



ToR (Terms of Reference)

for

DBA (Database Administrator)

Position: Database Administrator

Location: Head Office, Bhutan Development Bank, Thimphu

Duration: One (1) Year with extension based on the performance & requirement

Reporting to: GM, ICT and Digital Banking Division

1. Background

BDB is seeking a Database Administrator to manage and optimize the database systems, ensuring high performance, availability, and reliability. The Database Administrator will be responsible for the installation, configuration, monitoring, and maintenance of database systems, as well as supporting disaster recovery and optimization tasks.

2. Objectives

The primary objectives of the Database Administrator are to:

1. Ensure the efficient installation, configuration, and backup scheduling of database systems.
2. Monitor and optimize database performance and resource usage.
3. Set up and maintain high availability and disaster recovery (DR) systems.
4. Provide comprehensive support and reporting on database issues and performance.
5. Train and guide internal staff on database management and optimization.

3. Scope of Work

The Database Administrator will undertake the following tasks:

1. **Basic Installation, Configuration, and Backup Scheduling:**
 - Install and configure database systems.
 - Schedule and manage backups.
 - Back up restoration
2. **System Monitoring:**
 - Monitor system status
 - Collect information on performance and resource usage.
 - Gather information on thresholds and comparisons.
 - Notify of system availability and resource issues.
 - Scan and analyze system log files daily.
3. **Performance and Resource Issue Notifications:**
 - Notify upon discovering performance issues.
 - Verify backups as indicated in log files.
 - Collaborate with product support for issue resolution.



4. Reporting and Direct Support:

- Provide monthly reports on call activities and system resources.
- Access customer direct for call tracking.
- Perform regular database performance tuning.

5. RAC and DR Setup:

- Set up RAC (Real Application Clusters) with Data Guard for standby and maintenance.
- Support DR drills and setup.
- OEM setup for database tuning
- Near DR setup
- Jasper report development (MIS)

6. Database Optimization Tasks:

- Check and resolve tables or indexes without statistics.
- Build statistics for tables, partitions, and indexes.
- Identify and rectify tables with chained rows.
- Adjust tables and indexes (initrans).
- Eliminate I/O contentions by distributing tables and indexes across devices.
- Monitor table space growth and add data files if required.
- Manage disk space by deleting or moving unwanted files.
- Ensure database data files growth and manage archive log destinations.
- Analyze AWR (Automatic Workload Repository) and ADDM (Automatic Database Diagnostic Monitor) reports.
- Validate archive switch frequency and address any abnormalities.
- Report and resolve performance bottlenecks.
- Monitor hit ratios and handle DB parameters effectively.
- Verify and resize database parameters as needed.
- Create indexes to avoid full table scans.
- Analyze CPU and RAM utilization of the database server.
- Analyze alert logs for ORA-xxxxx errors and other issues.
- Prepare and share performance reports.
- Create issue tickets with Oracle and manage them on behalf of the organization.
- Participate in DR drills and consult on Oracle DB upgrades.
- Submit health check reports bi-monthly or quarterly.

7. Hardware and IT Environment Management:

- Check all bank hardware and advise on optimal usage.
- Plan capacity and migrate to new hardware as needed.
- Manage software and hardware upgrades and patch management.
- Log and restore backups.
- Restore standby Finacle application servers with issues.
- Summarize major and minor data center changes.
- Provide support and facilitate DBA, CBS functional administrator, and IT support.
- Train the bank's L1 helpdesk in techno-functional areas.
- Act as a liaison with the L3 helpdesk managed by the OEM of the Finacle software.
- Conduct periodic preventive health checks as per defined frequency.
- Perform DC/DR cutover drills and provide backup and restoration testing reports at least twice per quarter for the Finacle application and database.
- Prepare for the upgrade of Oracle database from 12c to newer version.

8. Additional Tasks:

- Check the database and associated licenses procured by the bank.
- Assist the bank in the migration of the Document Management System database.
- Perform database performance tuning.
- Work with the L2 and find the Root Cause Analysis (RCA) of issues and find permanent fixes.



འབྲུག་གོང་འཕེལ་དངུལ་ཁང་ཚད་འཛིན། Bhutan Development Bank Limited

“Your Development Partner”

- Implement high availability features of Oracle Database.
- Facilitate issue resolution with functional and support teams.
- Monitor metric alerts and performance issues, including high CPU utilization.
- Monitor Oracle Alert logs files, transaction logs, and backup logs.

4. Deliverables

The Database Administrator will be responsible for delivering the following:

1. Installation and Configuration Reports.
2. Backup Scheduling Documentation.
3. Daily System Monitoring Reports.
4. Monthly Performance and Resource Usage Reports.
5. RAC and DR Setup Documentation.
6. Database Optimization Reports.
7. Hardware and IT Environment Management Reports.
8. Issue Tracker and RCA Documentation.
9. Training of IT employees on basic database management.
10. Health Check and Performance Reports.
11. Any other tasks assigned by the General Manager, ICT & Digital Banking Division/Management.