additional steps to configure Oracle RAC and Oracle ASM, and implement Oracle Exadata Database Machine best practices. The additional steps are:

- Incorporate Oracle ASM, Oracle RAC, and Oracle Exadata Database Machine best practice configuration parameters in the target database creation script.
- Create an 11.2 target database that uses Oracle ASM, Oracle RAC and a server parameter file (SPFILE).
- Verify the required operating system packages.

- Verify that the Oracle Exadata Database Machine best practices are in place with the Database Machine Health Check.
- Configure Huge Pages.
- Use the PARALLEL option on the export and import and capturing timings.
- Configure the target system for Oracle E-Business Suite to work in an Oracle RAC environment. For further background information, see “Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 12” [ID [823587.1](#)].

The Oracle E-Business Suite Vision database that is part of the Oracle E-Business Suite Rapid Install was used for this example. The application-tier nodes remain the same as part of this example and are re-directed to the new database on the Oracle Exadata Database Machine using Autoconfig.

In this paper, the steps in MOS ID [741818.1](#) were followed to migrate a release 11.2 database for an E-Business Suite Release 12 system, adding in the above steps where needed. **The extra steps have been highlighted between double asterisks (\*\* <extra step title> \*\*) to help you identify where in the process they should be executed.** If you are migrating E-Business Suite release 11i, then you should consult MOS ID [557738.1](#). Executing this process at your site will involve a similar exercise and that is to take the appropriate core E-Business Suite Import/Export note and add in the appropriate steps.

## Document Conventions

| CONVENTION       | MEANING   |
|------------------|---|
| Application Tier | Machines running Forms, Web, Concurrent Processing and other servers. Sometimes called middle tier.   |
| Database Tier    | Machines running an Oracle E-Business Suite database.   |
| oracle           | User account that owns the database file system (database ORACLE_HOME and files).   |
| CONTEXT_NAME     | The CONTEXT_NAME variable specifies the name of the Applications context that is used by Autoconfig. The default is <SID>_<short hostname>.   |
| CONTEXT_FILE     | Full path to the Applications context file on the application tier or database tier. The default locations are as follows.<br>Application tier context file:<br><INST_TOP>/appl/admin/CONTEXT_NAME.xml<br>Database tier context file:<br><Database ORACLE_HOME>/appsutil/<CONTEXT_NAME>.xml |
| Monospace Text   | Represents command line text. Type such a command exactly as shown, excluding prompts such as '% '.   |
| < >              | Text enclosed in angle brackets represents a variable. Substitute a value for the variable text. Do not type the angle brackets.  |
| \                | On UNIX, the backslash character can be entered at the end of a command line to indicate continuation of the command on the next line.  |

## Preparation

Preparing properly for the migration will give you the necessary knowledge and confidence to complete a successful migration. While this is a migration, upgrade resources are also referenced as much of their content applies to a migration as well, especially if the source release is less than release 11.2. Create a test plan that includes the best practices outlined in the Oracle Database 11g Release 2 Upgrade Companion MOS ID [785351.1](#), and the following additional practices:

- Backup the source system and application tier.
- Preserve source system performance baseline information. See [Upgrade to 11g Performance Best Practices](#) for details.
- Stress test with real-life data and workloads.
- Rehearse the migration and fallback procedures.

In addition to the above references, there are references throughout this paper to help you achieve a successful migration.

## Known Issues & Limitations

- **Data Pump NETWORK\_LINK Option**

The Data Pump NETWORK\_LINK option cannot be used with Oracle E-Business Suite due to the restrictions listed in the *Oracle Database Utilities* [8] documentation for the NETWORK\_LINK option:

**Data Pump Export**

- Network exports do not support LONG columns. - Oracle E-Business Suite contains many LONG columns.

**Data Pump Import**

- Network imports do not support LONG columns. - Oracle E-Business Suite contains many LONG columns.
- Network imports do not support the use of evolved types. – Evolved types are advanced or user-defined data types and Oracle E-Business Suite contains many of these.

## Using Oracle Data Pump

Complete details for Oracle Data Pump can be found in the “[Oracle Database Utilities, 11g Release 2 \(11.2\)](#)” guide. As detailed in MOS ID [741818.1](#), the high-level steps for migrating the Oracle E-Business Suite database to the Oracle Exadata Database Machine include the following:

1. [Preparing the Source System](#)

This step ensures that the required patches are installed, generates the target database creation script, records any advanced queue settings and some other general preparation.

2. [Preparing the Target Database and Nodes](#)

This section describes how to create the empty target database with Oracle RAC and ASM and populate it with all of the required system objects prior to running import. This section also discusses deciding on using a network file system or using the Oracle Database File System (DBFS) for the export dump files.

3. [Exporting the Source Database](#)

This section describes how to create your export files and capture important information that is required to import your database. This is the step where the outage begins.

4. [Importing](#)

This section describes how to use the Oracle Data Pump import utility to load the Oracle Applications data into the target database

5. [Updating the Imported Database](#)

This section describes how to recreate the database objects and relationships that are not handled by the Oracle Data Pump export (expdp) and import (impdp) utilities. This section also details re-configuring Oracle E-Business Suite to utilize load balancing for the application connections.

6. [Further Configuration](#)

This section describes how to set up load balancing parallel concurrent processing.

This example does not include any unnecessary steps that are for pre-release 11.2 source systems. It does include additional details related to configuring Oracle RAC and Oracle ASM with Oracle E-Business Suite on the target Oracle Exadata Database Machine. Thus, if your source system database is running less than release 11.2, then be sure to carefully review MOS ID [741818.1](#) because there are steps specific to releases 10.2 and 11.1 in MOS ID [741818.1](#) that are not covered in this case study. MOS ID [741818.1](#) should still be reviewed for a release 11.2 source database, but this example case study shows the complete set of steps for that case.

This document assumes that the application server tiers are not replaced. Creating new application server tiers for the target environment has to be done either before starting or after completing all the steps in this document.

The details of the system environment can be found in the appendix at [Environment Details](#). Standard Oracle E-Business Suite environment variables will be referenced. The Oracle E-Business Suite environment setup is done by sourcing the `<APPL_TOP>/<CONTEXT_NAME>.env` file. Is equal to the ORACLE\_SID and short hostname (no domain) concatenated with an underscore, for example: VISMIG1\_dscgigdb03.

## Preparing the Source System

### 1. Apply Prerequisite Patches

For this example, an Oracle E-Business Suite release 12.1 rapid install with the Vision database was performed. That installs a file-system based database with Oracle Database Enterprise Edition release 11.1.0.7. Prior to the export process, the source system database was upgraded to Oracle Database release 11.2, and the steps in “Interoperability Notes Oracle E-Business Suite Release 12 with Oracle Database 11g Release 2 (11.2.0)”, ID [1058763.1](#) were followed.

**This MOS ID [1058763.1](#)**, “*Interoperability Notes Oracle E-Business Suite Release 12 with Oracle Database 11g Release 2 (11.2.0)*”, should be consulted for any updates and it will also be used to set up the target system 11.2 database ORACLE\_HOME. Thus, the details of what was done for that note in regard to the database will be included in the “[Preparing the Target Database Instance](#)” section.

### 2. Apply the Applications consolidated export/import utility patch

Apply patch [13023290](#) to the source administration server node. This patch provides several SQL scripts that facilitate exporting and importing an Applications database instance.

### 3. **\*\* Apply Export Domain Index patch \*\* (conditional)**

If your source database release is prior to release 11.2, then download and apply database generic patch 6460304 to the source system database per MOS ID, “Data Pump Export of Small Schema Is Taking Hours Instead Of Minutes [ID [786068.1](#)].”

### 4. **\*\* Apply XLA performance patch \*\***

Download and apply Patch 13344804:R12.XLA.B as instructed in MOS [1433227.1](#).

### 5. Create a working directory

For this example a working directory named `/ebs/expimp` was created on network file system (NFS) storage. This working directory will contain all generated files and scripts required for the complete process. To use NFS you must ensure the correct mount options

are used. For this example, all of the following systems were set up with an NFS mount point:

- a. The source database
- b. The target database
- c. The primary applications node

The NFS mount point was set up on each system, as follows:

- As `root` user, execute the following:

```
mkdir /ebs
chown oracle:dba /ebs
mount dscbbg03:/export2/ /ebs -o rsize=32768,wsiz=32768,hard,actimeo=0,nolock
```

- As `oracle` user (the software owner):

```
mkdir /ebs/expimp
```

This mount point will be used on all three systems: the source database, the primary applications node, and the target database node. For details about the system environment, see the appendix at [Environment Details](#). For further details about NFS mounting Oracle files, see MOS ID [359515.1](#).

An alternative to using NFS storage is to use the Oracle Database File System (DBFS) on the target Oracle Exadata Database Machine to hold the Oracle Data Pump exported dump files. This DBFS file system can also be mounted remotely. To setup and configure DBFS, see [Oracle Database SecureFiles and Large Objects Developer's Guide 11g Release 2 \(11.2\)](#) and see MOS ID [1054431.1](#) to set up DBFS on the Oracle Exadata Database Machine.

## 6. Generate target database instance creation script `aucrdb.sql`

The target database instance must be created with the same tablespace structure as the source database instance. The export/import patch, [13023290](#), provides the `auclondb.sql` script that generates the `aucrdb.sql` script, which you use to create the target database instance with the appropriate tablespace and file structure. The script converts all tablespaces, except for `SYSTEM`, to locally managed tablespaces with auto segment space management, if they are not already so.

On the source administration server node, use SQL\*Plus to connect to the database as `SYSTEM` and run the `$/AU_TOP/patch/115/sql/auclondb.sql` script. It creates `aucrdb.sql` in the current directory.

```
cd /ebs/expimp
sqlplus system/welcome1 @$AU_TOP/patch/115/sql/auclondb.sql 11
```

## 7. Record Advanced Queue settings-

Advanced Queue settings are not propagated in the target database during the export/import process. Therefore, you must record them beforehand and enable them in



the target database instance afterwards. The export/import patch, [13023290](#), contains `auque1.sql`, which generates a script called `auque2.sql`. You can use `auque2.sql` to enable the settings in the target database instance.

- Copy the `auque1.sql` script from the `$AU_TOP/patch/115/sql` directory on the source administration server node to the working directory in the source database server node.
 

```
cp $AU_TOP/patch/115/sql/auque1.sql /ebs/expimp
```
- On the source database server node, as the owner of the source database server file system and database instance, use SQL\*Plus to connect to the source database as `sysdba` and run the `auque1.sql` script. It generates `auque2.sql`.
 

```
sqlplus "/" as sysdba" @auque1
```

#### 8. Create parameter file for tables with long columns (conditional for 10g source database)

This step was not used in this example, but if the source database is Oracle Database 10g Release 2, then tables with long columns may not propagate properly when using Data Pump. Therefore, they have to be migrated separately using the traditional export/import utilities.

- Copy the `aulong.sql` script from the `$AU_TOP/patch/115/sql` directory on the source administration server node to the working directory in the source database server node.
- On the source database server node, as the owner of the source database server file system and database instance, use SQL\*Plus to connect to the source database as `sysdba` and run the `aulong.sql` script. It generates `aulongexp.dat`.

```
$ sqlplus /nolog
SQL> connect system/;
SQL> @aulong.sql
```

#### 9. Remove Rebuild Index Parameter in Spatial Indexes

Ensure that you do not have the rebuild index parameter in the spatial indexes. To see if you have any rebuild index parameters, on the source database server node, as the owner of the source database server file system and database instance, use SQL\*Plus to connect to the source database as `SYSDBA` and run the following command:

```
sqlplus "/" as sysdba"
SQL> select * from dba_indexes
where index_type='DOMAIN'
and upper(parameters) like '%REBUILD%';
```

If any rows are returned, then use SQL\*Plus to connect to the source database as the owner of the index and run the following command:

```
SQL> alter index <index_name> rebuild <parameters>
```

In the previous command, the parameters are dependent on the source index. See the [Oracle Database SQL Language Reference](#) guide for reference information.

## Preparing the Target Database and Nodes

### 1. Oracle Exadata Database Machine Best Practices and Health Check

- Review the Oracle Exadata Database Machine best practices in MOS ID [1187674.1](#), “*Master Note for Oracle Database Machine and Exadata Storage Server.*”
- If the Oracle Exadata Database Machine health has not been verified yet, then follow MOS ID [1070954.1](#), “*Database Machine Health Check.*”
- Review the MAA paper, “[Oracle E-Business Suite on Exadata.](#)”

### 2. Verify Oracle E-Business Suite Required Packages

For the latest list of required packages, also see MOS ID [761566.1](#), “*Oracle Applications Installation and Upgrade Notes Release 12 (12.1.1) for Linux x86-64.*”

### 3. Prepare the target database Oracle 11g Oracle home

#### a. Install a target database Oracle 11g Oracle home (conditional)

Creating a new ORACLE\_HOME is optional because you can use the existing ORACLE\_HOME that is installed with the Oracle Exadata Database Machine. Each Oracle E-Business Suite database must have a dedicated ORACLE\_HOME and sharing an Oracle E-Business Suite ORACLE\_HOME with any other application is not allowed

Starting with the first patch set for Oracle Database 11g Release 2 (11.2.0.2), Oracle Database patch sets are full installations of the Oracle Database software. In past releases, Oracle Database patch sets consisted of a set of files that replaced files in an existing Oracle home. Beginning with Oracle Database 11g Release 2, patch sets are full installations that replace existing installations. See “Important Changes to Oracle Database Patch Sets Starting with 11.2.0.2” [MOS ID [1189783.1](#)] for more details.

