Migrating Oracle Database Workloads to Oracle Linux on AWS

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Notices

Contents

Abstract

Oracle databases can run on different operating systems (OS) in on-premises data centers such as Solaris (SPARC), IBM AIX, and HP-UX. Amazon Web Services (AWS) supports Oracle Linux 6.4 and higher for Oracle databases. This whitepaper highlights the migration paths available between different operating systems to Oracle Linux on AWS. These migration paths are applicable for migrations from any source—on-premises, AWS, or other public cloud environments.

Introduction

Oracle workloads benefit tremendously from many features of the AWS Cloud, such as scriptable infrastructure, instant provisioning and de-provisioning, scalability, elasticity, usage-based billing, managed database services, and the ability to support a wide variety of operating systems (OSs). When migrating your workloads, choosing which operating system to run them is a crucial decision. We highly recommend that you choose an Oracle-supported operating system to run Oracle software on AWS.

You can use the following Oracle-supported operating systems on AWS:

- Oracle Linux

- Red Hat Enterprise Linux

- SUSE Linux Enterprise Server

- Microsoft Windows Server

Specific Oracle-supported operating systems can be used for specific database, middleware, and application workloads. For example, SAP workloads on AWS require that Oracle Database be run on Oracle Linux 6.4 or higher.[1]

You have many methods for migrating your Oracle databases to Oracle Linux on AWS. This whitepaper documents the different migration paths available for the various source operating systems. It covers migrations from any source—on-premises, AWS, or other public cloud environments. Each migration path offers distinct advantages in terms of downtime and human effort. You can choose the best migration path for your business based on your specific needs.

Amazon RDS

For most workloads, a managed database service is the preferred method. Amazon Relational Database Service (Amazon RDS) is a managed service that makes it easy to set up, operate, and scale a relational database in the cloud. It provides cost-efficient and resizable capacity while automating time-consuming administration tasks such as hardware provisioning, database setup, patching and backups. It frees you to focus on your applications so you can give them the fast performance, high availability, security, and compatibility they need. Amazon RDS is available on several database instance types—optimized for

memory, performance, or I/O. In addition, Amazon RDS provides you with six familiar database engines to choose from, including Amazon Aurora, PostgreSQL, MySQL, MariaDB, Oracle, and Microsoft SQL Server. You can use the AWS Database Migration Service (AWS DMS) to easily migrate or replicate your existing databases to Amazon RDS.

Amazon RDS for Oracle supports Oracle Database Enterprise Edition, Standard Edition, Standard Edition 1, and Standard Edition 2. RDS Oracle Standard Editions support both Bring Your Own License (BYOL) and License Included (LI). If you are exploring other database platforms, Amazon RDS offers you a choice of database engines and tools such as AWS DMS and AWS Schema Conversion Tool (AWS SCT) to make the migration process easier.

Oracle Linux AMI on AWS

If you choose not to use a managed database, and instead manage the Oracle database yourself, you can deploy it on Amazon Elastic Compute Cloud (Amazon EC2). Oracle Linux EC2 instances can be launched using an Amazon Machine Image (AMI) available in the AWS Marketplace or as a Community AMI. You can also bring your own Oracle Linux AMI or existing Oracle Linux license to AWS. Your technology stack would then be similar to the one used by Amazon RDS for Oracle, which also runs on Linux-based operating systems.

Use migration tools such as Oracle Data Pump Export/Import or AWS DMS. These tools take care of migration from different OS platforms to RDS for Oracle.

The AWS Marketplace listing for Oracle Linux is through third-party vendors. You will find a list of Community AMIs and Public AMIs by searching for the term "OL6" or "OL7." Public AMI listings are available in the Amazon Elastic Compute Cloud (Amazon EC2) Console under **Images**, then **AMI**.

Two types of AMIs are available for the same release version:

- Hardware Virtual Machine (HVM)

- Paravirtual Machine (PVM)

HVM is an approach that uses virtualization features of the CPU chipset. If a virtual machine runs in HVM mode, the kernel of the OS may run unmodified.

