Migration of on-premises Oracle data to Cloud

Overview

When migrating an on-premises database to a cloud-based DB service, the most time-consuming processes are Schema Conversion and the corresponding Embedded SQL and application code modification.

Mission-critical businesses of an enterprise still often rely on the highly available Oracle DBMS. If they transitioning to a heterogeneous DBMS, the conversion is risky and time-consuming. Therefore, it is more efficient and safe to switch to a homogeneous Oracle DBMS.

SDS Cloud is compliant with the policy for Oracle DBMS License. The **Bare Metal Server** that can exclusively utilize the host server's CPU resources and **VPN** ensures seamless and secure migration of the on-premises Oracle data to SDS Cloud.

Architecture Diagram

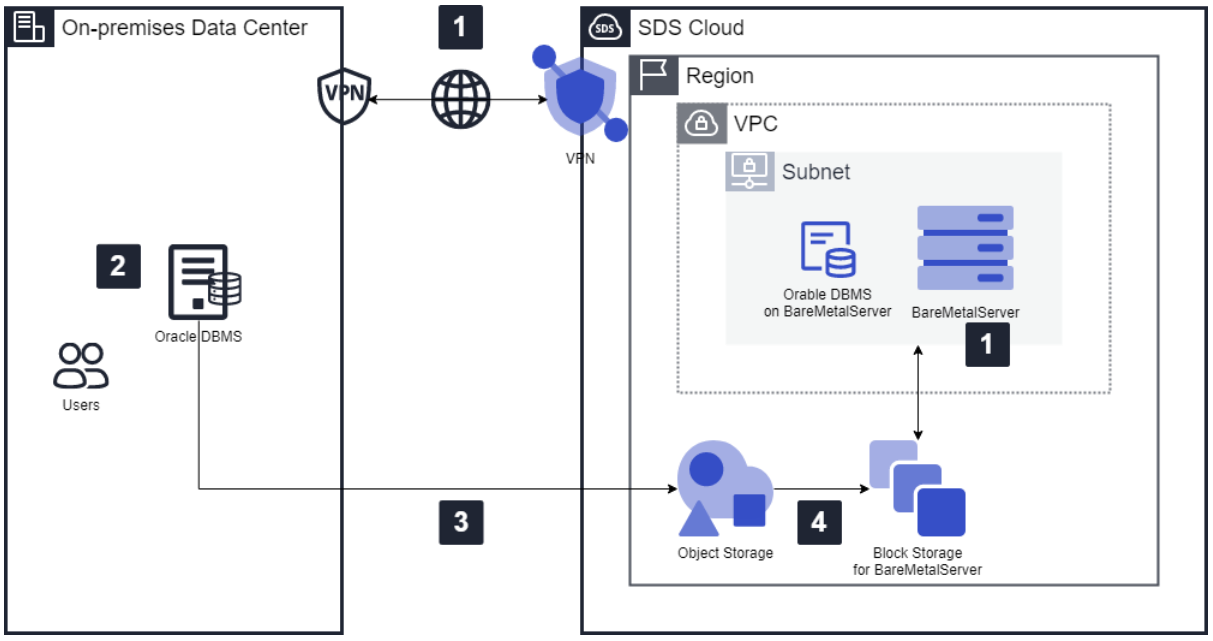

Figure 1. Migration of Oracle DBMS with Oracle Data Pump tool

1. Apply for **Bare Metal Server** and **Block Storage** for Oracle DBMS Instance to be launched, **VPN** for secure communication with on-premises data centers, and **Object Storage** to store database dump files. Then set up resources accordingly.
2. Execute Data Pump to export the entire database, schema, table space, and database object. Encryption and compression provides secure and quick transfer of the data.
3. Copy the database dump file to the bucket of **Object Storage** through VPN.
4. After restoring the data stored in the bucket to the general filesystem of **Block Storage**, import the database for Oracle DBMS.

