



VERSION 1

Options for Oracle on Amazon Web Services

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Options for Oracle on Amazon Web Services

Executive Summary

This white paper demonstrates that for owners and operators of Oracle databases there are real and viable possibilities for running these workloads in Amazon Web Services (AWS). In some instances, a better price point and lower total cost of ownership can be achieved. In particular, this whitepaper focuses on showing the benefits associated with the move to the cloud rather than the classic 'Lift and Shift' Model.

Introduction

Over the last decades, the relational database has been key to the enterprise IT strategy. Now as Cloud continues to innovate and disrupt, it is necessary to consider the relational database, and specifically Oracle, to see what options are available where Amazon Web Services is concerned. In this white paper, we focus on moving up the value chain of Cloud, to demonstrate doing more with less and enabling the maximum flexibility and innovation where possible for running Oracle on AWS. Frequently the question is not about cloud but about how to free up staff from doing routine and mundane, yet vital tasks. There are many of ways of executing Oracle on AWS, some which can remove most, if not all, of the effort from the DBA thus delivering benefits. We recognise that licensing for Oracle is a critical point for many customers, and it has been to the forefront in presenting these options. For more detail, follow this series of white papers, which provides insights into different aspects of this topic, or contact us directly at www.version1.com.

Amazon Elastic Compute Cloud (EC2)



Amazon EC2 provides compute capacity in the cloud as part of Infrastructure as a Service (IaaS). The user has complete control of compute resources to the hypervisor layer. EC2 is the best option for life-and-shift database migrations. An EC2 instance creates a Linux or Windows instance. Oracle is then installed, and the source database migrated across.

In this option, the end user is still responsible for:

- Licensing
- Management of the databases
- Management of the Operating System
- Application of security patches
- Setting and maintaining most non-functional requirements, for example
 - High Availability
 - Performance
 - Disaster Recovery

The end user, although responsible for all the above, also retains the ability to transport most customizations to the database directly across to the target database. Regarding Support from Oracle, the position is that in common with Oracle deployed on most virtual environments, it is not ‘certified’ but that it is supported, that is, you can receive assistance and patches from Oracle when most things go wrong. Licensing (as with any new platform) requires careful analysis. Version 1 has considerable knowledge of running Oracle on AWS and its considerations with regards to licensing. This option is the main choice for users who want to rehost their databases associated with complex applications such as Oracle E-Business Suite or SAP.

AWS Relational Database Services (RDS)

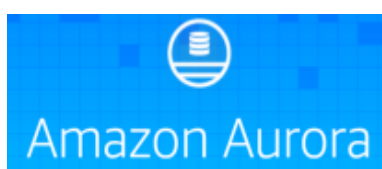
Amazon RDS is a managed relational database service that runs six different database engines. Migrations to RDS can be either homogenous (e.g. Oracle to Oracle) or heterogeneous (e.g. MS SQL to MySQL). Options here include Amazon’s own platform take on Oracle on AWS which provides Oracle to the end user, but delivered and managed by Oracle. Key features include:

- RDS is mostly managed by AWS – the software, and patching is entirely AWS. This results in much reduced workload for database administrators.
- Many Non-Functional requirements are now dealt with by the platform – for example, high availability, disaster recovery, and backups, are managed by AWS, again reducing workload for DBAs.
- Slightly reduced feature set – but this is improving all the time as RDS is enhanced.
- Licensing can be included in the run cost “License Included” model, or the user can bring their own licenses “BYOL” models.
- The database can be upgraded as and when required
- Encryption is easily available
- Monitoring via Grid/Cloud Control of Oracle on RDS is perfectly feasible – the user’s own Cloud Control can be used to manage an Oracle on AWS database in RDS

It is important to remember that PL/SQL and data can be exported from a source database and imported directly into an RDS oracle database running Oracle on AWS.

In summary, AWS is responsible for managing RDS instances which means end users have less control. On the upside, you can benefit from built in security and resilience, use of 6 database engines and utilisation of existing or new licenses.