PVM does not use virtualization features of the CPU chipset. PVM uses a modified kernel to achieve virtualization. AWS supports both HVM and PVM AMIs. The Unbreakable Enterprise Kernel for Oracle Linux natively includes PV drivers. SAP has specific recommendations of HVM-virtualized AMIs for SAP installations.[2] The Oracle Linux AMI published by Oracle are available in the list of Community AMIs in AWS Marketplace. Community AMIs do not have any official support. Refer to the following table for some of the AMI listings:

Version	AMI
Oracle Linux 7.3 HVM	OL7.3-x86_64-HVM
Oracle Linux 7.3 PVM	OL7.3-x86_64-PVM
Oracle Linux 7.2 HVM	OL7.2-x86_64-HVM
Oracle Linux 7.2 PVM	OL7.2-x86_64-PVM
Oracle Linux 6.7 HVM	OL6.7-x86_64-HVM
Oracle Linux 6.7 PVM	OL6.7-x86_64-PVM

Anyone can upload and share an AMI. Use caution when selecting an AMI. Reach out to AWS Business Support or your vendor support for assistance.

In addition to an existing AMI, you can import your own virtual machine images as AMIs in AWS. Refer to the VM Import/Export page for more details.[3] This option is highly useful when you have heavily customized virtual machine images available in other cloud environments or your own data center.

Support and Updates

Oracle offers Basic, Basic Limited, Premier, and Premier Limited commercial support for Oracle Linux EC2 instances. Refer to Oracle's cloud license document for the instance requirements.[4] The following table shows the level of support available for various AMI options.

Option	Support level
AWS Marketplace	Basic Support and Basic Limited
BYOL (Bring Your Own License)	Basic Basic Limited (up to 8 virtual cores) Premier Premier Limited (up to 8 virtual cores)
Community AMI	No commercial support

If you have an Oracle Linux support contract, you can register your EC2 instance using the `uln_register` command on your EC2 instance. This command requires you to have access to an Oracle Linux CSI number. Review the [Oracle Linux Unbreakable Linux Network (ULN) user guide](#) on the steps for ULN channel subscription and how to register your Oracle Linux instance.[5]

Oracle Linux instances require internet access to the [public yum repository](#)[6] or [Oracle ULN](#)[7] in order to download packages. All Oracle Linux AMIs can access the public yum repository. Only licensed Oracle Linux systems can access the Oracle ULN repository. If the EC2 instance is on a private subnet, use a proxy server or local yum repository to download packages. Oracle Linux systems (OL6 or higher) work with the [Spacewalk](#) system for yum package management.[8] A Spacewalk system can be in a public subnet while Oracle Linux systems can be in a private subnet.

The following sections detail migration path methods available for Oracle databases. These migration methods are available for Oracle 10g, 11g, and 12c. For other Oracle products, see the respective product support notes in Oracle's [MyOracleSupport](#) portal.

Migration Path Matrix

A migration path matrix assumes that only the operating systems change and other software versions remain the same. We recommend that you change other components, such as the Oracle database version or Oracle database patching, separately to avoid complexity. The database version and any other application version in both source and target EC2 instances should remain the same to prevent deviations in the migration path. There are also vendor data replication and migration tools available that can support platform migration. Refer to the [Migration Methods](#) section for the list of methods.

Source database operating system	Migration methods
Red Hat Linux	Amazon EBS snapshot Oracle Data Guard
SUSE Linux	Amazon EBS snapshot Oracle Data Guard

Source database operating system	Migration methods
Microsoft Windows	Oracle Data Guard 11g RMAN Transportable Tablespace
HP-UX, Solaris (SPARC)	RMAN Cross-platform Transportable Tablespace

Migration Paths

This section presents three methods for migrating to Oracle Linux on AWS.

