Database migration assessment report

Source database: sctuser@dnvqa2dbepp1.corp.nai.org:1521/srvqadb
Oracle Database 11g Enterprise Edition 11.2.0.3.0 (64bit Production), Enterprise edition
Number of analyzed server objects: 124

Executive summary

We completed the analysis of server-level objects configured on your Oracle source instance. We could identify 124 server-level objects. Server-level objects include database triggers, directories, tablespaces, user roles, policy groups, policies, user profiles, users and contexts. Based on the source code syntax analysis, we estimate 94% (based on # lines of code) of your server-level objects can be converted automatically or with minimal changes if you select Amazon RDS for Oracle as your migration target. To complete the migration, we recommend 17 conversion action(s) ranging from simple tasks to medium-complexity actions to complex conversion actions.

License evaluation

Our analysis shows that your Oracle database uses the following Enterprise Edition features unavailable in Standard Edition.

Feature	Description
Active Data Guard	Active Data Guard is an option license for Oracle Database Enterprise Edition. Active Data Guard enables advanced capabilities that extend basic Data Guard functionality.
Advanced Compression	Oracle Advanced Compression provides a comprehensive set of compression capabilities to help improve performance and reduce storage costs.
Data Guard	Data Guard provides the management, monitoring, and automation software to create and maintain one or more synchronized copies of a production database to protect Oracle data from failures, disasters, human error, and data corruptions while providing high availability for mission critical applications.
Enterprise User Security	Enterprise User Security is an important component of Oracle Database. It enables you to address administrative and security challenges for a large number of enterprise database users.
Materialized View Query Rewrite	Oracle Database employs an extremely powerful process called query rewrite to quickly answer the query using materialized views.
Oracle Advanced Security/TDE	Oracle Advanced Security provides two important preventive controls to protect sensitive data at the source: encryption and redaction. Together, these two controls form the foundation of Oracle's defense-in-depth, multi-layered database security solution.
Oracle Application Express	Oracle Application Express (APEX) is a low-code development platform that enables you to build stunning, scalable, secure apps, with world-class features, that can be deployed anywhere.
Partitioning	Partitioning is powerful functionality that allows tables, indexes, and index-organized tables to be subdivided into smaller pieces, enabling these database objects to be managed and accessed at a finer level of granularity.

Real Application Testing	Oracle Real Application Testing helps you fully assess the effect of such system changes on real-world applications in test environments before deploying the change in production.
Virtual Private Database	Virtual Private Database (VPD) is used when the standard object privileges and associated database roles are insufficient to meet application security requirements.

If you choose Standard Edition as your migration target, remove dependencies on these features.

Cloud support

Our analysis shows that your Oracle database uses the following features not supported by Amazon RDS for Oracle.

Feature	Description
Real Application Testing	Oracle Real Application Testing helps you fully assess the effect of such system changes on real-world applications in test environments before deploying the change in production. Amazon RDS for Oracle doesn't support the Real Application Testing feature.
Automatic Storage Management	ASM is a volume manager and a file system for Oracle database files that supports single-instance Oracle Database and Oracle Real Application Clusters (Oracle RAC) configurations. Amazon RDS for Oracle doesn't support the Automated Storage Management feature.

If you choose Amazon RDS for Oracle as your migration target, remove dependencies on these features.

Our analysis shows that your Oracle database uses the following features that require configuration steps in Amazon RDS for Oracle.

Feature	Description
Oracle XML DB	Oracle XML DB provides full support for all of the key XML standards, including XML, Namespaces, DOM, XQuery, SQL/XML and XSLT. Amazon RDS for Oracle supports XML DB feature without the XML DB Protocol Server. Please read prerequisites and configuration steps in the next article: Oracle XML DB option
Oracle Application Express	Oracle Application Express (APEX) is a low-code development platform that enables you to build stunning, scalable, secure apps, with world-class features, that can be deployed anywhere. Amazon RDS supports Oracle Application Express (APEX) through the use of the APEX and APEX-DEV options. Please read prerequisites and configuration steps in the next article: Oracle APEX option

Locator	Oracle Locator provides capabilities that are typically required to support internet and wireless service-based applications and partner-based GIS solutions. Oracle Locator is a limited subset of Oracle Spatial. Please read prerequisites and configuration steps in the next article: Oracle Locator.
Spatial	Oracle Spatial provides a SQL schema and functions that facilitate the storage, retrieval, update, and query of collections of spatial data in an Oracle database. Please read prerequisites and configuration steps in the next article: Oracle Spatial.

