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Using Oracle Applications with an Itanium Database Server

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This document describes the procedure for deploying an Oracle9*i* Release 2 Applications Release 11*i* database on a 64-bit Intel Itanium server, for example to improve scalability.

> **Note:** This procedure applies to the HP-UX Itanium, Linux Itanium, and Windows Server 2003 Itanium operating systems.

The most current version of this document is Note 304489.1 on Oracle*MetaLink*.

> **Attention:** Windows users. This document uses UNIX syntax when specifying directories. Substitute the appropriate Windows syntax where necessary.

Conventions

Convention	Meaning
Application Tier	Machines running Forms, Web, and other servers. Also called middle tier.
Database Tier	Machines running Oracle Applications database.
APPLMGR	User who owns the applications file system (APPL_TOP and application tier technology stack).
ORACLE	User who 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>_<hostname>. For systems installed with Rapid Install 11.5.8 or earlier, the context name will typically be <SID>.
CONTEXT_FILE	Full path to the *Applications context file* on the application tier or database tier. The default locations are as follows.

	Application tier context file:
	`<APPL_TOP>/admin/<CONTEXT_NAME>.xml`
	Database tier context file:
	`<RDBMS ORACLE_HOME>/appsutil/<CONTEXT_NAME>.xml`

APPSpwd	Oracle Applications database user password.
`Monospace Text`	Represents command line text. Type this command exactly as shown.
< >	Text enclosed in angle brackets represents a variable. Substitute a value for the variable text. Do not type the angle brackets.
\	The backslash character is entered at the end of a command line to indicate continuation of the command on the next line.

Section 1: Introduction

Oracle Applications is made up of a three-tier architecture, where a tier is a logical grouping of services that may be distributed across one or more physical machines.

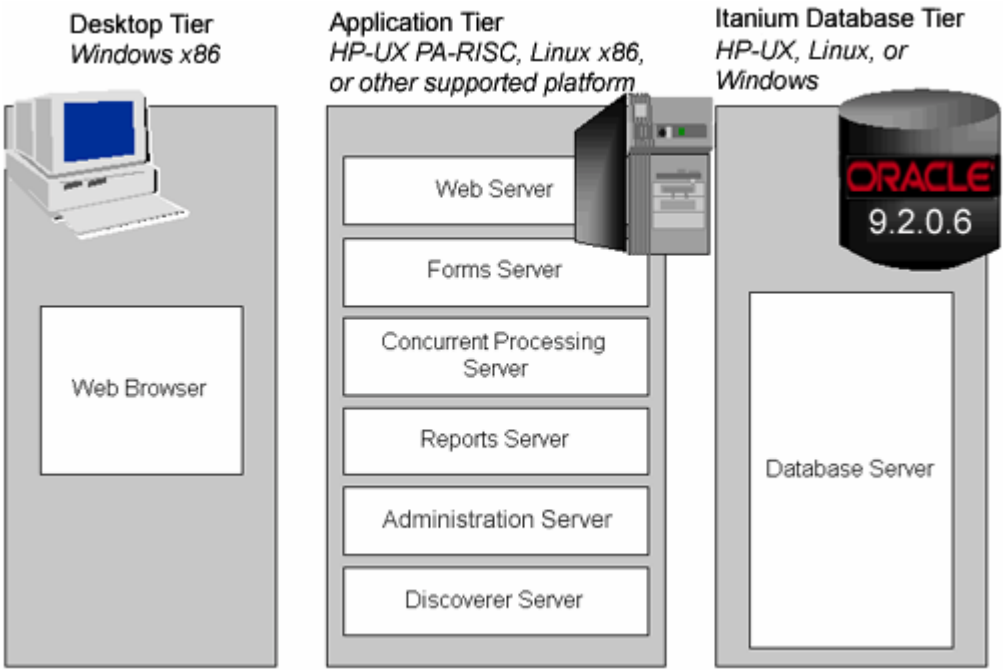

Figure 1: Oracle Applications three-tier architecture using an Intel Itanium database server

Deploying Oracle Applications Release 11*i* with an Itanium-based database server is an example of a *mixed* platform architecture, where the platform used for the application tier is differerent from the platform used for the database tier. This enables use of database platforms that do not support the application tier components of Oracle Applications.

Note: Refer to Oracle Applications Concepts for a complete description of the Oracle Applications architecture and definition of terms.

The steps in the following sections guide you through the process of migrating an Oracle Applications database on a non-Itanium system to an Intel Itanium machine.

Section 2: Prerequisites

This section describes the requirements for Applications releases, software component versions, and patch installation that must be met before the database is migrated to 9.2.0.6 or higher on Itanium.