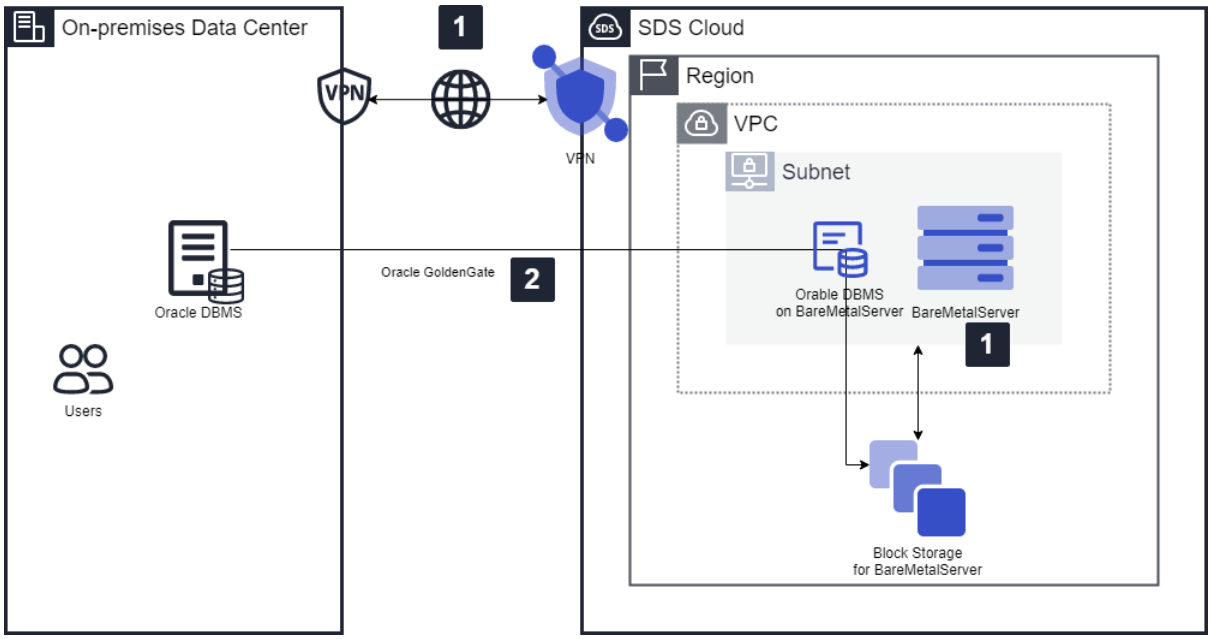

Figure 2. Migration of Oracle DBMS with minimal downtime using Oracle Golden Gate

1. Apply for **Bare Metal Server** and **Block Storage** for Oracle DBMS Instance to be launched, and **VPN** for secure communication with on-premises data centers. Then set up resources accordingly.
2. After setting up Oracle GoldenGate, transfer the data to the target Oracle DBMS. In the case of large-capacity database migration, Oracle Data Pump can be used in parallel.

