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**backup policy**

**Version 1.0 < Year >**

**Document Information & Revision History:**

|  |  |  |  |
| --- | --- | --- | --- |
| Document Version No | Revision Date | Authors | Revision Notes |
|  |  |  |  |
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# SCOPE & OBJECTIVE

This document gives a brief explanation for types of backups available for Oracle databases. It provides a summary of the existing backup policy for oracle production databases as well as recommendations for modifying the policy based on the business requirement of data availability and affordable downtime.

# EXECUTIVE SUMMARY

The most important reason for having a Backup Policy is to prepare for the possibility of media, hardware or software failure. Should any of these failures occur, the major goal is to make the database available to users within an acceptable time, ensuring that committed data is undamaged? Oracle provides many recovery options to recover from various types of failure. Each option is dependent upon the failure and the available backup files. Hence, a good backup strategy is essential for recovery.

Following are the types of backups available for oracle databases.

1. **Physical Backup**
2. **Logical Backup**

* **Physical Backups:**

Physical backups are backups of the physical files used in storing and recovering your database, such as datafiles, control files, and archived redo logs. You can take physical backups with either the Recovery Manager (RMAN) utility or operating system utilities.

Physical backups are of two types:

* **User Managed Backup**
* **Recovery Manager (RMAN)**

**User Managed Backup:** In user managed backups, you directly manage the files that make up your database with a mixture of host operating system commands and SQL\*Plus backup and recovery-related capabilities.

User Managed backups are of two types:

* **HOTBACKUP**
* **COLD BACKUP**

**HOTBACKUP:** Hot backup is a kind of backup, which can be taken while database operation is going on. The primary requirement for hot backup is that the database should be in ARCHIVELOG mode. Business houses, which cannot afford downtime, can configure this kind of backup. While hot backup is taking place generation of archives will be more. This kind of backup is not consistent; hence a recovery has to be performed after restoration of a database from hot backup.

**COLD BACKUP:** Cold backup involves shutting down the database and then copying the datafiles from OS level. Business houses, which can afford downtime for cold backup, can configure this kind of backup. Cold backup is always consistent, and hence does not require recovery after restoration.

**RMAN Backups:** RMAN is an inbuilt oracle tool (with command-line client and Enterprise Manager GUI interfaces) that integrates with sessions running on the Oracle server to perform a range of backup and recovery activities, as well as maintaining a repository of historical data about your backups. The main advantage of this backup is that it can be taken directly on tape, as well as on disk. Backup & recovery using this utility will be faster compared to other backups.

RMAN backup are of two types:

* **Backup without Catalog**
* **Backup with Catalog**

**Backup without Catalog:** RMAN maintains metadata about the target database and its backup and recovery operations in the RMAN repository. Among other things, RMAN stores information about its own configuration settings, the target database schema, archived redo logs, and all backup files on disk or tape.

The primary store for RMAN repository data is always the control file of the target database.

**Backup with Catalog:** Another copy of the RMAN repository data can also be saved in the recovery catalog. Using a recovery catalog preserves RMAN repository information, if the control file is lost, making it much easier to restore and recover following the loss of the control file.

* **Logical Backups:**

Logical backups contain logical data (for example, tables or stored procedures) exported from a database with an Oracle export utility and stored in a binary file, for later re-importing into a database using the corresponding Oracle import utility. In this kind of backups, downtime is not required, but less burden on database is always recommended. Logical backups are a useful supplement to physical backups in many circumstances but are not sufficient protection against data loss without physical backups.

Following is the recovery methodology for different type of backups:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Failure**  **Type** | **Export** | | **Cold Backup** | | **Hot Backup** | | **RMAN Backup** | |
|  | Action needed | @ Time required | Action needed | @ Time required | Action needed | @ Time required | Action needed | @ Time required |
| Instance failure | Not needed | NA | Not needed | NA | Not needed | NA | Not needed | NA |
| Disk Failure | We can recreate the database and import the latest full export dump taken | Depends on the size of export dump | Restore the required files and archives on the original location | Depends on Physical Size of DB | Restore the required files and archives on the original location | Depends on Physical Size of DB | Restore the required files and archives on the original location | Depends on Physical Size of DB |

BUSINESS REQUIREMENT

Following are the Business Requirement for Production Databases:

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| --- | --- | --- |
| **DB Name** | **Server Name** | **Downtime Availability** |
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# CURRENT BACKUP DETAILS

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Component** | **Type of Backup** | **Backup Script Location** | **Backup Device** | **Backup Destination** | **Freq. of Backups** | **Time of Backup** |
|  |  |  |  |  |  |  |
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# Backup Retention Details

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| --- | --- | --- | --- | --- |
| **Component** | **Type of Backup** | **Retention on Disk** | **Retention on Tape** | **Backup Destination** |
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# Deployment of Business Continuity Plan

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| --- | --- | --- | --- | --- |
| **Component** | **RAC** | **OS Cluster** | Load Balancer | Dataguard |
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# BACKUP CONTINGENCY DETAILS

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **DB Name** | **DB Size** | **Type of Backup** | **Size of Backup** | **Backup Device** | **Restoration Time** | **Total Time** |
|  |  |  |  |  |  |  |
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# RECOMMENDATIONS