The software can be downloaded from My Oracle support: patch [10098816](#), making sure to select the Linux x86-64 platform.

Install the new 11.2.0.2 ORACLE\_HOME set of software on the target Oracle Exadata Database Machine and make sure to choose the following options:

- Install Software Only
- Real Application Clusters database installation and select all RAC nodes

## b. Apply Prerequisite Patches

- i. Follow MOS ID [888828.1](#), “Database Machine and Exadata Storage Server 11g Release 2 (11.2) Supported Versions” to ensure the latest Oracle Database machine patches are applied.

This will include the latest Opatch version (see “Opatch - Where Can I Find the Latest Version of Opatch? [ID [224346.1](#)].”

In addition to installing a new 11.2 ORACLE\_HOME, MOS ID [1392527.1](#) and [1058763.1](#) must be followed for an up to date list of E-Business related 11.2 database patches. Since the application tier patches were already applied previously when the source system database was upgraded to 11.2, applying the required application tier patches from [1058763.1](#) should not be necessary now. If you did not previously apply the application tier patches listed under “[Apply Prerequisite Patches](#)” then you should do that now.

- ii. Check and apply the latest 11.2 Patch Set Updates and Exadata patches, see “Oracle Recommended Patches -- Oracle Database” [ID [756671.1](#)]. Patch Set Updates also include the latest Critical Patch Update (CPU). Note that some of the patches listed in MOS ID [1058763.1](#) may already be part of the latest PSU or CPU and included with the latest Exadata patch bundle that is described in MOS ID [888828.1](#) and [1392527.1](#).
- iii. If you are using Oracle release 11.2.0.1 then apply patch [8604502](#) to ensure that index imports use the PARALLEL import setting correctly. See “DATAPUMP IMPORT DOESN'T USE MULTIPLE PARALLEL PX PROCESSES FOR INDEX CREATION [ID [1081069.1](#)].” This patch is included in release 11.2.0.2 and later releases.

### iv. **\*\* Apply Object Grants Performance patch \*\***

Download and apply database generic patch 10195109 to the target system. This patch supersedes patch 10185319 and fixes an issue with the performance of importing grant objects. Without this patch each time a grant is imported it makes a reconnection to the database user. See MOS ID [1267951.1](#), “Data Pump Import (impdp) is Very Slow at Object Grants.”

## c. Install the Database Examples

The examples CD install is needed because it contains all the localization files needed for Oracle Text.

- i. Download the software from [http://download.oracle.com/otn/linux/oracle11g/R2/linux.x64\\_11gR2\\_examples.zip](http://download.oracle.com/otn/linux/oracle11g/R2/linux.x64_11gR2_examples.zip)

- ii. Follow the installation steps in the “[Database Examples Installation Guide](#)” in chapter 3 to install in the Oracle Database 11g Release 2 ORACLE\_HOME on each target database node.

**d. Create the nls/data/9idata directory**

On each of the target system database nodes 11.2 ORACLE\_HOME’s execute the following:

```
perl $ORACLE_HOME/nls/data/old/cr9idata.pl
```

This will create the \$ORACLE\_HOME/nls/data/9idata directory, which will be set in the default database environment file, \$ORACLE\_HOME/<\${ORACLE\_SID}>\_short-hostname>.env, in the ORA\_NLS10 variable.

**4. Create and prepare the Target init.ora File**

The initialization parameter file (init.ora) is located in the \$ORACLE\_HOME/dbs directory on the source database server node. Copy that file to the Oracle 11g \$ORACLE\_HOME/dbs directory on the target database server node.

Refer to MOS article, “Database Initialization Parameters for Oracle Applications Release 12” [ID [396009.1](#)] and update the init.ora file with any necessary changes. You may also need to update initialization parameters involving the db\_name, control\_files, and directory structures.

Ensure that the undo\_tablespace parameter in the initialization parameter file of the target database instances match with the default undo tablespace set in the [aucrdb.sql](#) script.

Ignore the initialization parameters that pertain to the native compilation of PL/SQL code. You will be instructed to add them later, if necessary.

1. Copy the source system (dscbac08) init.ora file from the \$ORACLE\_HOME/dbs directory to the target system.

On the target system (dscgigdb03):

```
cd $ORACLE_HOME/dbs
scp dscbac08:/ebs/VISSI/db/tech_st/11.2.0/dbs/initVISSI.ora
initVISMIG1.ora
```

2. Edit the file to change file system paths with the new database name of VISMIG, the appropriate Oracle ASM disk group and add Oracle RAC parameters. The resulting file is included in the appendix at [Target Database Starting Parameter File](#).
3. Note that later Linux HugePages will be configured. The Automatic Memory Management feature, enabled by the MEMORY\_TARGET / MEMORY\_MAX\_TARGET database parameters, is incompatible with the use of HugePages. Do not set these parameters. The Automatic Shared Memory Management feature, enabled by setting SGA\_TARGET, is compatible with HugePages.

Additionally, to ensure the entire SGA uses HugePages, the USE\_LARGE\_PAGES database parameter should be set to 'ONLY'. This is illustrated in the “[Target Database Parameter File](#)” section. Also see MOS [1392497.1](#).

Starting with Oracle Database 11.2.0.2, a message is logged to the database alert log when HugePages are being used, for example:

```
***** Huge Pages Information *****
Huge Pages memory pool detected (total: 18482 free: 17994)
DFLT Huge Pages allocation successful (allocated: 4609)
*****
```

For further details about database parameter settings, see MOS ID [396009.1](#), “Database Initialization Parameters for Oracle Applications Release 12.”

#### 5. Create a working directory (conditional)

If you are not using an NFS mounted file system or DBFS, as discussed in the “Preparing the Source System” section under “[Create a working directory](#),” then create a new directory:

```
$ mkdir /u01/expimp
```

#### 6. \*\* Edit the target database instance creation script aucrdb.sql \*\*

Edit the script created in “[Generate target database instance creation script aucrdb.sql](#)” and change it as listed in the bullet items below. You can also consolidate tablespace datafiles into a single or minimal number of files, if desired. For example, if a tablespace has three datafiles of size 5G due to the fact that a default E-Business Suite install does not enable AUTOEXTEND, then you can consolidate those into a single 15G datafile.

A sample of a modified aucrdb.sql script is in the appendix at [Modified aucrdb.sql Script](#).

The changes to the original are:

- Added AUTOEXTEND. Note that you can also add the 'MAXSIZE <n>' clause to the 'AUTOEXTEND ON' clause if you want to limit the extension size.
- Datafile paths were '?/dbf/<datafile-name>'. The target database will be VISMIG and use the already created ASM disk groups of +DATA and +RECO.
- The LOGFILE clause was modified to multiplex redo logs in both disk groups, +DATA and +RECO.
- The uniform extent size of 128K was removed in favor of the default extent management method, AUTOALLOCATE.
- DDL to create the second UNDO tablespace was added. An UNDO tablespace must be added for each instance. In this example there are two database instances on the target system.
- For further background see “Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 12” [ID [823587.1](#)].

## 7. \*\* Set Up the Database Listeners \*\*

See MOS ID [823587.1](#) under section “3.3 Listener Configuration in 11gR2” for details about setting up a listener.

1. Set your environment to the new target database ORACLE\_HOME. Thus, from [Environment Details](#):

```
ORACLE_HOME /u01/app/oracle/product/11.2.0/ebmig
ORACLE_SID=VISMIG1
PATH=$ORACLE_HOME/bin:$PATH
```

2. Run netca and create the VISMIG listener selecting **Cluster Configuration**. For this example the listener was named LISTENER\_VISMIG. Use a new listener port as well. For this example port 1524 was used. This will create a listener on each Oracle RAC node with the same name and add it to the Oracle RAC Oracle Cluster Registry (OCR). Optionally, you can use srvctl, as shown in MOS ID [823587.1](#).
3. Edit \$ORACLE\_HOME/network/admin/listener.ora on all nodes and add a static SID entry. See the example in the appendix at [Initial listener.ora Files](#).

4. Reload the listener on all nodes

```
lsnrctl reload listener_vismigexport ORA_NLS10=
```

5. Show the status of the listener to make sure it is running

```
lsnrctl status LISTENER_VISMIG

LSNRCTL for Linux: Version 11.2.0.2.0 - Production on 10-JUN-2010 09:52:04

Copyright (c) 1991, 2009, Oracle. All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC) (KEY=LISTENER_VISMIG)))
STATUS of the LISTENER
-----
Alias                LISTENER_VISMIG
Version              TNSLSNR for Linux: Version 11.2.0.2.0 -
Production
Start Date           10-JUN-2010 09:51:30
Uptime               0 days 0 hr. 0 min. 34 sec
Trace Level          off
Security              ON: Local OS Authentication
SNMP                 OFF
Listener Parameter File
/u01/app/oracle/product/11.2.0/ebmig/network/admin/li
stener.ora
Listener Log File
/u01/app/oracle/diag/tnslsnr/dscgigdb03/listener_vismi
g/alert/log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=LISTENER_VISMIG)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=10.204.74.168) (PORT=1524)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=10.204.77.181) (PORT=1524)))
The listener supports no services
The command completed successfully
```

## 8. Create the Target Database

1. Ensure that the environment of your session on the target database system is set to the new ORACLE\_SID of VISMIG1 and the ORACLE\_HOME and ORA\_NLS10 are also set to the target 11.2 location.

```
export ORACLE_HOME=/u01/app/oracle/product/11.2.0/ebsmig
export ORACLE_SID=VISMIG1
export ORA_NLS10=$ORACLE_HOME/nls/data/9idata
export PATH=$ORACLE_HOME/bin:$PATH
```

2. Using the edited script from [Modified aucrdb.sql Script](#) and the parameter file from [Target Database Starting Parameter File](#), create the database.

```
cd /ebs/expimp
sqlplus "/" as sysdba"
SQL> spool aucrdb.log;
SQL> startup nomount;
SQL> @aucrdb.sql
SQL> exit;
```

## 9. Copy the Database Preparation Scripts from the Source Administration Server

The export/import patch, patch [13023290](#), that you applied to the source administration server node in “[Apply the Applications consolidated export/import utility patch](#)” contains four scripts that are needed on the target database server node. Copy the following files from the \$AU\_TOP/patch/115/sql directory of the source administration server node to the working directory in the target database server node: audb1120.sql, ausy1120.sql, aujv1120.sql, and aumsc1120.sql.

These files were copied earlier in the “[Preparing the Source System](#)” section under the “[5. Record Advanced Queue settings](#)” step, which copied all files from the source administration server \$AU\_TOP/patch/115/sql directory to the /ebs/expimp NFS mounted file system.

As you run each of the next steps, note the following:

- The remarks section at the beginning of each script contains additional information.
- Each script creates a log file in the current directory.
- For sample output for the scripts see the [Database Preparation Script Output](#) section of the appendix.

## 10. Set up the SYS schema

```
sqlplus "/" as sysdba" @audb1120
```

## 11. Set up the SYSTEM schema

```
sqlplus system/welcome1 @ausy1120
```

## 12. Install Java Virtual Machine

```
sqlplus system/welcome1 @aujv1120
```

### 13. Install other required components

```
sqlplus system/welcome1 @aumsc1120.sql FALSE SYSAUX TEMP
```

### 14. Set CTXSYS parameter

```
sqlplus "/ as sysdba"
SQL> exec ctxsys.ctx_admin.set_parameter('file_access_role', 'public');
```

### 15. Disable automatic gathering of statistics

Copy \$APPL\_TOP/admin/adstats.sql from the administration server node to the target database server node. Use SQL\*Plus to connect to the database as SYSDBA and use the following commands to put the database in restricted mode and run adstats.sql:

```
$ sqlplus "/ as sysdba"
SQL> alter system enable restricted session;
SQL> @adstats.sql
$ sqlplus "/ as sysdba"
SQL> alter system disable restricted session;
SQL> exit;
```

### 16. \*\* Set up SPFILE on the Target Database Servers \*\*

Execute these commands on the first database server node, dscgigdb03.