If choose Amazon RDS for Oracle as your migration target, please follow the abovementioned steps to continue to use these features on the target database after migration completes.

Our analysis shows that your Oracle database uses the following features supported by Amazon RDS for Oracle.

Feature	Description
Data Guard	Data Guard provides the management, monitoring, and automation software to create and maintain one or more synchronized copies of a production database to protect Oracle data from failures, disasters, human error, and data corruptions while providing high availability for mission critical applications. Data Guard is included with Oracle Database Enterprise Edition. Amazon RDS for Oracle supports Read Replicas with Active Data Guard.
Active Data Guard	Active Data Guard is an option license for Oracle Database Enterprise Edition. Active Data Guard enables advanced capabilities that extend basic Data Guard functionality. Amazon RDS for Oracle supports Read Replicas with Active Data Guard.
Enterprise User Security	Enterprise User Security is an important component of Oracle Database. It enables you to address administrative and security challenges for a large number of enterprise database users.
Virtual Private Database	Virtual Private Database (VPD) is used when the standard object privileges and associated database roles are insufficient to meet application security requirements. VPD policies can be simple or complex depending on your security requirements. VPD can be used in combination with the "application context" feature to enforce sophisticated row and/or column level security requirements for privacy and regulatory compliance.
Java Support	Oracle Database provides support for developing, storing, and deploying Java applications. This chapter introduces the Java language to Oracle PL/SQL developers, who are accustomed to developing server-side applications that are integrated with SQL data. You can develop server-side Java applications that take advantage of the scalability and performance of Oracle Database.

Streams	Oracle Streams enables information sharing. The stream can propagate information within a database or from one database to another. Oracle Streams feature provides greater functionality and flexibility than traditional solutions for capturing and managing messages, and sharing the messages with other databases and applications. Oracle Streams provides the capabilities needed to build and operate distributed enterprises and applications, data warehouses, and high availability solutions. Amazon RDS for Oracle supports Streams from Oracle 12c
Oracle Advanced Security/TDE	Oracle Advanced Security provides two important preventive controls to protect sensitive data at the source: encryption and redaction. Together, these two controls form the foundation of Oracle's defense-in-depth, multi-layered database security solution.
Partitioning	Partitioning is powerful functionality that allows tables, indexes, and index-organized tables to be subdivided into smaller pieces, enabling these database objects to be managed and accessed at a finer level of granularity.
Advanced Compression	Oracle Advanced Compression provides a comprehensive set of compression capabilities to help improve performance and reduce storage costs.

Hardware configuration

CPU

Logical CPU Count	Physical CPU
4	4

Memory

Total Memory	Total Database Files Size	CPU Utilization	Memory Consumption (avg/max)
15.7 GB	17.38 GB	2.3%	3324 MB/3602 MB

Disk operations (avg)

Transaction Per Second (TPS)	I/O (IOPS)	Total Disk Throughput(MB/s)	Redo Log Generation (MB/hour)
0.01	1.81	0.04	104.76

Disk operations (max)

Transaction Per Second (TPS)	I/O (IOPS)	Total Disk Throughput(MB/s)	Redo Log Generation (MB/hour)
0.18	79.21	2.61	106.25