Red Hat Linux to Oracle Linux

Oracle Linux and Red Hat Linux are compatible operating systems. When migrating from Red Hat Linux to Oracle Linux, migrate to the same version level, for example, Red Hat Linux 6.4 to Oracle Linux 6.4, or Red Hat Linux 7.2 to Oracle Linux 7.2. Also ensure that both operating systems are patched to the same level.

The following are the two methods for migrating Red Hat Linux to Oracle Linux:

1. Amazon Elastic Block Store (Amazon EBS) snapshot
2. Oracle Data Guard

An EBS snapshot is a faster migration method than Oracle Data Guard for non-Oracle Automatic Storage Management (ASM) databases. If your databases use Oracle ASM, then Oracle Data Guard is a better choice.

Other standard methods, such as the Oracle Recovery Manager (RMAN) and Oracle Export and Import utilities, can work across operating systems. However, these methods have large downtime need and require a greater amount of human effort. Choose the Export and Import utilities method if your specific use case requires it. Refer to the Migration Methods section for details on each migration method.

SUSE Linux to Oracle Linux

SUSE Linux Enterprise Server (SLES) is an enterprise-grade Linux offering from SUSE. Oracle Linux and SUSE Linux are binary compatible. That is, you

can move an executable directly from SUSE Linux to Oracle Linux, and it will work. It must match the same C compiler and bit architecture (32-bit or 64-bit). SLES follows a different versioning scheme than Oracle Linux, so there is no easy way to match similar operating system versions. Additionally, the Linux kernel version, gcc versions, and bit architecture must match. Contact SLES Technical Support to find which Oracle Linux version is compatible with the SLES operation system.

SLES Linux can also be migrated using EBS snapshots and Oracle Data Guard, just as you can do with Red Hat Linux. Again, these methods have less downtime and require less human effort than Oracle RMAN or Oracle Export/Import.

An EBS snapshot is a much quicker and simpler method than Oracle Data Guard. Whichever method you select, we recommend that you don't copy the binaries from SLES, but rather perform a fresh Oracle home installation on your Oracle Linux EC2 instance. The reason for this recommendation is to properly generate the Oracle Inventory directory (oraInventory) in the new Oracle Linux EC2 instance and also have the files created by root.sh. Simply copying Oracle home may not create oraInventory, and root.sh may not create the new files. Also ensure the patch level of the newly created database binary home is exactly the same as the one in the SLES instance. Refer to the [Migration Methods](#) section for details on each of the migration methods.

Microsoft Windows to Oracle Linux

Microsoft Windows is a completely different operating system than the various types of Linux operating systems. The following migration methods are available for Windows:

- Oracle Data Guard (heterogeneous mode)

- Oracle RMAN transportable tablespace (TTS) backup and restore

The Oracle Data Guard method requires much less downtime compared to the Oracle RMAN TTS method. The RMAN TTS method still requires copying the files from your on-premises data center or source database servers to AWS. Files of significant size will extend the migration time. There are several methods available, such as AWS Export/Import and AWS Snowball, which can handle the migration of large volumes of files. Transferring large volume of files

over the network takes time. AWS Export/Import and AWS Snowball can help by migrating the data offline using physical media devices.

Refer to the [Migration Methods](#) section for details on each of the migration methods.

Migration Methods

Your choice of migration method will depend on your specific use case and context. Repeated testing and validation is necessary before finalizing and performing on the production workload.

Amazon EBS Snapshot

An EBS snapshot is a storage-level backup mechanism. It preserves the contents of the EBS volume as a point-in-time copy. If you are migrating databases from RHEL or SUSE to Oracle Linux, EBS snapshot is one of the fastest migration methods. This method is applicable only if the source database is already on AWS and running on Oracle EBS storage. It is not applicable for on-premises databases or non-AWS Cloud services.

The high-level migration steps are:

1. Create a new Amazon EC2 instance based on Oracle Linux AMI.

2. Install an Oracle home on the new Oracle Linux EC2 instance.

3. Create the new database parameter files and TNS files.

4. Take an EBS snapshot of the volumes in the older EC2 instance (Red Hat Linux, SUSE Linux). If possible, we recommend that you take an EBS snapshot during downtime or off-peak hours.