- Set CLUSTER\_DATABASE=TRUE in the database parameter file, \$ORACLE\_HOME/dbs/initVISMIG1.ora
 

```
*.cluster_database=true
```
- Create a backup copy of the current database parameter file to a .pfile file
 

```
cp $ORACLE_HOME/dbs/initVISMIG1.ora $ORACLE_HOME/dbs/initVISMIG1.pfile2
```
- Create the SPFILE
 

```
SQL> create spfile='+DATA/vismig/spfilevismig.ora' from
pfile='$ORACLE_HOME/dbs/initVISMIG1.pfile2';

File created.
```
- Create database parameter file, \$ORACLE\_HOME/dbs/initVISMIG1.spfile, that points to the new SPFILE
 

```
spfile='+DATA/vismig/spfilevismig.ora'
```
- Copy the new .spfile to the database parameter file
 

```
cp $ORACLE_HOME/dbs/initVISMIG1.spfile $ORACLE_HOME/dbs/initVISMIG1.ora
```
- Restart the database
 

```
SQL> shutdown immediate
SQL> startup
```
- Copy the database parameter file to the other node(s) with the appropriate name. In this case study, dscgigdb04 is the second Oracle RAC node (see [Environment Details](#) for details).
 

```
scp initVISMIG1.ora dscgigdb04:`pwd`/initVISMIG2.ora
```



```
initVISMIG1.ora          100%   39    0.0KB/s   00:00
```

- Restart the database on the other nodes so they will use the SPFILE.

#### 17. \*\* Create Password File on Each node \*\*

```
cd $ORACLE_HOME/dbs
orapwd file=orapw${ORACLE_SID} password=welcome1
```

#### 18. \*\* Setup Oracle RAC \*\*

1. To support use of Oracle Database Configuration Assistant (DBCA), Oracle Enterprise Manager discovery and monitoring, then add the database and ORACLE\_SID to /etc/oratab on each node. For example:

```
VISMIG:/u01/app/oracle/product/11.2.0/ebmig:N
On dscgigdb03: VISMIG1:/u01/app/oracle/product/11.2.0/ebmig:N
On dscgigdb04: VISMIG2:/u01/app/oracle/product/11.2.0/ebmig:N
```

2. Ensure an undo tablespace exists for each database instance and add to the [database parameter file](#):

```
select tablespace_name from dba_tablespaces where contents='UNDO';
TABLESPACE_NAME
-----
UNDO_TBS1
UNDO_TBS2
```

If you need to create an undo tablespace, then an example statement is:

```
CREATE UNDO TABLESPACE UNDO_TBS2
DATAFILE '+DATA' SIZE 26508M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL;
```

3. Create an additional redo thread and redo logs for each database instance:

- a. Get the redo log size and maximum group number
 

```
SQL> select distinct bytes/1048576 from v$log;
```

```
BYTES/1048576
-----
1024
```

```
SQL> select max(group#) from v$log;
```

```
MAX(GROUP#)
-----
3
```

- b. Add redo logs for other thread or threads

```
alter database
add logfile instance 'VISMIG2'
group 4 ('+DATA') size 1024M,
group 5 ('+DATA') size 1024M,
group 6 ('+DATA') size 1024M;
```

- c. Enable the new thread

```
alter database enable thread 2;
```

4. Add the database and instances to the Oracle Cluster Registry (OCR)

```

srvctl add database -d VISMIG -o /u01/app/oracle/product/11.2.0/dbhome_2 -
a "DATA,RECO"
srvctl add instance -d VISMIG -i VISMIG1 -n dscgigdb03
srvctl add instance -d VISMIG -i VISMIG2 -n dscgigdb04

```

5. Verify srvctl is working for the database

```

srvctl stop database -d VISMIG
srvctl start database -d VISMIG
srvctl status database -d VISMIG
Instance VISMIG1 is running on node dscgigdb03
Instance VISMIG2 is running on node dscgigdb04

```

## 19. Configure HugePages on Each Database Node

HugePages is a Linux-only feature. HugePages are not configured by default on the Oracle Exadata Database Machine.

Follow MOS ID [361468.1](#), “HugePages on Oracle Linux 64-bit”. When running the recommended script provided with [Note 401749.1](#), ensure that the database is started.

## 20. Back Up the Target Database

The target database is now prepared for an import of the Applications data. You should perform a backup before starting the import.

## Exporting the Source Database

### 1. Create the export parameter file

A template for the export parameter file has been included as part of the export/import patch, [13023290](#). Copy \$AU\_TOP/patch/115/import/auexpdp.dat from the source administration server node to the working directory, /ebs/expimp, in the source database server node. Use a text editor to modify the file to reflect the source environment and other customized parameters.

**\*\* Add the following two parameters to the Oracle Data Pump export parameter file: \*\***

- METRICS=Y

The METRICS=Y option of the export parameter file will give you a number of seconds for each “Processing” step. The output will be of the following form:

```

Processing object type DATABASE_EXPORT/TABLESPACE
Completed 70 TABLESPACE objects in 1 seconds

```

- PARALLEL=16

This option was not compared to a non-parallel run so there is no conclusive evidence to the impact. The PARALLEL option is most useful for jobs with a lot of data relative to metadata. Metadata is not exported in parallel, but it is exported serially regardless of this parameter. The value that is specified for the PARALLEL parameter should be less than or equal to the number of files in the dump file set. When using the

PARALLEL option there is an initial estimation phase and with the Vision database that took about 30 minutes.

Additional performance gains can be made if the source database is Oracle Database 11g Release 2 (11.2). Prior to Oracle Database 11g Release 2 (11.2), the master control process when using the PARALLEL option created worker processes only on the same instance on which it was running, ignoring whether or not the instance was part of an Oracle RAC environment. By ignoring the fact that the instance on which it was running was part of an Oracle RAC, the master control process did not capitalize on the ability to use other potentially idle database instances. In Oracle Database 11g Release 2 (11.2), the worker processes are no longer confined to running on the same Oracle RAC instance as the client or master control process. Worker processes can be distributed across Oracle RAC instances to better utilize Oracle RAC resources and provide higher levels of availability. The directory object specified for dump files must be designated to shared storage when using cross-instance data pump parallelism. For a detailed discussion see:

- MOS ID [365459.1](#), “Parallel Capabilities of Oracle Data Pump”
- White paper: [Parallel Capabilities of Oracle Data Pump](#)
- White paper: [Oracle Data Pump On Oracle Real Application Clusters](#)

**Note:** If you do use the PARALLEL parameter then if your dump files are on local storage then ensure you also use the CLUSTER=N parameter. CLUSTER=N restricts the parallel processes to the local instance only. If the dump file location is on a shared location accessible to all Oracle RAC nodes then the CLUSTER=N parameter is not necessary since CLUSTER=Y is the default.

If your source database is Oracle Database 11g (11.1 or 11.2), add the following line to the parameter file:

```
QUERY=applsys.wf_item_attribute_values:"where item_type!='WFERROR' and name !=
'EVENT_MESSAGE'"
```

See the [Export Parameter File](#) discussion for the file contents.

## 2. Create a directory in the source database system schema that corresponds to the directory specified in the export template

```
$ sqlplus system/
SQL> create directory dmpdir_exp as '/ebs/expimp';
```

## 3. Shut down Applications server processes

Shut down all Applications server processes except the database and the Net8 listener for the database. Users cannot use the Applications until the import is completed.

```
$INST_TOP/admin/scripts/adstpall.sh
```

## 4. Grant privilege to source system schema

Grant the exempt access policy privilege to system by using SQL\*Plus to connect to the database as SYSDBA and run the following command:

```
sqlplus "/" as sysdba"
```

```
SQL> grant EXEMPT ACCESS POLICY to system;
```

## 5. Export OLAP analytical workspaces (optional)

The export/import of OLAP analytical workspaces may take up a lot of resources. It may cause memory issues such as bug 10331951. Customers who use OLAP may export/import OLAP through the DBMS\_AW package directly as an alternative.

Perform the detailed steps 1-3 as documented in My Oracle Support Note 352306.1, [Upgrading OLAP from 32 to 64 bits](#), to export OLAP analytical workspaces on the source machine. Copy the export files to the target machine.

## 6. Load Metadata Stylesheets

To avoid ORA-39213 errors, execute the following:

```
sqlplus "/ as sysdba"
SQL> execute dbms_metadata_util.load_stylesheets
```

## 7. Drop Large XLA Packages (recommended for an Oracle E-Business Suite release 12 source system)

There are a number of large packages (greater than 100,000 lines) associated with the Oracle E-Business Suite Sub-ledger Accounting (XLA) feature. Data Pump does not handle these performantly and these packages can add a substantial amount of time (15.5 hours in testing) to the “[Importing](#)” step. Thus, it is recommended to drop these packages prior to the export and re-create them after the import. This saved 15.5 hours during the import because the drop and re-creation only take about 40 minutes total.

Use SQL\*Plus to connect to the source database as sysdba and run the following command to execute the [genDropXLA.sql](#) script to drop the large XLA packages:

```
$ sqlplus "/ as sysdba" @genDropXLA.sql
```

## 8. Monitor Job Status

For details on monitoring Data Pump jobs, see the “Oracle Database Utilities 11g Release 2 (11.2)” guide under Chapter 1, [Monitoring Job Status](#). To summarize, Data Pump jobs can be monitored through the following:

- The Data Pump log file  
LOGFILE setting in the parameter file
- Attaching to the Data Pump job  
See the Data Pump ATTACH option
- The V\$SESSION\_LONGOPS view
- The DBA\_DATAPUMP\_JOBS, USER\_DATAPUMP\_JOBS, or DBA\_DATAPUMP\_SESSIONS view

See the [Monitoring Job Status](#) documentation for details.

## 9. Capture Timings

Even with METRICS=Y the export log does not capture timestamp information for each output line though, so if it's desired to gather complete timing information use the [Timestamp Script](#) in the appendix to prefix the export log output with a timestamp. An example of that would be:

```
tailTime expdpapps.log > expdpapps_time.log
```

The output in expdpapps\_time.log will then have the form:

```
YYMMDD hh:mi:ss <export log message>
```

For example:

```
100602 11:42:07 Processing object type DATABASE_EXPORT/SCHEMA/TABLE/TRIGGER
```

The export for the Vision database took 7:42:29 (hours:minutes:seconds). See [Export Timings](#) for details.

## 10. Export tables with long columns (conditional)

If the source database is Oracle Database 10g Release 2 (10.2.0), then start an export session on the source database server node using the customized aulongexp.dat file generated in "[Export tables with long columns](#)." Use the following command:

```
$ exp parfile=aulongexp.dat
```

## 11. Export the Applications database

Start an export session on the source database server node using the customized export parameter file.

- Go to the working directory:

```
cd /ebs/expimp
```

- If the source database is 10.2.0 or 11.1.0, use the following command:

```
expdp system/ parfile=auexpdp.dat
```

In general, it is not recommended to export/import "as SYSDBA" with Data Pump. However, Oracle E-Business Suite requires using "as SYSDBA" to avoid issues encountered with DBMS\_JOB package failures. If the source database is 11.2.0 (as it is in this example), then use the following command:

```
expdp '/' as sysdba' parfile=auexpdp.dat
```

## 12. Revoke privilege from source system schema

Revoke the exempt access policy privilege from system by using SQL\*Plus to connect to the database as SYSDBA and run the following command:

```
SQL> revoke EXEMPT ACCESS POLICY from system;
```

## Importing

This example does not include any Windows target related steps. It does include additional details related to configuring Oracle RAC and ASM with Oracle E-Business Suite on the target Oracle Exadata Database Machine.

### 1. Create the import parameter file

Copy `auimpdp.dat` from the `$AU_TOP/patch/115/import` directory in the source administration server node to the working directory, `/ebs/expimp`, in the target database server node. Make sure that the `directory`, `dumpfile`, and `logfile` parameters in `auimpdp.dat` are set properly. Use a text editor to modify the file to reflect the source environment and other customized parameters.

The following two parameters were added to the parameter file:

- `METRICS=Y`

The `METRICS=Y` option of the export parameter file will give you a number of seconds for each “Processing” step. The output will be of the form:

```
Processing object type DATABASE_EXPORT/TABLESPACE
Completed 70 TABLESPACE objects in 1 seconds
```

- `PARALLEL=16`

This option was not compared to a non-parallel run so there is no conclusive evidence to the impact. The `PARALLEL` option is most useful for jobs with a lot of data relative to metadata.

In Oracle Database 11g Release 2 (11.2), the worker processes are no longer confined to running on the same Oracle RAC instance as the client or master control process. Worker processes can be distributed across Oracle RAC instances to better utilize Oracle RAC resources and provide higher levels of availability. The directory object specified for dump files must be designated to shared storage when using cross-instance data pump parallelism. For a detailed discussion see:

- MOS ID [365459.1](#), “Parallel Capabilities of Oracle Data Pump”
- White paper - [Parallel Capabilities of Oracle Data Pump](#)
- White paper - [Oracle Data Pump On Oracle Real Application Clusters](#)

**Note:** If you do use the `PARALLEL` parameter and if your dump files are on local storage, then ensure you also use the `CLUSTER=N` parameter. `CLUSTER=N` restricts the parallel processes to the local instance only. If the dump file location is on a shared location accessible to all Oracle RAC nodes then the `CLUSTER=N` parameter is not necessary because `CLUSTER=Y` is the default.

- EXCLUDE=

Note that the EXCLUDE lines included in the [Import Parameter File](#), aimpdp.dat, are intended for pre release 10.2.0.5 databases and thus are not needed for an Exadata target.