1. **Make any necessary software version upgrades**

Software	Minimum Version	Location	Details
Oracle Applications Release	11.5.8	Database tier and Application tier	Your system must be Release 11.5.8 or higher. Release 11.5.10 is recommended.
AutoConfig	ADX.E.1	Database tier and Application tier	Implement AutoConfig and/or upgrade to ADX.E.1 or higher. See Oracle *MetaLink* Note 165195.1, Using AutoConfig to Manage System Configurations with Oracle Applications 11*i*.
Database	9.2.0	Database tier	The original (source) database must be 9.2.0 or higher. See Oracle*MetaLink* Note 216550.1, Interoperability Notes: Oracle Applications Release 11*i* with Oracle9*i* Release 2 (9.2.0).

2. **Apply patch 3418979 (Windows application tier only)**

   For Oracle Applications 11.5.9 (or lower) on Windows, you must enable future application tier connectivity to the new Itanium database instance by applying patch 3418979 to every APPL_TOP. AutoConfig must be run after the patch has been installed.

3. **Create the RDBMS ORACLE_HOME on the Itanium machine**

   Install Oracle9*i* Database Release 9.2.0.2 on the Itanium machine. For more information, read the Installation Guide (contained within the Oracle9*i* Database Release 2 Documentation) for your Itanium platform. Perform this step before the actual migration to reduce downtime.

Note: You must use the same ORACLE_SID and the same path for the ORACLE_HOME on the target machine as on the original source machine. After completion of the steps in this document, you may change the ORACLE_SID and propagate that change using Rapid Clone (see Oracle*Metalink* note 230672.1).

4. **Update the RDBMS ORACLE_HOME on the Itanium machine**

   Apply the latest Oracle9*i* Release 2 patchset (9.2.0.*x*, where *x* is 6 or higher) to the RDBMS ORACLE_HOME on the Itanium machine. Perform this step before the actual migration to reduce downtime.

Attention: A full backup of the Oracle Applications system should be taken before carrying out the migration to Itanium, over and above normal backup procedures.

Section 3: Migration Procedure

Perform the steps below to migrate from the original platform to the target Itanium platform.

Note: Perform the step 4 option appropriate to your original and target platform. Migrating from HP-UX PA-RISC to HP-UX Itanium, from Linux 32-bit to Linux Itanium, and from Windows x86 to Windows Itanium are all special cases. While the source and target platforms are not binary compatible, similarity between the file systems simplifies the migration process and eliminates the need to do an export/import procedure.

Note: The Oracle Applications system will be unavailable during the migration process.

1. **Shut down the application tier services**
   Log on to each machine in the application tier and stop the Oracle Applications services.

   ```
   $ cd <COMMON_TOP>/admin/scripts/<CONTEXT_NAME>
   $ adstpall.sh apps/<APPSpwd>
   ```

2. **De-register the original database server machine**
   De-register the original database server machine from the AutoConfig repository in the Applications database.

   As the ORACLE user, log on to the machine with the existing database and run the following commands:

   ```
   $ cd <RDBMS ORACLE_HOME>/appsutil/bin
   $ perl adgentns.pl appspass=<APPSpwd> \
   contextfile=<CONTEXT_FILE> -removeserver
   ```

3. **Create a .trc file to use as template to re-create the control files on the Itanium machine**
   Run the following command on the source database to create a .trc file, which you will use to recreate the control files on the target machine in a later step.

   ```
   $ sqlplus/nolog
   SQL> connect / as sysdba
   SQL> alter database backup controlfile to trace
   ```

4. **Shut down the original (source) database**
   Perform a SHUTDOWN NORMAL on the source database, and stop the database listener.

5. **(Option A) Migrate HP-UX PA-RISC database to HP-UX Itanium**
   Follow these steps to migrate the database from HP-UX PA-RISC to HP-UX Itanium:

   a. Copy the database (.dbf) files from the HP-UX PA-RISC machine to the Itanium machine
   b. Copy the database configuration files from the HP-UX PA-RISC machine to the Itanium machine
   c. Recreate the database control files

   Refer to "Migrating from HP-UX for PA-RISC to HP-UX for IPF" in Oracle9i Release Notes Release 2 (9.2.0.2.0) for HP-UX 11i version 1.6 for the Intel Itanium Processor Family for detailed instructions.

5. **(Option B) Migrate Linux 32-bit database to Linux Itanium**
   Perform the following steps to move the Linux 32-bit database on to the Linux Itanium machine:

   a. Copy the database (.dbf) files from the Linux 32-bit machine to the Itanium machine
   b. Copy the database configuration files
   c. Copy the Oracle initialization parameter file (init.ora)
   d. Modify the configuration files as specified in the database documentation

e. Modify the init.ora to set _system_trig_enabled=false
f. Start up the database
g. Recreate the database control files
h. Upgrade the database from 32-bit to 64-bit (recompile pl/sql modules and change the word size) by running utlirp.sql
i. Remove _system_trig_enabled=false from init.ora
j. Update natively compiled java objects

Refer to "Database Migration" in Oracle9i Release Notes Release 2 (9.2.0.2.0) for Linux Intel on Itanium (64-bit) for detailed instructions.