5. Create a new volume based on the EBS snapshot and mount it on your Oracle Linux EC2 instance.

6. Perform the post-migration steps, such as verifying directory and file permissions.

7. Start the Oracle database on the Oracle Linux EC2 instance.

You can take a snapshot of the Oracle home as well as the database files. However, we recommend that you install Oracle home binaries separately on

the new Oracle Linux EC2 instance. The Oracle home installation creates a few files in operating system root that may not be available if you create a snapshot and mount the binary home.

The EBS snapshot can be taken while the database is running, but the snapshot will take longer to complete.

Conditions for Taking an Amazon EBS Snapshot

- When you create the new volume on the target Oracle Linux EC2 instance ensure that the volume has the same path as the source EC2 instance.

   o If database files reside in the /oradata mount in the source EC2 instance, the newly created volume from the snapshot should be mounted as /oradata in the target Oracle Linux EC2 instance. It is also recommended, but not required, to keep the Oracle database binary home the same between source and target EC2 instances.

- The Unix ID number for the Oracle user and the dba and oinstall groups should be the same number as the source operating system.

   o For example, the Oracle Linux 11g/12c pre-install rpm creates an Oracle user with Unix ID number 54321, which may not be the same as the source operating system ID. If it is different, change the Unix ID number so that both source and target EC2 instances match.

- An EBS snapshot works well if all the database files are in the single EBS volume. The complexity of an EBS snapshot increases when you use multiple EBS volumes or you use Oracle ASM. Refer to Oracle MOS Note 604683.1 for recovering crash-consistent snapshots.[9] Oracle 12c has additional features to recover from backups taken from crash-consistent snapshots.

Refer to this link on how to create and manage Amazon EBS snapshots.[10]

Oracle Data Guard

Oracle Data Guard technology replicates the entire database from one site to another. It can do physical replication as well as logical replication. Oracle Data Guard operates in homogenous mode if the primary and standby database operating systems are the same. The normal Oracle Data Guard setup would

work in this case. However, if you are migrating from 32-bit to 64-bit, or from AMD to Intel processors, or vice versa, it is considered to be a heterogeneous migration even if the operating system is the same. Heterogeneous mode requires additional patches and steps while operating Oracle Data Guard.

Homogenous Mode

In homogenous mode, the source and destination operating systems are the same. Oracle Data Guard will send the changes from the primary (source) database to the standby database. If physical replication is set up, the changes of the entire database are captured in redo logs. These changes are sent from the redo logs to the standby database. The standby database can be configured to apply the changes immediately or at a delayed interval. If logical replication is set up, the changes are captured for a configured list of tables or schemas. Logical replication does not work for the use case of migrating the entire database unless your situational constraints require it. Refer to Oracle Data Guard documentation for both physical and logical standby setups.[11]

Heterogeneous Mode

In heterogeneous mode, Oracle Data Guard allows primary and standby databases in different operating systems and different binary levels (32-bit or 64-bit). Until Oracle 11g, Oracle Data Guard required that both primary and standby databases have the same operating system level. From 11g onward, Oracle Data Guard has been in heterogeneous mode. This allows Oracle Data Guard to support mixed mode configurations. The source primary database can have a different operating system or binary level. Heterogeneous set up of Oracle Data Guard is recommended for large and very large databases. We present a few suggestions below, which can further optimize your migration.

It is essential that Oracle database home on Windows and Linux has the latest supported version of the database (11.2.0.4 or 12.1.0.2) along with latest quarterly patch updates. Multiple migration issues were fixed in the latest patch updates.

Due to the mixed operating systems in the migration path, we recommend that you use the Data Guard command line interface (DGMGRL) to set up Oracle Data Guard and perform role transition.