Thus, you should comment or remove all EXCLUDE lines except for “exclude=tablespace.”

See the [Import Parameter File](#) for the file contents.

## 2. Create a directory in the target database system schema that corresponds to the directory specified in the import template

```
$ sqlplus system/
SQL> create directory dmpdir_mig as '/ebs/expimp';
```

## 3. Copy the export dump files

This example is using an NFS storage area that is shared between the source and target system so this step was not necessary. If the Oracle Database File System (DBFS) is being used then it is necessary to use secure copy (`scp`) the files into the DBFS location. You can save about 40% of the time by doing parallel copies. See [DBFS Parallel Copy Script](#) for an example script.

Note that if NFS is being used then follow MOS ID [739570.1](#), “ORA-39000 ORA-31640 And Ora-27054 Errors On Invoking Data Pump Import” and set the following database parameter event:

```
event="10298 trace name context forever, level 32"
```

## 4. Monitoring Job Status

For details on monitoring Data Pump jobs see the “Oracle Database Utilities 11g Release 2 (11.2)” guide under Chapter 1, [Monitoring Job Status](#). To summarize, Data Pump jobs can be monitored through the following:

- The Data Pump log file.  
LOGFILE setting in the parameter file
- Attaching to the Data Pump job.  
See the Data Pump ATTACH option
- The V\$SESSION\_LONGOPS view.
- The DBA\_DATAPUMP\_JOBS, USER\_DATAPUMP\_JOBS, or DBA\_DATAPUMP\_SESSIONS view.

See the [Monitoring Job Status](#) documentation for details.

## 5. Capture Timings

The import log does not capture timestamp information for each output line. To gather timing information, use the [Timestamp Script](#) in the appendix to prefix the import log output with a timestamp. An example of that would be:

```
tailTime impdpapps.log > impdpapps_time.log
```

The output in `impdpapps_time.log` will then have the form:

```
100605 22:34:12 Processing object type DATABASE_EXPORT/SCHEMA/TABLE/TABLE
```

The import of the Vision database took 16:11:58 (hours:minutes:seconds). See [Import Timings](#) for details.

## 6. Import the Applications Database

In general, it is not recommended to export/import "as SYSDBA" with Data Pump. However, Oracle E-Business Suite requires using "as SYSDBA" to avoid issues encountered with `DBMS_JOB` package failures.

Use the following command:

```
impdp '/' as sysdba' parfile=auimpdp.dat
```

## 7. Import OLAP analytical workspaces (conditional)

If you exported OLAP analytical workspaces, perform step 7 as documented in My Oracle Support Note [352306.1](#) to import the OLAP analytical workspaces that were previously exported from the source machine.

## 8. Revoke privilege from target system schema

Revoke the exempt access policy privilege from the system by using SQL\*Plus to connect to the database as SYSDBA, and then run the following command:

```
SQL> revoke EXEMPT ACCESS POLICY from system;
```

## 9. Expected/probable errors

a. "already exists" type errors can be ignored. Here is a sample list:

- ORA-31684: "Object type <> already exists"
- ORA-39111: Dependent object type <Object Type> skipped, base object type <Base object type> already exists
- ORA-39151: Table "<table name>" exists. All dependent metadata and data will be skipped due to table\_exists\_action of skip
- ORA-1543 errors, "tablespace ... already exists"

**Action:** Ignore

b. ORA-39082: Object type TYPE:"<object name>" created with compilation warnings

**Action:** handled post-import under [Compile invalid objects](#)



**c. Processing object type****DATABASE\_EXPORT/SCHEMA/TABLE/STATISTICS/TABLE\_STATISTICS**

ORA-39083: Object type TABLE\_STATISTICS failed to create with error:  
 ORA-06550: line 1, column 555:  
 PLS-00103: Encountered the symbol "~" when expecting one of the following:  
**Action: gather index statistics manually.**

**d. Processing object type DATABASE\_EXPORT/SCHEMA/EVENT/TRIGGER**

ORA-39083: Object type TRIGGER failed to create with error:  
 ORA-04072: invalid trigger type  
 Failing sql is:  
 BEGIN DBMS\_DDL.SET\_TRIGGER\_FIRING\_PROPERTY('"B2B"', '"IPR\_LOGON"', FALSE)  
 ; END;  
 ORA-39083: Object type TRIGGER failed to create with error:  
 ORA-04072: invalid trigger type  
 Failing sql is:  
 BEGIN  
 DBMS\_DDL.SET\_TRIGGER\_FIRING\_PROPERTY('"ORASSO"', '"LOGOFF\_TRIGGER"', FALSE)  
 ; END;

**Action: Ignore**

**e. Job "SYS"."SYS\_IMPORT\_FULL\_01" completed with 1639 error(s) at 14:15:45**

Noted to give an idea of the total number of errors encountered with the Vision database import.

## Updating the Imported Database

### 1. Set the Database Environment

Source the \$ORACLE\_HOME/<CONTEXT\_NAME>.env file.

Example:

```
on dscgigdb03: source $ORACLE_HOME/VISMIG1_dscgigdb03.env
```

```
on dscgigdb04: source $ORACLE_HOME/VISMIG2_dscgigdb04.env
```

### 2. Reset Advanced Queues

Use the `auque2.sql` script that was generated in “[Record Advanced Queue settings](#)” of the “[Preparing the Source System](#)” section in the NFS mounted working directory `/ebs/expimp`.

On the target database server node, as the owner of the Oracle 11g file system and database instance, use SQL\*Plus to connect to the target database as SYSDBA and run the `auque2.sql` script to enable the Advanced Queue settings that were lost during the export/import process. The script creates a log file in the current directory.

```
cd /ebs/expimp
$ sqlplus /nolog
SQL> connect / as sysdba;
SQL> @auque2.sql
```

### 3. Start the new database listeners

The listeners should already be running, but if they are not running, then start the listeners:

```
srvctl start listener -l listener_vismig
```

#### 4. Run adgrants.sql

Copy \$APPL\_TOP/admin/adgrants.sql from the administration server node to the working directory, /ebs/expimp, in the database server node. Use SQL\*Plus to connect to the database as SYSDBA and run the script using the following command:

```
sqlplus "/ as sysdba" @adgrants.sql APPS
```

#### 5. Grant create procedure privilege on CTXSYS

Copy \$AD\_TOP/patch/115/sql/adctxprv.sql from the administration server node to the database server node. Use SQL\*Plus to connect to the database as APPS and run the script using the following command:

```
sqlplus apps/apps @adctxprv.sql welcome1 CTXSYS
```

#### 6. \*\* Apply XLA performance patch \*\*

Download and apply Patch 13344804:R12.XLA.B as instructed in MOS [1433227.1](#).

#### 7. Re-create the XLA Packages (optional)

If you ran recommended step, “[Drop Large XLA Packages \(recommended\)](#)”, and dropped the XLA product rule packages prior to the export, then run this step.

1. Copy \$XLA\_TOP/patch/115/sql/xla6128278.sql from the administration server node to the database server node.

```
$ cp $XLA_TOP/patch/115/sql/xla6128278.sql /ebs/expimp
```

2. Use SQL\*Plus to connect to the database as APPS and run the xla6128278.sql script to re-create the XLA packages that were dropped prior to the export. The output file name is passed as a parameter.

```
sqlplus apps/apps @xla6128278.sql xla6128278.lst
```

NOTE: There is a known issue for 11.2.0.3 database, see bug 13344804. If your target database is 11.2.0.3 or later then it may be necessary to [apply patch 13344804](#).

An optional workaround is to set OPTIMIZER\_FEATURES\_ENABLE=<source database release> for the session executing this script. Example steps would be:

```
sqlplus apps/apps
SQL> alter session set optimizer_features_enable='10.2.0.4';
SQL> @xla6128278.sql xla6128278.lst
```

#### 8. Implement and run AutoConfig on the new Database Nodes

On the application administration node:

1. Generate the appsutil.zip for the database tier, and run the following command:

```
perl $AD_TOP/bin/admkappsutil.pl
```

- Copy the appsutil.zip file to each DB server node ORACLE\_HOME:

```
scp /ebs/VISSI/inst/apps/VISSI_haovm021/admin/out/appsutil.zip
dscgigdb03:/u01/app/oracle/product/11.2.0/ebsmig
scp /ebs/VISSI/inst/apps/VISSI_haovm021/admin/out/appsutil.zip
dscgigdb04:/u01/app/oracle/product/11.2.0/ebsmig
```

**\*\* On the target database node: \*\***

- As the APPS user, run the following command on the primary database node to de-register the current configuration:

```
SQL>exec fnd_conc_clone.setup_clean;
```

Install appsutil.zip on each target database node:

- cd \$ORACLE\_HOME
- unzip -o appsutil.zip
- Install the \$ORACLE\_HOME/appsutil/jre directory:

```
$ cd $ORACLE_HOME/appsutil
$ cp -r $ORACLE_HOME/jdk/jre jre
$ mkdir clone
$ cp -r $ORACLE_HOME/jdk/jre clone/jre
```

- Generate a new context file:

```
perl $ORACLE_HOME/appsutil/bin/adbldxml.pl
The context file has been created at:
/u01/app/oracle/product/11.2.0/ebsmig/appsutil/VISMIG1_dscgigdb03.xml
```

- Set the virtual hostname in each nodes context file

Set the value of s\_virtual host\_name to point to the virtual hostname for the database host, by editing the database context file:

```
On dscgigdb03: $ORACLE_HOME/appsutil/VISMIG1_dscgigdb03.xml
On dscgigdb03: $ORACLE_HOME/appsutil/VISMIG2_dscgigdb04.xml

On dscgigdb03: <host oa_var="s_virtual_hostname">dscgig03-vip</host>
On dscgigdb04: <host oa_var="s_virtual_hostname">dscgig04-vip</host>
```

- Set the named listener name in each nodes context file:

```
<DB_LISTENER oa_var="s_db_listener">LISTENER_VISMIG</DB_LISTENER>
```

- Run autoconfig on each database node:

- \$ORACLE\_HOME/appsutil/bin/adconfig.sh  
contextfile=/u01/app/oracle/product/11.2.0/ebsmig/appsutil/VISMIG1\_dscgigdb03.xml

Or more generically if the \$ORACLE\_HOME/<CONTEXT\_NAME>.env file has been sourced.

- \$ORACLE\_HOME/appsutil/bin/adconfig.sh contextfile=\$CONTEXT\_FILE  
...  
Using Context file :  
/u01/app/oracle/product/11.2.0/ebsmig/appsutil/VISMIG1\_dscgigdb03.xml

```

Context Value Management will now update the Context file

Updating Context file...COMPLETED

Attempting upload of Context file and templates to
database...COMPLETED

Updating rdbms version in Context file to db112
Updating rdbms type in Context file to 64 bits
Configuring templates from ORACLE_HOME ...

AutoConfig completed successfully.

```

## 11. Revise the listener on each database node.

The reason the listener requires revision is:

- In 11.2, listeners are configured at the cluster level, and all nodes inherit the port and environment settings. This means that the TNS\_ADMIN directory path must be the same on all nodes.
- The current version of AutoConfig creates a listener.ora file under the \$ORACLE\_HOME/network/admin/<context-name> directory.
- AutoConfig **does** support SCAN listeners as of Oracle E-Business Suite 12.1.3. The SCAN was not used in this example. See MOS ID [823587.1](#), “Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 12” for further details.

**Note :** Although SCAN listener is supported, if scan\_name resolves in DNS to IP1 and IP2 , the client side 10.1.2 network code does not use round robin on the underlying IPs if the first IP fails. An AutoConfig solution for this is being tracked through [Bug 10427234](#) and continue to check MOS ID [823587.1](#). The only existing workaround is to create custom TNS aliases configured with multiple SCAN IP addresses.

- a. On each database node, add an ifile entry to the Grid Infrastructure listener.ora and tnsnames.ora network files.

```

/u01/app/11.2.0/grid/network/admin/listener.ora
/u01/app/11.2.0/grid/network/admin/tnsnames.ora

```

Point these to the Autoconfig generated files under  
\$ORACLE\_HOME/network/admin/<context-name>/listener.ora

- i. Update the Grid Infrastructure listener.ora on each database node to point to the Autoconfig generated files under  
\$ORACLE\_HOME/network/admin/<context-name>/listener.ora

For example, on database node 1, dscgigdb03, add the following line to the end of the /u01/app/11.2.0/grid/network/admin/listener.ora file:

```

IFILE=/u01/app/oracle/product/11.2.0/ebsmig/network/admin/VISMIG1_d
scgigdb03/listener.ora

```

- ii. Update the Grid Infrastructure tnsnames.ora on each database node to point to the Autoconfig generated files under  
`$ORACLE_HOME/network/admin/<context-name>/tnsnames.ora`

For example, on database node 1, dscgigdb03, add the following line to the end of the `/u01/app/11.2.0/grid/network/admin/tnsnames.ora` file:

```
IFILE=/u01/app/oracle/product/11.2.0/ebsmig/network/admin/VISMIG1_dscgigdb03/tnsnames.ora
```

- b. Set the listener and database environment in OCR and verify it works with `srvctl`:

```
srvctl setenv listener -l listener_vismig -T
TNS_ADMIN=/u01/app/11.2.0/grid/network/admin
```

```
srvctl setenv database -d VISMIG -T
TNS_ADMIN=/u01/app/11.2.0/grid/network/admin
```

```
srvctl stop listener -l listener_vismig
srvctl start listener -l listener_vismig
```

**Note:** Management of the listener, starting, and stopping, must be done through `srvctl` because the login of the Oracle E-Business Suite database owner will be pointing to the `TNS_ADMIN` directory. To execute `lsnrctl` commands directly against the listener requires that you set your environment to the Grid Infrastructure.