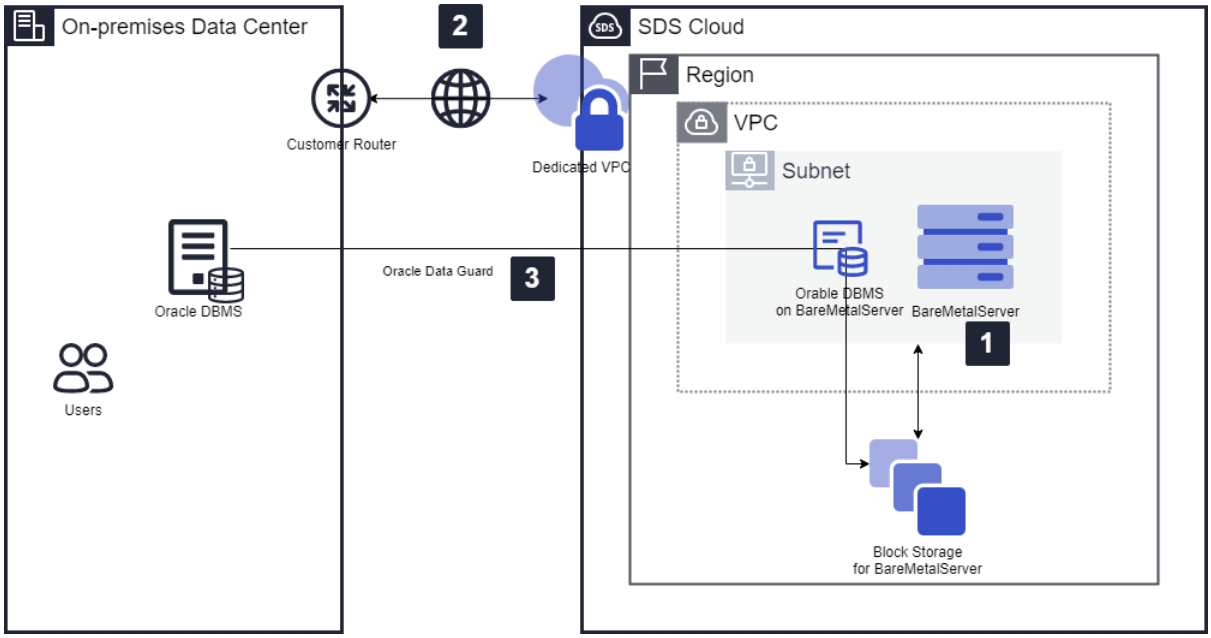

Figure 3. Migration of Oracle DBMS with Minimal Downtime using Oracle Data Guard

1. Apply for **Bare Metal Server** and **Block Storage** for Oracle DBMS Instance to be launched then set resources accordingly.
2. Configure Dedicated **VPC** to use on-premises customer IP address.
3. Configure a standby or read-only database for data replication using Oracle Data Guard. When the target standby database is synchronized with the on-premises database, it can be converted to read/write mode and designated as the primary database.

Use Cases

A. Cloud transfer of e-Commerce business to cope with demand peaks and fluctuations

The E-commerce business demands flexible operation of resources to accommodate temporarily explosive demands during times including Black Friday, promotional events, and holiday seasons. Therefore, the web systems or application servers are built in a cloud environment and resources need to flexibly increase and decrease by auto-scaling.

As the front-end system migrates to the cloud, the back-end database also needs a cloud transition. For such a migration, minimal downtime might be necessary according to business requirements. Oracle DBMS also requires a migration to a

homogeneous Oracle DBMS.

SDS Cloud provides **Bare Metal Servers** and iSCSI-based **Block Storage** to enable using the Oracle DBMS license in cloud settings without additional change. In addition, it is possible to seamlessly switch to the cloud with minimal downtime using **VPC** (Dedicated).

Pre-requisites

You need to apply for **Bare Metal Server** and **Block Storage** services for Oracle DBMS Instances.

VPN connection for secure communication with customers' on-premises data centers must be preceded.

You need to apply for **Object Storage** and create a bucket to store the DB dump files received by Oracle Data Pump.

Limitations

The license for DBMS and replication required for Oracle DBMS configuration must be provided by the customer on a Bring Your Own License (BYOL) base.

Considerations

The Oracle Export and Import method is suitable for databases of a small size within 10GB, and it is recommended to use Oracle Data Pump for databases larger than 10GB to 20TB.

To minimize downtime, it is necessary to use Oracle GoldenGate. For large databases, Oracle Data Pump is needed.

For DBMSs that require high-performance IOPS, you need to apply for SSD-based **Block Storage**.

Related Products

- Virtual Server

- Bare Metal Server
- Block Storage
- Object Storage
- VPN
- VPC