5. **(Option C) Migrate Windows x86 database to Windows Server 2003 Itanium**
Follow these steps to migrate the database from Windows x86 to the Windows Itanium machine:

a. Copy the database (.dbf) files from the Windows x86 machine to the Itanium machine
b. Copy the database configuration files (including init.ora)
c. Modify the configuration files as specified in the database documentation; this includes setting _system_trig_enabled="false"
d. Start up the database
e. Recreate the database control files
f. Upgrade the database from 32-bit to 64-bit (recompile pl/sql modules and change the word size) by running utlirp.sql
g. Remove _system_trig_enabled=false from init.ora

Refer to "Migrating an Oracle9*i* Database" in Oracle*MetaLink* Note 237218.1, Oracle9i Database and Client Release Notes Release 2 (9.2.0.2.1) for 64-Bit Windows for detailed instructions.

5. **(Option D) Migrate database on other platform to HP-UX, Linux, or Windows Server 2003 Itanium**
In the case when the original database operating system and architecture is different from that of Itanium, with the exceptions of HP-UX PA-RISC, Linux 32-bit and Windows x86, the original database must be exported and then imported into the newly created Itanium database. For this scenario, follow the procedure described in Oracle*MetaLink* Note 230627.1, Export/Import Process for Oracle Applications Release 11i to migrate the database.

6. **Apply required patches to the new database**
The RDBMS ORACLE_HOME is already at the latest Oracle9*i* Release 2 patchset level based on the upgrade you performed in "Section 2: Prerequisites". You now need to apply additional patches as indicated in Section 2 of Oracle*MetaLink* Note 216550.1, Interoperability Notes: Oracle Applications Release 11i with Oracle9i Release 2 (9.2.0).

7. **Implement AutoConfig and configure the Itanium machine**

a. **Define environment variable settings on Itanium machine**

Environment Variable	Value
ORACLE_HOME	9.2.0.*x* ORACLE_HOME (where *x* is 6 or higher)
ORACLE_SID	9.2.0.*x* database SID (where *x* is 6 or higher)
TNS_ADMIN	Directory with TNSNAMES.ORA file

Attention: Windows users. The AutoConfig utility is not yet certified on Windows Itanium, so you must skip the following step.

b. **Implement AutoConfig on the new database tier (Linux Itanium and HP-UX Itanium only)**

Follow the instructions in Oracle*MetaLink* Note 165195.1, Using AutoConfig to Manage System

Configurations with Oracle Applications 11*i* to create the ORACLE_HOME environment and register the Itanium database server machine in the AutoConfig repository.

8. **Reconfigure the application tier to connect to the Itanium database machine**
   You are now ready to reconfigure the application tier to use the Itanium database server. Log on to each application tier machine and perform the following steps:

   a. **Update the application tier context file**
   Update the following variables in the Applications context file to match the Itanium database configuration:

Variable Name	Value
s_dbhost	New database hostname
s_dbdomain	New database domain name
s_db_serv_sid	New database SID
s_dbport	New database listener port
s_apps_jdbc_connect_descriptor	NULL

   b. **Run AutoConfig on the application tier**
   Make sure that the new database is running, and run AutoConfig on the application tier:

```
$ cd <COMMON_TOP>/admin/scripts/<CONTEXT_NAME>
$ adautocfg.sh
```

   c. **Start all application tier services**
   Restart all application tier services on the application tier.

```
$ adstrtal.sh apps/<APPSpwd>
```

Section 4: Post-Migration Tasks

Verify that the application tier is configured to use the Itanium database:

1. **Verify the database server hostname and database release version**
   Go to the Oracle Applications Rapid Install Portal, and log on to the E-Business Suite home page as the sysadmin user. Select a responsibility (such as the System Administrator responsibility). Click on any form, such as the Concurrent->Requests form. From the Help menu click "About Oracle Applications", and verify that the server hostname and release version correspond to those of the Itanium database.

2. **Run Diagnostics for HTML-based Applications (Self-service)**
   Return to the E-Business Suite home page and select the System Administration responsibility. Click on each link in the Diagnostics section.

3. **Run CRM Diagnostics**
   Return to the E-Business Suite home page and select the CRM HTML Administrator responsibility. Click on Diagnostics, and select the Basic tab. Click on Run All Groups, and examine the test results.

Change Log	
Date	**Description**
March 17, 2004	Initial release of 9.2.0.4 Windows Itanium version (Note 265752.1)
April 29, 2005	Added HP-UX and Linux Itanium, changed to address 9.2.0.6 and higher
May 17, 2005	Fixed typos in Section 3, Steps 7b. and 7c.
June 30, 2005	Added Linux x86 to Linux Itanium migration details
August 30, 2005	Modified to specify upgrade of target Oracle home before migration, to specify trace file creation, to restrict changing of SID, and to add Windows Itanium support.