12. Run autoconfig on database nodes once again.

Run this command once on each database node to register the node. Then, after all nodes are registered, run the command again on each node to generate the correct Oracle\*Net configuration files.

```
$ORACLE_HOME/appsutil/bin/adconfig.sh contextfile=$CONTEXT_FILE
```

## 9. Run AutoConfig on the Application-Tier Nodes

- a. Edit `SID=<Instance 1>` and `PORT=<New listener port >` in `$TNS_ADMIN/tnsnames.ora` file, to set up a connection to one of the instances in the Oracle RAC environment.
- b. Verify the connection:
 

```
sqlplus system/welcome1
```
- c. Edit the context variable `jdbc_url` in `$CONTEXT_FILE`, changing the `HOST`, `PORT`, `SERVICE_NAME` and adding the `INSTANCE_NAME` to the `CONNECT_DATA` parameter.

### Before

```
<jdbc_url
oa_var="s_apps_jdbc_connect_descriptor">jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(LOAD_BALANCE=YES) (FAILOVER=YES) (ADDRESS=(PROTOCOL=tcp) (HOST=dscbac08.us.oracle.com) (PORT=1523))) (CONNECT_DATA=(SERVICE_NAME=VISSI)))</jdbc_url>
```

### After

```
<jdbc_url
oa_var="s_apps_jdbc_connect_descriptor">jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(LOAD_BALANCE=YES) (FAILOVER=YES) (ADDRESS=(PROTOCOL=tcp) (HOST=dscgig03-vip.us.oracle.com) (PORT=1524)) (ADDRESS=(PROTOCOL=tcp) (HOST=dscgig
```

```
04-vip.us.oracle.com) (PORT=1524)) (CONNECT_DATA=(SERVICE_NAME=VISMIG)) </j
dbc_url>
```

d. Run Autoconfig:

```
$INST_TOP/admin/scripts/adautoconfig.sh
```

## 10. Gather statistics for SYS schema

- a. Copy \$APPL\_TOP/admin/adstats.sql from the administration server node to the database server node work directory,

```
cp $APPL_TOP/admin/adstats.sql /ebs/expimp
```

- b. Run the script

```
sqlplus "/ as sysdba"
alter system enable restricted session;
@adstats.sql
```

```
sqlplus "/ as sysdba"
alter system disable restricted session;
```

## 11. Re-create custom database links (conditional)

If the Oracle Net listener in the 11g Oracle home is defined differently than the one used by the old Oracle home, you must re-create any custom self-referential database links that exist in the Applications database instance.

To check for the existence of database links, use SQL\*Plus on the database server node to connect to the Applications database instance as APPS and run the following query:

```
$ sqlplus apps/[apps password]
SQL> select db_link from dba_db_links;
```

The EDW\_APPS\_TO\_WH and APPS\_TO\_APPS database links, if they exist, should have been updated with the new port number by AutoConfig in the previous step.

If you have custom self-referential database links in the database instance, use the following commands to drop and re-create them:

```
$ sqlplus apps/[apps password]
SQL> drop database link [custom database link];
SQL> create database link [custom database link] connect to
[user] identified by [password] using
'(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP) (HOST=[hostname])
(PORT=[port number])) (CONNECT_DATA=(SID=[ORACLE_SID])))';
```

where [custom database link], [user], [password], [hostname], [port number], and [ORACLE\_SID] reflect the new Oracle Net listener for the database instance.

## 12. Create ConText and AZ objects

- a. Enable Maintenance Mode

Run AD Administration (adadmin) on the target administration server node.

```
Select "5. Change Maintenance Mode" / "1. Enable Maintenance Mode"
```

- b. Generate the driver file:

```
perl $AU_TOP/patch/115/bin/dpost_imp.pl ctx_az_obj.drv 11
```

- c. Apply the patch:

Run AutoPatch (adpatch) to apply it on the target administration server node.

## 13. Populate CTXSYS.DR\$\$SQE table (R12 only)

To populate the CTXSYS.DR\$\$SQE table, use SQL\*Plus on the database server node to connect to the Applications database instance as APPS and run the following command:

```
$ sqlplus apps/
SQL> exec icx_cat_sqe_pvt.sync_sqes_for_all_zones;
```

## 14. Compile invalid objects

On the target database server node, use SQL\*Plus to connect to the target database as SYS and run the \$ORACLE\_HOME/rdbms/admin/utlrlp.sql script to compile invalid objects.

```
$ sqlplus "/" as sysdba" @$ORACLE_HOME/rdbms/admin/utlrlp.sql
```

## 15. Maintain Applications database objects

Run AD Administration (adadmin) on the target administration server node. From the Maintain Applications Database Objects menu, perform the following tasks:

- a. Compile flexfield data in AOL tables  
Select "3. Compile/Reload Applications Database Entities menu" / "3. Compile flexfields"
- b. Recreate grants and synonyms for the APPS schema  
Select "4. Maintain Applications Database Entities menu" / "2. Re-create grants and synonyms for APPS schema"
- c. Disable Maintenance Mode  
Select "5. Change Maintenance Mode" / "2. Disable Maintenance Mode"

## 16. Start Applications server processes

Start all the server processes on the target Applications system. You can test and then allow users to access the system at this time.

```
$INST_TOP/admin/scripts/adstrtal.sh
```

## 17. Create DQM indexes

Create DQM indexes by following these steps:

- a. Log on to Oracle Applications with the "Trading Community Manager" responsibility  
Login with "operations/welcome" and then select "Trading Community Manager"
- b. Click **Control > Request > Run**.
- c. Select the "Single Request" option.
- d. Enter "DQM Staging Program" in the "Name" field.
- e. Enter the following parameters:
  - Number of Parallel Staging Workers: 4
  - Staging Command: CREATE\_INDEXES
  - Continue Previous Execution: NO
  - Index Creation: SERIAL
- f. Click **Submit**.

**\*\* Further Configuration \*\***

**\*\* Set up Load Balancing \*\***

MOS ID [823587.1](#), "Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 12" was used as the basis for these steps.

To implement load balancing for the Oracle Applications database connections:

1. Run the Context Editor (through the Oracle Applications Manager interface) or directly edit the \$CONTEXT\_FILE.

This example uses the Context Editor. To access the Context Editor:

- 1) Go to the System Administrator responsibility and select Oracle Applications Manager "Dashboard", then the "Site Map" link, then the "AutoConfig" option, then select the icon to the right of the applications tier node under the "Edit Parameters" column.
- 2) Set the value of "Tools OH TWO\_TASK" (s\_tools\_two\_task), "iAS OH TWO\_TASK" (s\_weboh\_twotask) and "Apps JDBC Connect Alias" (s\_apps\_jdbc\_connect\_alias) to the load balancing connect alias: VISMIG\_BALANCE

From Applications tier node \$TNS\_ADMIN/tnsnames.ora:

```
VISMIG_BALANCE=
  (DESCRIPTION=
    (ADDRESS_LIST=
      (LOAD_BALANCE=YES)
```



```
(FAILOVER=YES)
  (ADDRESS=(PROTOCOL=tcp) (HOST=dscgig04-vip.us.oracle.com) (PORT=1524))
  (ADDRESS=(PROTOCOL=tcp) (HOST=dscgig03-vip.us.oracle.com) (PORT=1524))
)
(CONNECT_DATA=
  (SERVICE_NAME=VISMIG)
)
)
```

- "Tools OH TWO\_TASK" (s\_tools\_two\_task) is under the "Environments" tab under "oa\_environment:tools\_home"
- "iAS OH TWO\_TASK" (s\_weboh\_twotask) is under the "Environments" tab under "oa\_environment:web\_home"
- "Apps JDBC Connect Alias" (s\_apps\_jdbc\_connect\_alias) is under the "System" tab under "oa\_web\_server"

## Verify the changes in the OAM Context Editor

In the Context Editor, search on the value of VISMIG\_BALANCE and you should see the following after changes:



| Title                       | DA_VAR                    | Status      | Value                                    | Description   |
|-----------------------------|---------------------------|-------------|--|---|
| APPLUSTT                    | s_applustt                | Not Changed | VISMIG_BALANCE:VDSI_TO_VDSI_BALANCE:VDSI | Session separated list of TWO_TASKs from which the FND File Server will accept requests.  |
| Apps JDBC Connect Alias     | s_apps_jdbc_connect_alias | Not Changed | VISMIG_BALANCE                           | Configure this variable only when you have an Oracle RAC Database instance. This variable can have a value of either a load balanced connect descriptor or an instance specific connect descriptor. Please see Oracle Metalink Note 388577.1 for more information on RAC and discussion of the value for this variable. |
| Concurrent Manager TWO_TASK | s_cm_two-task             | Not Changed | VISMIG_BALANCE                           | Concurrent Manager TWO_TASK   |
| Tools OH TWO_TASK           | s_tools_oh-two-task       | Not Changed | VISMIG_BALANCE                           | Tools Oracle Home TWO_TASK  |
| IG OH TWO_TASK              | s_webch_two-task          | Not Changed | VISMIG_BALANCE                           | TWO_TASK for the 10.1.3.145 Oracle Home   |

## Run autoconfig on application administration node

```
$INST_TOP/admin/scripts/adautoconfig.sh
```

### \*\* Set up Parallel Concurrent Processing \*\*

The steps for setting up parallel concurrent processing are documented in MOS ID [823587.1](#), “Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 12” under Section 3.9.

### \*\* Migrating the Applications Tier \*\*

If you need to migrate or move to a new applications tier platform then consult MOS [438086.1](#) for detailed instructions. The process described provides a way to quickly and easily move an existing Oracle E-Business Suite application tier to a different platform, allowing you to utilize different hardware for the application tier.

## Conclusion

A successful migration of Oracle E-Business Suite to the Oracle Exadata Database Machine is dependent upon thorough preparation that includes planning, testing, and reviewing all of the steps involved. This paper illustrates the steps to migrate an existing Oracle E-Business Suite R12 installation’s 11.2 database to the Oracle Exadata Database Machine using Oracle Data Pump. If you have Oracle E-Business Suite 11i, then extreme care must be taken when following the other notes that refer to your specific release. In general, the same strategy of creating the target Oracle Exadata Database Machine database with Oracle RAC and Oracle ASM in this example still applies for the other release combination cases, but thorough testing is required. Any improvements to this process will be updated in this paper and reposted to the MAA web site at <http://www.oracle.com/goto/maa.htm>.

## Appendix

### Test Environment Details

The hardware and software details for the test environment are as follows:

#### Source Database System

Single node, single instance install

- Name: dscbac08
- Oracle Enterprise Linux 2.6.18-53.1.21.2.1.el5. x86\_64
- Oracle Enterprise Edition 11.1.0.7
- ORACLE\_HOME=/ebs/VISSI/db/tech\_st/11.2.0
- Vision database used and is about 300 GB
- DB\_NAME=VISSI
- ORACLE\_SID=VISSI
- NFS mounted storage from dscbbg03:/export2/ on /ebs

#### Application Tier Node

- Name: haovm021.us.oracle.com
- Oracle Enterprise Linux 2.6.18-128.0.0.0.2. x86\_64
- E-Business Suite Version 12.1.1
- ORACLE\_HOME /ebs/VISSI/apps/tech\_st/10.1.2
- \$APPL\_TOP /ebs/VISSI/apps/apps\_st/appl
- \$INST\_TOP /ebs/VISSI/inst/apps/VISSI\_haovm021
- NFS mounted storage from dscbbg03:/export2/ on /ebs

#### Target Database System

##### Oracle Exadata Database Machine quarter rack

- Compute Nodes
  - Names: dscgigdb03 and dscgigdb04
  - IP Addresses
    - dscgigdb03 10.204.74.168
    - dscgig03-vip 10.204.77.181
    - dscgigdb04 10.204.74.169
    - dscgig04-vip 10.204.77.182

- Database ORACLE\_HOME /u01/app/oracle/product/11.2.0/ebsmig
- Vision database used and is about 300 GB
- ORACLE\_SID=VISMIG1 and VISMIG2 respectively
- DB\_NAME=VISMIG
- Grid ORACLE\_HOME /u01/app/11.2.0/grid
- ASM ORACLE\_SID=+ASM1 and +ASM2 respectively
- ASM Disk groups: +DATA and +RECO
- Oracle Enterprise Linux 2.6.18-128.1.16.0.1.el5 x86\_64
- Oracle Enterprise Edition 11.2.0.2
- 2 Quad-Core Intel Xeon® E5540 Processors (2.53 GHz)
- 72 GB memory
- Disk Controller HBA with 512MB Battery Backed Write Cache
- 4 x 146 GB SAS 10,000 RPM disks
- Dual-Port QDR InfiniBand Host Channel Adapter
- 4 Embedded Gigabit Ethernet Ports
- Storage:
  - 3 Exadata Cells (dscgigcel05-07)

Each cell with:

- 2 Quad-core Intel Xeon E5540 (2.53GHz) processors
- Exadata Smart Flash Cache 384 GB
- 12 x 1TB 7,200 RPM SATA drives
- NFS mounted storage from dscbbg03:/export2/ on /ebs

### Modified aucrdb.sql Script

This script was originally generated on the source system using the \$AU\_TOP/patch/115/sql/auc1ondb.sql script. The source system was using the file system for the datafile paths of the form ‘?/dbf/<datafile-name>’ and no AUTOEXTEND setting. Additionally, many of the tablespaces had multiple datafiles for relatively small sizes. The addition of ‘AUTOEXTEND ON’ and the consolidation of the datafiles was done manually. Note that the redo log file size is dependent upon your transaction volume and that a general guideline is to switch logs at most once every twenty minutes. See MOS ID [781999.1](#), “*General Guideline For Sizing The Online Redo Log Files*” for further detail. The change of the datafile paths to the Oracle ASM ‘+DATA’ disk group with the DB\_NAME of VISMIG was done within the VI editor using the following command:

```
: %s/?\dbf/+DATA\VISMIG\DATAFILE/g
```

With patch [7120092](#) being replaced by [12353539](#) (now replaced by [13023290](#)), UNIFORM EXTENT MANAGEMENT was also eliminated in favor of AUTOALLOCATE (implicit default).