Server

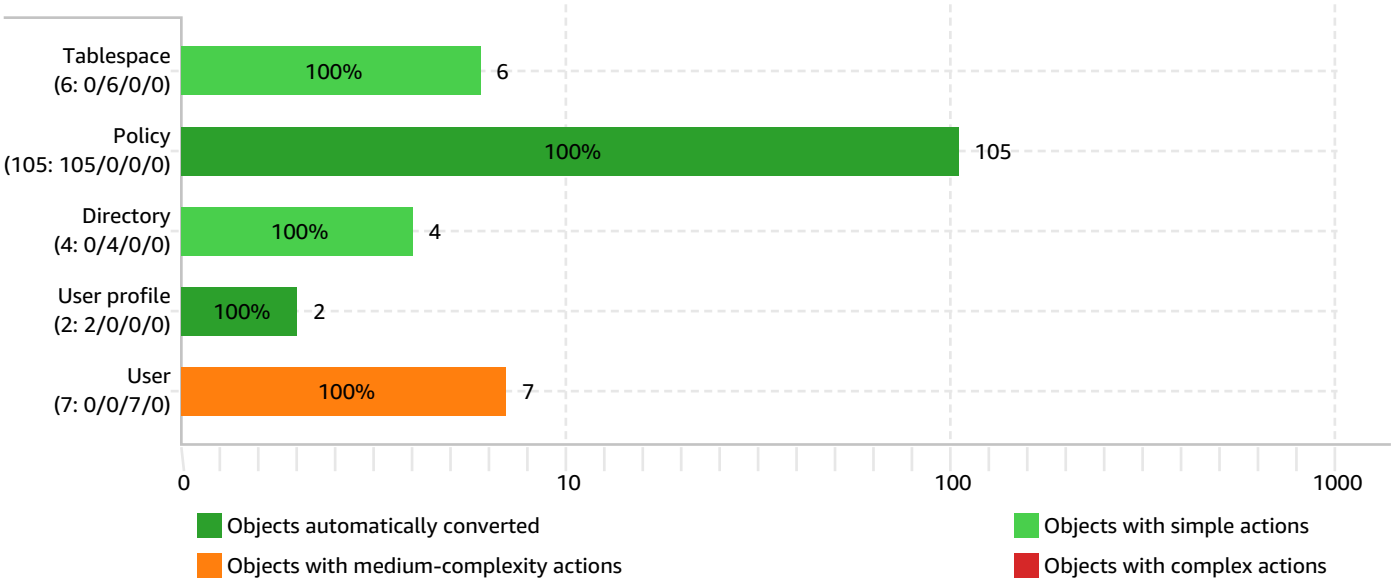
Name	OS	Host	Character set
dnvqa2dbepp1	Linux x86 64-bit	dnvqa2dbepp1	AL32UTF8

Server objects with conversion actions for Amazon RDS for Oracle

Of the total 124 server-level objects in the source Oracle database, we identified 117 (94%) server-level object(s) that can be converted to Amazon RDS for Oracle automatically or with minimal changes.

7 (6%) server-level object(s) require 17 simple user action(s) to complete the conversion.

Figure: Conversion statistics for Oracle server-level objects



Detailed recommendations for Amazon RDS for Oracle migrations

If you migrate your Oracle database to Amazon RDS for Oracle, we recommend the following actions.

Server-Level object actions

User Changes

Not all users can be converted automatically. You'll need to address these issues manually.

Issue 1510: Check access credentials

Recommended action: Check access credentials.

Issue code: 1510 | Number of occurrences: 7 | Estimated complexity: Simple

Server Level Objects.Users.CONSUMER_PORTAL
Server Level Objects.Users.FND_SERVICE
Server Level Objects.Users.FOUNDATION
Server Level Objects.Users.HP_DBSPI
Server Level Objects.Users.OBIEE
+2 more

Directory Changes

Not all directorys can be converted automatically. You'll need to address these issues manually.

Issue 1514: Run statement as DBA

Recommended action: Run statement as DBA or grant execute privilege on rdsadmin.rdsadmin_util package.

Issue code: 1514 | Number of occurrences: 4 | Estimated complexity: Simple

Server Level Objects.Directories.DATA_PUMP_DIR
Server Level Objects.Directories.EXPIMP
Server Level Objects.Directories.ORACLE_OCM_CONFIG_DIR
Server Level Objects.Directories.XMLDIR

Tablespace Changes

Not all tablespaces can be converted automatically. You'll need to address these issues manually.

Issue 1512: RDS supports Oracle Managed Files only

Recommended action: Custom file name cannot be given in RDS.

Issue code: 1512 | Number of occurrences: 6 | Estimated complexity: Simple

Server Level Objects.Tablespaces.CNSMR_PRTL_DATA
Server Level Objects.Tablespaces.CNSMR_PRTL_INDX
Server Level Objects.Tablespaces.FOUNDATION_DATA
Server Level Objects.Tablespaces.FOUNDATION_INDX
Server Level Objects.Tablespaces.OBIEE
+1 more