See Oracle MOS Note 413484.1 for more details on using Oracle Data Guard to transition from Microsoft Windows to Linux.[12] This migration requires some

additional patches, which are detailed in the Note. Also see MOS Note [414043.1](#) for the role transition when you migrate from Windows 32-bit to Oracle Linux 64-bit.[13]

Detailed steps for setting up Oracle Data Guard between Windows and Linux is available in Oracle MOS Note [881421.1](#).[14]

To set up Oracle Data Guard between Windows and Linux, Oracle mentions the RMAN Active Duplicate method. However, this method impacts source database performance and creates heavy network traffic between source and target database servers.

An alternative method for Active Duplicate is to use the RMAN cross-platform backup method (Oracle MOS Note [1079563.1](#)):[15]

1. Take an EBS snapshot of the Oracle database on Windows. Mount it in another Windows server in STARTUP MOUNT stage.

2. Create an RMAN cold backup of the newly mounted Oracle database on Windows. This step is to avoid error as mentioned in Oracle MOS Note [2003327.1](#).[16]

3. Copy the RMAN backup files to Linux using SFTP or SCP.

4. On Oracle Linux, issue the duplicate database for standby command using RMAN backup files. This step replaces the duplicate command in Step 3 of Oracle MOS Note [1079563.1](#).[17]

```
DUPLICATE TARGET DATABASE FOR STANDBY BACKUP LOCATION='<full
path of RMAN backup file location in Oracle Linux>'
NOFILENAMECHECK;
```

You can use SQL commands or DGMGRL to start Oracle Data Guard synchronization between the primary database on Windows and the standby database on Oracle Linux.

Refer to the role transition notes mentioned earlier to switch the primary database from Windows to Linux.

If the source database contains Oracle OLAP, refer to Oracle MOS Note
352306.1.[18] It is recommended to back up the user-created OLAP Analytical
Workspace ahead of time using the Export utility.

Oracle RMAN Transportable Database

Oracle recommends the Oracle RMAN TTS method when migrating from
completely different operating systems. If the underlying chipset is different,
such as Sun SPARC and Intel, then Oracle recommends you use the cross-
platform transportable tablespace (XTTS) method. Different chipsets have
different endian formats. Endian format dictates the order in which the bytes
are stored underneath. The Sun SPARC chipset stores bytes in big-endian
format, while the Intel series stores them in little-endian format. TTS can be
used when both Windows and Oracle Linux are running on same chipset, e.g.,
Intel 64-bit.

Oracle has published a detailed step-wise guide to migrate from the Windows
(Intel) platform to the Linux (Intel) platform using RMAN TTS.[19] This method
migrates the entire database at once, instead of just individual tablespaces. This
method involves making your source Windows database read-only and requires
downtime. Hence, this method is advised for small- and medium-sized
databases under 400 GB and wherever downtime can be accommodated. For
large databases, run Oracle Data Guard in heterogeneous mode.

Oracle RMAN Cross-Platform Transportable Database

If you are migrating from different endian platforms like Sun/HP, refer to
Oracle MOS Note 371556.1 for detailed step-by-step instructions.[20] This method
uses the XTTS method in RMAN.

It is possible to reduce downtime if you are migrating from Oracle Database 11g
or higher using cross-platform incremental backup. Refer to Oracle MOS Note
1389592.1 for step-wise instructions.[21] Review the Oracle whitepaper on using
RMAN 11g XTTS best practices and recommendations.[22]

Oracle Data Pump Export/Import Utilities

Oracle Data Pump Export/Import utilities can migrate from different endian formats. It is a more time-consuming method than Oracle RMAN, but it is useful when you want to combine it with other variables, such as when you want to migrate certain schemas from Oracle 10g on an HP-UX on-premises server to Oracle 11g on Oracle Linux on AWS. In order to reduce the downtime, leverage parallel methods in Oracle Data Pump Export/Import. See Oracle's whitepaper on parallel Data Pump for recommendations on how to leverage it.[23]

AWS Database Migration Service

AWS Database Migration Service (DMS) is a managed service that you can use to migrate data from on-premises or your Oracle DB instance to another EC2 or RDS instance. AWS DMS supports Oracle versions 10g, 11g, and 12c in both the source and the target instances. A key advantage of AWS DMS is that it requires minimal downtime.