### Modified aucrdb.sql

```

REM =====
REM
REM NAME
REM   aucrdb.sql
REM
REM DESCRIPTION
REM
REM   Script to create a database with tablespaces and files
REM   similar to that of the database against which the script
REM   was generated.
REM
REM       Database Instance : VISSI
REM       Database Version  : 11.2.0.2.0
REM       Creation Date     : 03-JUN-2010 08:48:23
REM
REM NOTES
REM   BEFORE RUNNING THE SCRIPT YOU MUST REVIEW
REM   IT FOR THE FOLLOWING :
REM       - Database Characterset information
REM       - Location and size of the data files
REM       - Tablespace storage information
REM       - Rollback Segment information
REM
REM =====

REM -----
REM Create Database
REM -----

CREATE DATABASE
  MAXDATAFILES 512
  CHARACTER SET AL32UTF8
  NATIONAL CHARACTER SET UTF8
LOGFILE
  GROUP 1 (
    '+DATA/VISMIG/ONLINELOG/log01.dbf',
    '+RECO/VISMIG/ONLINELOG/log01.dbf'
  ) SIZE 1024M ,
  GROUP 2 (
    '+DATA/VISMIG/ONLINELOG/log02.dbf'
    '+RECO/VISMIG/ONLINELOG/log02.dbf'
  ) SIZE 1024M ,
  GROUP 3 (
    '+DATA/VISMIG/ONLINELOG/log03.dbf'
    '+RECO/VISMIG/ONLINELOG/log03.dbf'
  ) SIZE 1024M
DATAFILE
  '+DATA/VISMIG/datafile/SYSTEM01.dbf' SIZE 20491M AUTOEXTEND ON
SYSAUX DATAFILE
  '+DATA/VISMIG/datafile/sysaux01.dbf' SIZE 1339M AUTOEXTEND ON
UNDO TABLESPACE "UNDO_TBS1"
DATAFILE
  '+DATA/VISMIG/datafile/undotbs1_01.dbf' SIZE 3700M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
DEFAULT TEMPORARY TABLESPACE "TEMP2"

```

```
TEMPFILE
  '+DATA/VISMIG/datafile/temp2_01.dbf' SIZE 18000M AUTOEXTEND ON,
  '+DATA/VISMIG/datafile/temp2_02.dbf' SIZE 18000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL UNIFORM SIZE 1M
/

CREATE TEMPORARY TABLESPACE "TEMP1"
TEMPFILE
  '+DATA/VISMIG/datafile/temp1_01.dbf' SIZE 18000M AUTOEXTEND ON,
  '+DATA/VISMIG/datafile/temp1_02.dbf' SIZE 18000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL UNIFORM SIZE 1M
/

ALTER TABLESPACE "TEMP2" TABLESPACE GROUP "TEMP";
ALTER TABLESPACE "TEMP1" TABLESPACE GROUP "TEMP";
ALTER DATABASE DEFAULT TEMPORARY TABLESPACE "TEMP";

prompt
prompt Ignore any errors related to the setting
prompt of the default temporary tablespace
prompt

REM -----
REM Create Tablespaces
REM -----

CREATE TABLESPACE "APPS_CALCLIP"
DATAFILE
  '+DATA/VISMIG/datafile/apps_calclip.dbf' SIZE 5000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_OMO"
DATAFILE
  '+DATA/VISMIG/datafile/APPS_OMO02.dbf' SIZE 1200M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_ARCHIVE"
DATAFILE
  '+DATA/VISMIG/datafile/archive1.dbf' SIZE 1200M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_DISCO"
DATAFILE
  '+DATA/VISMIG/datafile/disco1.dbf' SIZE 906M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_DISCO_OLAP"
DATAFILE
  '+DATA/VISMIG/datafile/disco_drake1.dbf' SIZE 1350M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_INTERFACE"
```

```
DATAFILE
    '+DATA/VISMIG/datafile/apps_ts_interface.dbf' SIZE 3000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_MEDIA"
DATAFILE
    '+DATA/VISMIG/datafile/medial.dbf' SIZE 7000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_NOLOGGING"
DATAFILE
    '+DATA/VISMIG/datafile/nologging1.dbf' SIZE 700M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_QUEUES"
DATAFILE
    '+DATA/VISMIG/datafile/APPS_TS_QUEUES02.dbf' SIZE 5000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_SEED"
DATAFILE
    '+DATA/VISMIG/datafile/reference1.dbf' SIZE 4000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_SUMMARY"
DATAFILE
    '+DATA/VISMIG/datafile/APPS_TS_SUMMARY02.dbf' SIZE 23000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_TX_DATA"
DATAFILE
    '+DATA/VISMIG/datafile/APPS_TS_TX_DATA_01.dbf' SIZE 16000M AUTOEXTEND ON,
    '+DATA/VISMIG/datafile/APPS_TS_TX_DATA_02.dbf' SIZE 16000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "APPS_TS_TX_IDX"
DATAFILE
    '+DATA/VISMIG/datafile/APPS_TS_TX_IDX01.dbf' SIZE 21000M AUTOEXTEND ON,
    '+DATA/VISMIG/datafile/APPS_TS_TX_IDX02.dbf' SIZE 21000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "B2B_DT"
DATAFILE
    '+DATA/VISMIG/datafile/b2b_dt.dbf' SIZE 72M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/
```

```
CREATE TABLESPACE "B2B_IDX"
DATAFILE
    '+DATA/VISMIG/datafile/b2b_idx.dbf' SIZE 17M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "B2B_LOB"
DATAFILE
    '+DATA/VISMIG/datafile/b2b_lob.dbf' SIZE 13M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "B2B_RT"
DATAFILE
    '+DATA/VISMIG/datafile/b2b_rt.dbf' SIZE 45M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "BAM"
DATAFILE
    '+DATA/VISMIG/datafile/bam.dbf' SIZE 8M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "BIA_RTL"
DATAFILE
    '+DATA/VISMIG/datafile/bia_rtl.dbf' SIZE 1000M      AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "CTXSYS"
DATAFILE
    '+DATA/VISMIG/datafile/ctx1.dbf' SIZE 92M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "CWMLITE"
DATAFILE
    '+DATA/VISMIG/datafile/cwmlite01.dbf' SIZE 50M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DATA"
DATAFILE
    '+DATA/VISMIG/datafile/data01.dbf' SIZE 7500M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DCM"
DATAFILE
    '+DATA/VISMIG/datafile/dcm.dbf' SIZE 300M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/
```



```
CREATE TABLESPACE "DEMANTRA"
DATAFILE
    '+DATA/VISMIG/datafile/DEMANTRA02.dbf' SIZE 5500M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DISCO_PTM5_CACHE"
DATAFILE
    '+DATA/VISMIG/datafile/discopl1tcl.dbf' SIZE 114M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DISCO_PTM5_META"
DATAFILE
    '+DATA/VISMIG/datafile/discopl1tml.dbf' SIZE 3M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DSGATEWAY_TAB"
DATAFILE
    '+DATA/VISMIG/datafile/oss_sys01.dbf' SIZE 7M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_AGGREGATE_IDX"
DATAFILE
    '+DATA/VISMIG/datafile/dw_aggregate_idx.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_AGGREGATE_TBS"
DATAFILE
    '+DATA/VISMIG/datafile/dw_aggregate_tbs.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_BASE_IDX"
DATAFILE
    '+DATA/VISMIG/datafile/dw_base_idx.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_BASE_TBS"
DATAFILE
    '+DATA/VISMIG/datafile/dw_base_tbs.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_DERIVED_IDX"
DATAFILE
    '+DATA/VISMIG/datafile/dw_derived_idx.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
```

```
/

CREATE TABLESPACE "DW_DERIVED_TBS"
DATAFILE
    '+DATA/VISMIG/datafile/dw_derived_tbs.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_DM_TBS"
DATAFILE
    '+DATA/VISMIG/datafile/dw_dm_tbs.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_LOOKUP_TBS"
DATAFILE
    '+DATA/VISMIG/datafile/dw_lookup_tbs.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_MVLOG_TBS"
DATAFILE
    '+DATA/VISMIG/datafile/dw_mvlog_tbs.dbf' SIZE 100M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_REFERENCE_IDX"
DATAFILE
    '+DATA/VISMIG/datafile/dw_reference_idx.dbf' SIZE 100M AUTOEXTEND ON

EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "DW_REFERENCE_TBS"
DATAFILE
    '+DATA/VISMIG/datafile/dw_reference_tbs.dbf' SIZE 134M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "GEOR_TBS"
DATAFILE
    '+DATA/VISMIG/datafile/apps_ts_spatial.dbf' SIZE 3000M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "HTMLDB"
DATAFILE
    '+DATA/VISMIG/datafile/htmldb.dbf' SIZE 600M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "IAS_META"
DATAFILE
    '+DATA/VISMIG/datafile/IAS_META02.dbf' SIZE 300M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
```

```
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "MTR"
DATAFILE
    '+DATA/VISMIG/datafile/opmtr01.dbf' SIZE 4M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OCATS"
DATAFILE
    '+DATA/VISMIG/datafile/oca.dbf' SIZE 3M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "ODM_DATA"
DATAFILE
    '+DATA/VISMIG/datafile/odm.dbf' SIZE 40M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OLAP_BAAD"
DATAFILE
    '+DATA/VISMIG/datafile/olap_baad01.dbf' SIZE 1500M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OLTS_ATTRSTORE"
DATAFILE
    '+DATA/VISMIG/datafile/attrs1_oid.dbf' SIZE 15M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OLTS_BATTRSTORE"
DATAFILE
    '+DATA/VISMIG/datafile/battr1_oid.dbf' SIZE 15M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OLTS_CT_STORE"
DATAFILE
    '+DATA/VISMIG/datafile/gcats1_oid.dbf' SIZE 8M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OLTS_DEFAULT"
DATAFILE
    '+DATA/VISMIG/datafile/gdefault1_oid.dbf' SIZE 3M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OLTS_SVRMGSTORE"
DATAFILE
    '+DATA/VISMIG/datafile/svrmg1_oid.dbf' SIZE 3M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
```

```
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OPMOR"
DATAFILE
    '+DATA/VISMIG/datafile/opmor01.dbf' SIZE 6M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "ORABPEL"
DATAFILE
    '+DATA/VISMIG/datafile/orabpel.dbf' SIZE 13M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "OWAPUB"
DATAFILE
    '+DATA/VISMIG/datafile/owal.dbf' SIZE 10M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "RBS_MIG"
DATAFILE
    '+DATA/VISMIG/datafile/rbs_mig01.dbf' SIZE 46M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "RE"
DATAFILE
    '+DATA/VISMIG/datafile/opre01.dbf' SIZE 8M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "SYNCSERVER"
DATAFILE
    '+DATA/VISMIG/datafile/mobile01.dbf' SIZE 58M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "TS_DP"
DATAFILE
    '+DATA/VISMIG/datafile/ts_dp.dbf' SIZE 50M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "TS_SALES_DATA"
DATAFILE
    '+DATA/VISMIG/datafile/ts_sales_data.dbf' SIZE 50M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "TS_SALES_DATA_ENGINE"
DATAFILE
    '+DATA/VISMIG/datafile/ts_sales_data_engine.dbf' SIZE 50M AUTOEXTEND ON
```

```

EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "TS_SALES_DATA_ENGINE_X"
DATAFILE
    '+DATA/VISMIG/datafile/ts_sales_data_engine_x.dbf' SIZE 50M AUTOEXTEND ON

EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "TS_SALES_DATA_X"
DATAFILE
    '+DATA/VISMIG/datafile/ts_sales_data_x.dbf' SIZE 50M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "TS_SIM"
DATAFILE
    '+DATA/VISMIG/datafile/ts_sim.dbf' SIZE 50M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "TS_SIM_X"
DATAFILE
    '+DATA/VISMIG/datafile/ts_sim_x.dbf' SIZE 50M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "UDDISYS_TS"
DATAFILE
    '+DATA/VISMIG/datafile/uddisys01.dbf' SIZE 22M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "WCRSYS_TS"
DATAFILE
    '+DATA/VISMIG/datafile/wcrsys01.dbf' SIZE 3M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

CREATE TABLESPACE "XDB"
DATAFILE
    '+DATA/VISMIG/datafile/xd01.dbf' SIZE 300M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
SEGMENT SPACE MANAGEMENT AUTO
/

REM Added for RAC
CREATE UNDO TABLESPACE "UNDO_TBS2"
DATAFILE
    '+DATA/VISMIG/datafile/undotbs2_01.dbf' SIZE 3700M AUTOEXTEND ON
EXTENT MANAGEMENT LOCAL
/

```

## Target Database Parameter File

The source of this file was the single instance source database system. The file was then modified to accommodate the new database name of VISMIG, ASM and Oracle RAC setup prior to the database creation. The CLUSTER\_DATABASE parameter is commented out for database creation. The changes from the original file are highlighted in red and also have a comment for the “Old setting” and the “New target”.