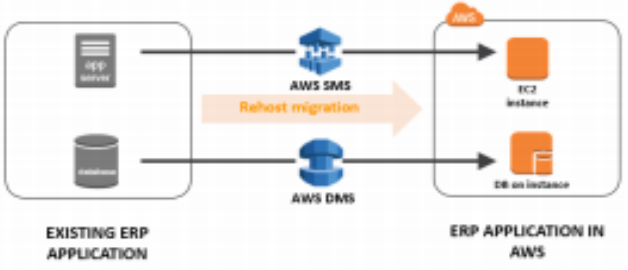





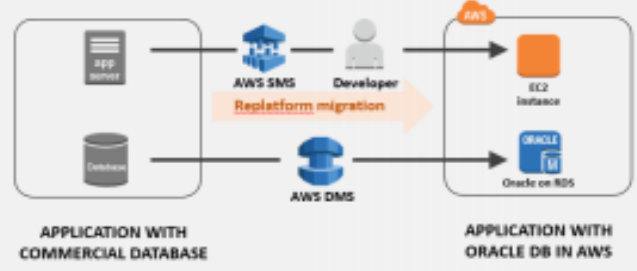


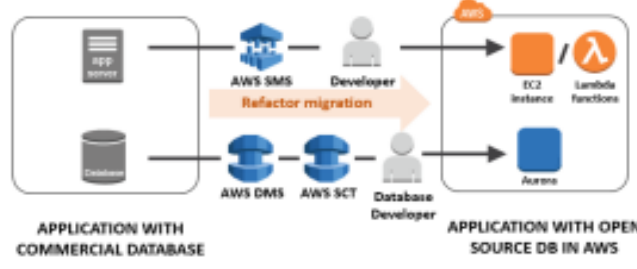
Amazon Aurora



Amazon Aurora is a MySQL and PostgreSQL compatible relational database built for the cloud. Migrating from proprietary databases to Aurora requires schema and code conversion and potentially application re-architecture. Postgres is a very closely compatible database with Oracle, and this resulting combination and the power of Aurora means that a user willing to port their database to Aurora can benefit from performance, scalability and availability almost unmatched elsewhere. With this option AWS is responsible for managing the instance which means users have less control. However, it means that security and resilience are built in and licensing concerns and DBA workload totally drops away allowing the DBA to focus on value add work. Aurora is completely pay-for-what-you-use and the performance and operational benefits resulting can be huge.

Summary

This whitepaper explored the options for running Oracle databases on AWS. The three options presented offer different levels of functionality and support different levels of customisation as summarised below.

What it is	Key Points	Use Case
<p>Option 1</p> <h2>EC2</h2> <p>Amazon EC2 provides compute capacity in the cloud as part of AWS IAAS- infrastructure as a service. The user has complete control of compute resources to the hypervisor layer. EC2 is an ideal option for lift-and-shift database migrations.</p> <p>Supported OS:    + more</p>	<ul style="list-style-type: none"> • Full Control • Customisable • Any database engine • Use existing licenses 	<h3>REHOST YOUR DATABASE</h3> <p>(Complex apps like ERP)</p>  <p>EXISTING ERP APPLICATION → ERP APPLICATION IN AWS</p>
<p>Option 2</p> <h2>RDS</h2> <p>Amazon RDS is a DBaaS- database as a service that runs six different database engines. Migrations to RDS can be either homogenous (e.g. Oracle to Oracle) or heterogeneous (e.g. MS SQL to MySQL).</p> <p>Supported engines:     </p>	<ul style="list-style-type: none"> • AWS responsible for managing the instance • Built in security and resilience • Use of 6 database engines • Use existing license or get new 	<h3>REPLATFORM YOUR DATABASE</h3> <p>(Apps with commercial licenses)</p>  <p>APPLICATION WITH COMMERCIAL DATABASE → APPLICATION WITH ORACLE DB IN AWS</p>
<p>Option 3</p> <h2>Aurora on RDS</h2> <p>Amazon Aurora is a MySQL and PostgreSQL compatible relational database built for the cloud. Aurora runs on RDS, the AWS managed database service. Migrating from a commercial to open source DB may require a schema conversion.</p> <p>Supported engines:  </p>	<ul style="list-style-type: none"> • AWS responsible for managing the instance • Built in security and resilience • Use of 2 open source engines • No license 	<h3>REARCHITECT YOUR DATABASE</h3> <p>(Apps that can be redeveloped)</p>  <p>APPLICATION WITH COMMERCIAL DATABASE → APPLICATION WITH OPEN SOURCE DB IN AWS</p>

Version 1 can advise on the best solution for you – taking into account:

- Licensing
- Support
- Cost and TCO
- Performance
- Functionality
- High Availability and Disaster Recovery

Your partner for every step of your cloud journey

Version 1 has experience working with customers at all stages of their cloud journey to enable them to maximise business outcomes through cloud. We provide independent expertise as to how customers can gain the best value from cloud and software providers.

We work with customers to identify business objectives and key performance indicators and ensure that these can be tracked in the cloud. This includes how to consider new services, how to forecast cloud usage and how to measure cloud consumption.

Version 1 are partners with [AWS, Microsoft Azure and Oracle Cloud](#). Version 1 has over 8 years' experience with Amazon Web Services, our very first project with AWS was implementing production Oracle on AWS.

For further information contact Version 1 on <https://www.version1.com/Microsites/Cloud-Services/Home>, follow us on [Twitter](#) or [LinkedIn](#) and join the conversation



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