AWS SCT can be used together with AWS DMS. It analyzes the source database and generates a report on which automatic and manual migration steps will be required for the given source and target combination. This report helps in planning your migration activities.

AWS DMS does not migrate PL/SQL objects, but AWS SCT helps you locate them, and alerts you on the migration step needed. You can use Oracle Data Pump Export/Import filters to migrate the PL/SQL objects.

AWS DMS supports Oracle ASM at source. AWS DMS can also replicate data from the source database to the destination database on an on-going basis. You can also use it to replicate the data until cutover is complete. AWS DMS can use both Oracle LogMiner and Oracle Binary Reader for change data capture. Refer to the AWS documentation on available configuration options and known limitations for source Oracle database.[24]

Other Database Migration Methods

There are other methods that can help in database migration across operating system platforms. Oracle MOS Note 733205.1 provides a generic overview of some of the methods like RMAN Duplicate or Oracle GoldenGate.[25] Some

enterprise applications have additional tools and migration paths that are specific to their own applications. Finally, there are independent software vendors that offer database migration tools on the AWS Marketplace. One of these tools may be the best fit for your scenario.

Enterprise Application Considerations

SAP Applications

If you're running your SAP applications with Oracle database, you have many methods for migrating from one operating system to another. All of the following migration methods are supported by SAP.

> **Note:** You need to follow standard SAP system copy/migration guidelines to perform your migration. SAP requires that a heterogeneous migration be performed by SAP-certified technical consultants. Check with SAP support for more details.

SAP Software Logistics Toolset

Software Provisioning Manager (SWPM) is a Software Logistics (SL) Toolset provided by SAP to install, copy, and transform SAP products based on SAP NetWeaver AS ABAP and AS Java. You can use SWPM to perform both heterogeneous and homogenous migrations. If the endian type of your source operating system is the same as the target, then your migration is considered a homogenous system copy. Otherwise, it is considered a heterogeneous system copy or migration. The SWPM tool uses R3load export/import methodology to copy or migrate your database. If you need to minimize the migration downtime, consider using the parallel export/import method provided by SWPM. Refer to the SL Toolset [documentation](#) page for more details.[26]

Oracle Lifecycle Migration Service

Oracle developed a migration service called Oracle ACS Lifecycle Management Service (formerly known as Oracle to Oracle Online (Triple O) and Oracle to Oracle (O2O)) to help SAP customers migrate their existing Oracle database to another operating system. With this service, you can migrate your database while the SAP system is online, which minimizes the downtime required for migration. This service uses Oracle's built-in functionality and Oracle Golden

Gate. This is a paid service and may require additional licensing to use Oracle Golden Gate. See SAP OSS Note [1508271](#) for more details.[27] This service only helps with the database migration step—you still need to complete all the other SAP standard migration steps to complete the migration.

Oracle RMAN

For SAP applications, you can use native Oracle functionality to migrate your database to another platform. You can use the Oracle RMAN transportable database feature to migrate the database when the endian type of source and target platform are the same. Starting with Oracle 12c, Oracle RMAN cross-platform transportable database and tablespace features can be used to migrate a database across platforms with different endian types. Refer to SAP OSS Notes [105047](#)[28] and [1367451](#)[29] for more details. Oracle RMAN only helps with the database migration step—you still need to complete all the other SAP standard migration steps to complete the migration.

The table below summarizes all the migration methods available to migrate your Oracle database to the Oracle Linux platform.

Source Operating System	Migration Methods to Oracle Linux			
	Oracle RMAN Transportable Database	**Oracle RMAN Cross Platform Transportable Database**	**Oracle Lifecycle Migration Service (O2O / Triple-O)**	**SAP System Copy / Migration with SWPM (R3load Export / Import)**
RHEL / SLES	Yes	Yes	Yes	Yes
Oracle Linux	Yes	Yes	Yes	Yes
Solaris (x86)	Yes	Yes	Yes	Yes
AIX / HP-UX / Solaris (SPARC)	No	Yes	Yes	Yes
Windows	No	Yes	Yes	Yes

We recommended that you evaluate all the available methods and choose the one that best suits your environment.