Refer to Support Note, “Database Initialization Parameters for Oracle Applications Release 12” [ID 396009.1] and update both the init.ora and file with any necessary changes. This example is for Release 12, for Release 11i see, “Database Initialization Parameters for Oracle Applications Release 11i [ID 216205.1]”.

```
*. _b_tree_bitmap_plans=FALSE
*._disable_fast_validate=TRUE
*._fast_full_scan_enabled=FALSE
*._index_join_enabled=FALSE
*._like_with_bind_as_equality=TRUE
*._optimizer_autostats_job=FALSE
*._sort_elimination_cost_ratio=5
*._sqlxexec_progression_cost=2147483647
*._system_trig_enabled=true
*._trace_files_public=TRUE
*.aq_tm_processes=1
*.compatible='11.2.0'
# Old setting
*._control_files='/ebs/VISSI/db/apps_st/data/cntrl01.dbf','/ebs/VISSI/db/apps_st/data/cntrl02.dbf','/ebs/VISSI/db/apps_st/data/cntrl03.dbf'
# New target
*.control_files='+DATA/VISMIG/CONTROLFILE/cntrl01.dbf','+DATA/VISMIG/CONTROLFILE/cntrl02.dbf','+RECO/VISMIG/CONTROLFILE/cntrl03.dbf'
*.cursor_sharing='EXACT'
*.db_block_checking='FALSE'
*.db_block_checksum='TRUE'
*.db_block_size=8192
*.db_files=512
# Old setting
*._db_name='VISSI'
# New target
*._db_name='VISMIG'
*.diagnostic_dest='/u01/app/oracle'
*.dml_locks=10000
*.event=''
*.java_pool_size=209715200
*.job_queue_processes=2
*.log_buffer=10485760
*.log_checkpoint_interval=100000
*.log_checkpoint_timeout=1200
*.log_checkpoints_to_alert=TRUE
*.max_dump_file_size='20480'
*.nls_comp='binary'
*.nls_date_format='DD-MON-RR'
*.nls_language='american'
*.nls_length_semantics='BYTE'
*.nls_numeric_characters=',.'
*.nls_sort='binary'
*.nls_territory='america'
*.olap_page_pool_size=4194304
*.open_cursors=600
```

```

*.optimizer_secure_view_merging=FALSE
*.parallel_max_servers=8
*.parallel_min_servers=0
*.pga_aggregate_target=1073741824
*.plsql_code_type='INTERPRETED'
*.plsql_optimize_level=2
*.processes=200
*.query_rewrite_enabled='true'
*.recyclebin='OFF'
*.sec_case_sensitive_logon=FALSE
*.session_cached_cursors=500
*.sessions=400
*.sga_target=1073741824
# Added for ensuring HugePages are used, see MOS 1392497.1
*.use_large_pages='ONLY'
*.shared_pool_reserved_size=41943040
*.shared_pool_size=41943040
*.timed_statistics=TRUE
*.undo_management='AUTO'
# Old setting
#*.undo_tablespace='UNDO_TBS'
# Old setting
#*.utl_file_dir='/usr/tmp','/usr/tmp','/ebs/VISSI/db/tech_st/11.1.0/appsutil/o
utbound/VISSI_dscbac08','/usr/tmp'
# New target
VISMIG1.utl_file_dir='/usr/tmp','/usr/tmp','/u01/app/oracle/product/11.2.0/ebs
mig/appsutil/outbound/VISMIG_dscgigdb03','/usr/tmp'
VISMIG2.utl_file_dir='/usr/tmp','/usr/tmp','/u01/app/oracle/product/11.2.0/ebs
mig/appsutil/outbound/VISMIG_dscgigdb04','/usr/tmp'
*.workarea_size_policy='AUTO'
#
# Added for ASM and Oracle Managed Files
*.db_recovery_file_dest='+RECO'
*.db_recovery_file_dest_size=500G
*.db_create_file_dest='+DATA'
# RAC Additions
#*.cluster_database=true
VISMIG1.instance_number=1
VISMIG2.instance_number=2
VISMIG1.local_listener='(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP) (HOS
T=dscgig03-vip) (PORT=1524))))'
VISMIG2.local_listener='(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP) (HOS
T=dscgig04-vip) (PORT=1524))))'
VISMIG1.thread=1
VISMIG2.thread=2
VISMIG1.undo_tablespace='UNDO_TBS1'
VISMIG2.undo_tablespace='UNDO_TBS2'
# Added for issues with NFS for import, Support note 739570.1
*.event="10298 trace name context forever, level 32"

```

## DBFS Parallel Copy Script

This script can be used to copy each 1 Gb export file in parallel from the source system export location to the target system DBFS import location. This script has the following prerequisites:

- The source file system containing the export dump files is NFS mounted on the target Oracle Exadata Database Machine. For this example it is mounted on /ebs/expimp.
- DBFS has been setup and mounted on /dbfs/dbfs/ebs

```
#!/bin/ksh
```

```
#
sourceDir=/ebs/expimp
targetDir=/dbfs/dbfs/ebs
LOG=/ebs/expimp/DBFS_parallel.log
#
for fileName in `ls $sourceDir/*.dmp`
do
    time cp $fileName $targetDir >> $LOG &
done
```

## Listener.ora Files

### Initial listener.ora Files

#### Node 1

File Name: \$ORACLE\_HOME/network/admin/listener.ora file

```
LISTENER_VISMIG=(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=IPC)(KEY=
LISTENER_VISMIG)))) # line added by Agent
ENABLE_GLOBAL_DYNAMIC_ENDPOINT_LISTENER_VISMIG=ON # line added by Agent
#
SID_LIST_LISTENER_VISMIG =
  (SID_LIST =
    (SID_DESC =
      (ORACLE_HOME= /u01/app/oracle/product/11.2.0/ebsmig)
      (SID_NAME = VISMIG1)
    )
  )
```

#### Node 2

File Name: \$ORACLE\_HOME/network/admin/listener.ora file

```
LISTENER_VISMIG=(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=IPC)(KEY=
LISTENER_VISMIG)))) # line added by Agent
ENABLE_GLOBAL_DYNAMIC_ENDPOINT_LISTENER_VISMIG=ON # line added by Agent
#
SID_LIST_LISTENER_VISMIG =
  (SID_LIST =
    (SID_DESC =
      (ORACLE_HOME= /u01/app/oracle/product/11.2.0/ebsmig)
      (SID_NAME = VISMIG2)
    )
  )
```

## Database Preparation Script Output

### Set up the SYS schema

```
sqlplus "/" as sysdba" @audb1120

Connected.

-----
--- audb1120 started at 2010-06-04 08:50:56 ---
SQL>
SQL> select '--- audb1120 completed at '||
2         to_char(sysdate,'YYYY-MM-DD HH24:MI:SS')||' ---' " "
3   from dual;

...

```



```

...
-----
--- audb1120 completed at 2010-06-04 08:56:37 ---

1 row selected.

SQL>
SQL> spool off
SQL>
SQL> commit;

Commit complete.

SQL> exit;

```

### Set up the SYSTEM schema

```

sqlplus system/welcome1
SQL> @ausy1120

PL/SQL procedure successfully completed.

PL/SQL procedure successfully completed.
-----
--- ausy1120 started at 04-JUN-2010 09:01:24 ---

'---AUSY1120COMPLETEDAT'||TO_CHAR(SYSDATE,'DD-MON-YYYYHH24:M
-----
--- ausy1120 completed at 04-JUN-2010 09:01:25 ----

Commit complete.

```

### Install Java Virtual Machine

```

sqlplus system/welcome1
SQL> @aujv1120
Connected.

PL/SQL procedure successfully completed.

PL/SQL procedure successfully completed.

-----
--- aujv1120 started at 2010-06-04 09:02:46 ---

-----
--- Starting initjvm.sql 2010-06-04 09:02:46 ---
PL/SQL procedure successfully completed.

PL/SQL procedure successfully completed.

Session altered.

-----
--- Done with catexf.sql 2010-06-04 09:05:48 ---

-----
--- aujv1120 completed at 2010-06-04 09:05:48 ---

Commit complete.

```



## Install other required components

```

sqlplus system/welcome1
SQL> @aumsc1120.sql FALSE SYSAUX TEMP

Connected.

PL/SQL procedure successfully completed.

-----
--- aumsc1120 started at 2010-06-04 09:18:17 ---

-----
--- Starting catqm.sql2010-06-04 09:18:17 ---

Connected.

PL/SQL procedure successfully completed.
...
...
SQL> select '--- aumsc1120 completed at '||
  2         to_char(sysdate,'YYYY-MM-DD HH24:MI:SS')||' ---' " "
  3         from dual;

-----
--- aumsc1120 completed at 2010-06-04 09:26:43 ---

1 row selected.

```

## Export Parameter File

```

#$Header: auexpdp.dat 120.0 2007/07/18 20:42:38 gong noship $

directory=dmpdir_exp
dumpfile=aexp01%U.dmp, aexp02%U.dmp, aexp03%U.dmp, aexp04%U.dmp, aexp05%U.dmp,
aexp06%U.dmp, aexp07%U.dmp, aexp08%U.dmp, aexp09%U.dmp, aexp10%U.dmp,
aexp11%U.dmp, aexp12%U.dmp, aexp13%U.dmp, aexp14%U.dmp, aexp15%U.dmp,
aexp16%U.dmp
# 1 Gb dump file size
filesize=1048576000
full=y
exclude=SCHEMA:"='MDDATA'"
exclude=SCHEMA:"='OLAPSYS'"
exclude=SCHEMA:"='ORDSYS'"
exclude=SCHEMA:"='DMSYS'"
exclude=SCHEMA:"='OUTLN'"
exclude=SCHEMA:"='ORDPLUGINS'"
#transform=oid:n
logfile=expdpapps.log
# Added per note 741818.1
QUERY=applsystwf_item_attribute_values:"where item_type!='WFERROR' and name !=
'EVENT_MESSAGE'"
# Added but no basis of comparison to quantify its benefit. See Note 365459.1
PARALLEL=16
# Added per note 286496.1 to capture timings
METRICS=y

```

## Timestamp Script

This script can be used to prepend a timestamp to a file while it is being generated. This file is named tailTime.

```
#!/bin/bash
# tail of a file and add a timestamp to the output
#
export logfile=$1
tail -f $logfile | (
while true; do
read var; printf "%s " `date '+%y%m%d %H:%M:%S'` $var;
echo
done
)
echo "done!"
```

## Export Timings

Total time was 7:42:29

Longest processing was for the package body objects:

```
Completed 52696 PACKAGE_BODY objects in 10091 seconds (2:48:11)
```

## Import Parameter File (auimpdp.dat)

```
##Header: auimpdp.dat 120.0 2007/07/18 20:43:14 gong noship $

directory=dmpdir_mig
dumpfile=aexp%U.dmp
full=y
transform=oid:n
exclude=tablespace
#exclude=profile
#exclude=user
#exclude=role
#exclude=system_grant
#exclude=proc_system_grant
#exclude=role_grant
logfile=impdpapps.log
# Set to ((number of CPU's) * 2)
# Added but no basis of comparison to quantify its benefit. See Note 365459.1
parallel=16
# Added per note 286496.1 to capture timings
metrics=Y
```

## Import Timings

Total time was 16:11:58

A summary of the longest phases is:

- Processing object type DATABASE\_EXPORT/SCHEMA/SEQUENCE/GRANT/OWNER\_GRANT/OBJECT\_GRANT - 9 minutes
- Processing object type DATABASE\_EXPORT/SCHEMA/SYNONYM - 00:07:29
- Processing object type DATABASE\_EXPORT/SCHEMA/TABLE/TABLE - 00:58:44
- Processing object type DATABASE\_EXPORT/SCHEMA/TABLE/TABLE\_DATA - 00:32:23
- Processing object type DATABASE\_EXPORT/SCHEMA/TABLE/GRANT/OWNER\_GRANT/OBJECT\_GRANT- 04:57:23
- Processing object type DATABASE\_EXPORT/SCHEMA/TABLE/INDEX/INDEX - 02:53:54
- Processing object type DATABASE\_EXPORT/SCHEMA/TABLE/CONSTRAINT/CONSTRAINT - 00:06:32
- Processing object type DATABASE\_EXPORT/SCHEMA/PACKAGE/PACKAGE\_SPEC - 00:15:50
- Processing object type DATABASE\_EXPORT/SCHEMA/VIEW/VIEW - 00:21:58
- Processing object type DATABASE\_EXPORT/SCHEMA/VIEW/GRANT/OWNER\_GRANT/OBJECT\_GRANT - 00:05:00
- Processing object type DATABASE\_EXPORT/SCHEMA/PACKAGE\_BODIES/PACKAGE/PACKAGE\_BODY - 03:24:00
- Processing object type DATABASE\_EXPORT/SCHEMA/TABLE/STATISTICS/TABLE\_STATISTICS - 00:54:00
- Processing object type DATABASE\_EXPORT/SCHEMA/TABLE/INDEX/DOMAIN\_INDEX/INDEX - 00:25:32
- Processing object type DATABASE\_EXPORT/SCHEMA/TABLE/TRIGGER - 00:06:52

## genDropXLA.sql

```
set pages 0 head off feedback off lines 170 echo off trim on verify off
termout off timing on
spool dropXLA_AAD_Pkgs.sql
select distinct('drop package ' || db.owner || '.' || db.object_name ||
';')
from dba_objects db, xla_subledgers xl
where db.object_type='PACKAGE BODY' and db.object_name like 'XLA%AAD%PKG'
and substr(db.object_name,1,9) ='XLA_' ||
LPAD(SUBSTR(TO_CHAR(ABS(xl.application_id)), 1, 5), 5, '0')
and db.object_name NOT IN
('XLA_AAD_HDR_ACCT_ATTRS_F_PKG','XLA_AMB_AAD_PKG')
order by 1;
spool off
set timing on
@dropXLA_AAD_Pkgs
```

## References

1. Oracle Maximum Availability Architecture Web site  
<http://www.otn.oracle.com/goto/maa>
2. Oracle Exadata Database Machine  
<http://www.oracle.com/us/products/database/database-machine>
3. A Roadmap for Migrating Oracle E-Business Suite to the Oracle Exadata Database Machine [ID 1133355.1]
4. [Export/Import Process for Oracle E-Business Suite Release 12 Database Instances Using Oracle Database 11g Release 1 or 11g Release 2 \[ID 741818.1\]](#)
5. [Export/import notes on Applications 11i Database 11g \(ID 557738.1\)](#)
6. Oracle Database 11g Release 2 Upgrade Companion Note: [ID 785351.1]
7. [Oracle Applications Installation and Upgrade Notes Release 12 \(12.1.1\) for Linux x86-64 \[ID 761566.1\]](#)
8. [Oracle Database Utilities, 11g Release 2 \(11.2\)](#)
9. Interoperability Notes EBS R12 with Database 11gR2 [ID 1058763.1]
10. Oracle E-Business Suite Release 11i & R12 Patches Required with Oracle Database 11g Release 2 (11.2.0) on Exadata [ID 1392527.1]
11. [Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 12 \[ID 823587.1\]](#)
12. Steven Chan's [E-Business Suite Technology Blog](#)  
[11gR2 Database Certified with E-Business Suite 11i](#)  
[11gR2 Database Certified with E-Business Suite 12](#)
13. [Upgrade to 11g Performance Best Practices](#)
14. Data Pump Export of Small Schema Is Taking Hours Instead Of Minutes [ID 786068.1]
15. [Configuring DBFS on Oracle Database Machine \[ID 1054431.1\]](#)
16. Database Machine and Exadata Storage Server 11g Release 2 (11.2) Supported Versions [ID 888828.1]
17. Where Can I Find the Latest Version of Opatch? [ID 224346.1]
18. [Database Examples Installation Guide](#)
19. [bde\\_chk\\_cbo.sql - EBS initialization parameters - Healthcheck \[ID 174605.1\]](#)

20. Using Oracle 11g Release 2 Real Application Clusters with Oracle E-Business Suite Release 12 [ID [823587.1](#)]
21. Database Initialization Parameters for Oracle Applications Release 12 [ID [396009.1](#)]
22. 11gR2 Grid Infrastructure Does not Use ULIMIT Setting Appropriately [ID [983715.1](#)]
23. Parallel Capabilities of Oracle Data Pump [ID [365459.1](#)]
24. ORA-39000 ORA-31640 And Ora-27054 Errors On Invoking Data Pump Import [ID [739570.1](#)]
25. Database Machine Health Check [ID [1070954.1](#)]
26. DATAPUMP IMPORT DOESN'T USE MULTIPLE PARALLEL PX PROCESSES FOR INDEX CREATION [ID [1081069.1](#)]

## Change Record

| Date     | Summary of Changes  |
|----------|---|
| 2/8/13   | <ul style="list-style-type: none"> <li>Added <a href="#">NETWORK LINK</a> limitation.</li> </ul>  |
| 10/12/12 | <ul style="list-style-type: none"> <li>Added use of the USE_LARGE_PAGES database parameter to the following sections:               <ul style="list-style-type: none"> <li>“<a href="#">Create and prepare the Target init.ora File</a>”</li> <li>“<a href="#">Target Database Parameter File</a>”</li> </ul> </li> <li>Removed reference to MOS ID 983715.1 in the “<a href="#">Configure HugePages on Each Database Node</a>” section since it is no longer relevant from 11.2.0.3/BP5 and 11.2.0.2/BP16 onward.</li> </ul>   |
| 8/14/12  | <ul style="list-style-type: none"> <li>Fixed duplicate dumpfile keyword in the dumpfile line in the <a href="#">auexpdp.dat</a> export parameter file.</li> </ul>   |
| 7/9/12   | <ul style="list-style-type: none"> <li>Removed the “Apply Object Grants Performance patch” step from the “<a href="#">Preparing the Source-system</a>” section.</li> <li>Removed “It is also recommended on the source system so that grants are ordered by user on the export which will improve the import time.” Recommendation from the “Apply Object Grants Performance patch” step in the “<a href="#">Preparing the Target Database</a>” section. This was due to a large negative performance impact to the export when patch 10195109 was applied on the source system.</li> </ul> |
| 6/18/12  | <ul style="list-style-type: none"> <li>Under “<a href="#">Preparing the Source System</a>” added “** Apply XLA performance patch **” step.</li> <li>Under “<a href="#">Updating the Imported Database</a>” added step “Apply XLA performance patch” and replaced bug <a href="#">14085849</a> with bug 13344804.</li> </ul>   |
| 5/18/12  | <ul style="list-style-type: none"> <li>Under “<a href="#">Updating the Imported Database</a>” in step 6, “Re-create the XLA Packages” added a note and example workaround regarding bug <a href="#">14085849</a></li> </ul>   |
| 2/6/12   | <ul style="list-style-type: none"> <li>Reversed the order of this table</li> <li>Added reference to new MOS note Oracle E-Business Suite Release 11i &amp; R12 Patches Required with Oracle Database 11g Release 2 (11.2.0) on Exadata [ID <a href="#">1392527.1</a>]</li> </ul>  |



| Date      | Summary of Changes   |
|-----------|--|
| 9/26/2011 | <ul style="list-style-type: none"> <li>• Added a note under “<a href="#">Updating the Imported Database</a>” in step 11 about using the SCAN listener.</li> <li>• Updated “<a href="#">Database Examples Installation Guide</a>” link</li> <li>• Removed statement that you must set CLUSTER_DATABASE at database creation”. It must be unset or set to FALSE at database creation time.</li> <li>• Added optional steps to drop large XLA packages prior to export and recreate after import for performance benefit.</li> <li>• Added reference for migrating the applications tier to a new platform, MOS <a href="#">438086.1</a>.</li> <li>• Patch <a href="#">12353539</a> was replaced by <a href="#">13023290</a>. This new patch includes the XLA SQL script used to recreate the XLA packages after the import, .</li> </ul> |
| 8/15/11   | <ul style="list-style-type: none"> <li>• In “<a href="#">Preparing the Source System</a>” under “<a href="#">Remove Rebuild Index Parameter in Spatial Indexes</a>” removed the “@auque1” from the sqlplus command as that is an error.</li> <li>• Added details to export and import steps for excluding OLAP from Data Pump and pointers to manually export/import OLAP analytic workspaces using .</li> <li>• Fixed auque1.sql steps.</li> </ul>  |
| 6/10/11   | <ul style="list-style-type: none"> <li>• Fixed “Preparing the Target Database and Nodes” title under “Using Data Pump” to match the section title.</li> <li>• Clarified that the “<a href="#">Populate CTXSYS.DR\$\$SQE table</a>” step under “<a href="#">Updating the Imported Database</a>” is for Oracle E-Business Suite Release 12 only.</li> <li>• Added MOS reference for EBS 11i database initialization parameters under “<a href="#">Target Database Parameter File</a>” in the appendix, “Database Initialization Parameters for Oracle Applications Release 11i [ID <a href="#">216205.1</a>]”.</li> <li>• Under the “<a href="#">Updating the Imported Database</a>” section, added a step, “<a href="#">Re-create custom database links (conditional)</a>”</li> </ul>   |

| Date     | Summary of Changes  |
|----------|---|
| 5/6/11   | <ul style="list-style-type: none"> <li>• Patch <a href="#">7120092</a> was replaced by <a href="#">12353539</a>. This new patch includes removal of UNIFORM extent management in the generated aucrdb.sql script to create the target database, i.e. AUTOALLOCATE will be used for all Tablespaces except the TEMP Tablespaces.</li> <li>• Added the size of the Vision database to the “<a href="#">Test Environment Details</a>” section</li> <li>• Added patch 10195109 (includes 10185319) under the “<a href="#">Preparing the Source System</a>” and “<a href="#">Preparing the Target System</a>” sections.</li> </ul>   |
| 3/31/11  | <ul style="list-style-type: none"> <li>• Fixed numbering scheme under “Preparing the Source System” and “Preparing the Target Database and Nodes” sections.</li> </ul>  |
| 3/24/11  | <ul style="list-style-type: none"> <li>• Updated the Hugepages MOS note to <a href="#">361468.1</a>.</li> </ul>   |
| 2/17/11  | <ul style="list-style-type: none"> <li>• Added a note about the import parameter file EXCLUDE options.</li> </ul>   |
| 2/9/11   | <ul style="list-style-type: none"> <li>• Clarified why ‘as SYSDBA’ is used on the expdp and impdp commands.</li> <li>• Revised the jdbc_url connect string setting before running autoconfig on the applications tier to include both database nodes and eliminate the INSTANCE_NAME parameter.</li> <li>• Corrected use of CLUSTER=NO to CLUSTER=N</li> <li>• Added “Monitoring Job Status” to the export and import sections.</li> <li>• Added a note that patch <a href="#">8604502</a> is included in 11.2.0.2 and forward.</li> <li>• Added the rationale for installing the Database Examples CD</li> <li>• Changed database env. To point to the Grid Infrastructure network/admin directory.<br/> <pre> srvctl setenv database -d VISMIG -T TNS_ADMIN=/u01/app/11.2.0/grid/network/admin </pre> </li> <li>• Added point about upgrading the source database to 11.2. This may improve, in some cases significantly, the speed of the migration since the parallel capabilities of Data Pump are significantly better in 11.2 than they were in 10.2.</li> <li>• Added a pointer to the MAA paper, “<a href="#">Oracle E-Business Suite on Exadata</a>”</li> <li>• Removed the Executive Overview, merged some content into the Introduction.</li> </ul> |
| 11/10/10 | <ul style="list-style-type: none"> <li>• Typographical corrections</li> <li>• Changed “Sun Oracle Database Machine” to “Oracle Exadata Database Machine”</li> <li>• Changed “Support Note” to “MOS ID”</li> <li>• Combined load balancing and parallel concurrent processing under “Further Configuration” section</li> <li>• Removed “Deregister the current database server” in the “Prepare Source System” section</li> <li>• Added a note and reference on RAC 11.2 SCAN</li> </ul>   |

| Date      | Summary of Changes  |
|-----------|---|
| 8/25/2010 | <ul style="list-style-type: none"><li data-bbox="479 331 933 363">• Added this “Change Record” section</li><li data-bbox="479 363 1344 426">• Added a bold note to ensure that <a href="#">1058763.1</a> is consulted for up to date patching information</li></ul> |
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Migrating Oracle E-Business Suite to Sun  
Oracle Database Machine Using Oracle Data  
Pump

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