Oracle E-Business Suite

For Oracle E-Business Suite (EBS) applications, you can follow the various migration paths previously described in the document. The following migration methods are available to migrate the database tier of Oracle E-Business Suite:

Source Operating System	Amazon EBS Snapshot	Oracle Data Guard	RMAN Transportable Database
RHEL	Yes	Yes	Yes
SLES	Yes	Yes	Yes
Solaris x86	No	Yes	Yes
IBM AIX / HP-UX / Solaris SPARC	No	No	No
Windows	No	Yes	Yes

If you are running on IBM AIX/HP-UX/Solaris SPARC, you should consider other database migration methods, such as using the Export/Import utilities.

Once you have migrated your database, you should complete the following post-migration steps:

- Environment variables in new Oracle home include PERL5LIB, PATH, and LD_LIBRARY_PATH.

- Ensure NLS directory $ORACLE_HOME/nls/data/9idata is available in the new Oracle home.

- Implement and run auto-config on the new Oracle home. Once db-tier auto-config is complete, you must run auto-config on the application tier as well.

RMAN Transportable Database

The RMAN transportable database converts the source database and creates new data files compatible for the destination operating system. This step involves placing the source database into read-only mode. RMAN transportable database consumes more downtime. One option to minimize downtime is to use physical standby of the source database for RMAN transportable database conversion step. RMAN allows parallel conversion of the data files, thereby

reducing the conversion time. Read [Oracle's whitepaper](#) on platform migration using RMAN transportable database feature.[30]

Oracle maintains a master note (Oracle MOS Note [1377213.1](#)) for platform migration.[31]

- For Oracle EBS 11i, refer to Oracle MOS Note [729309.1](#).[32]

- For Oracle EBS R12.0 and R12.1, refer to Oracle MOS Note [734763.1](#).[33]

- For Oracle EBS R12.2, refer to Oracle MOS Note [2011169.1](#).[34]

Migrating From 32-Bit to 64-Bit

For Oracle EBS applications, we recommend that you keep the bit-level of the operating systems the same, e.g., RHEL 32-bit to Oracle Linux 32-bit, in order to reduce variability in the migration process. If there is a driving need to change the bit-level of the operating system during the migration, Oracle recommends that you follow a two-step approach in migrating the system to 64-bit. The two-step migration path consists of setting up the application tier and then migrating the database tier. Refer to the MOS Note [471566.1](#) for detailed steps and post-migrations checks on converting Oracle E-Business Suite from 32-bit to 64-bit.[35]

Linux Containers

You can move your Oracle E-Business Suite R12.2 application tier to containers running Oracle Linux. Linux containers provide the flexibility to scale on demand depending on the workloads. The application tier of Oracle E-Business Suite 12.2 is certified on Oracle Linux containers running UEK3 R3 QU6 kernel. Oracle EBS application tier containers must be created with a privilege flag. Review the MOS Note [1330701.1](#) for further requirements and documentation.[36]

Oracle Fusion Middleware

For Oracle application tier products such as Fusion Middleware, refer to the respective MOS Upgrade Support notes for the Oracle recommended path to migrate the OS platform. For Fusion Middleware 11g, refer to MOS Support Note [1073206.1](#) for the platform migration path. For Oracle applications such as Oracle E-Business Suite, PeopleSoft, or similar products, check their respective Oracle MOS platform migration notes or seek direction from the Oracle Support

team for the recommended migration path for the particular product and version.

Conclusion

Your choice of migration path depends on your application, your specific business needs, and your SLAs. If you are already using AWS, Amazon EBS snapshots are the best choice if the pre-requisites are satisfied. Whichever method you choose for the migration path, repeated testing and validation is necessary for a successful and seamless migration.

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Further Reading

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