**1. Incremental Backup**

* Backs up only the blocks that have changed since the last **level 0 or level 1** backup.
* Reduces backup size and time compared to full backups.

**2. Cumulative Incremental Backup**

* Backs up all blocks changed **since the last level 0 backup**.
* It does **not** consider level 1 backups.
* Requires more storage than differential backups but simplifies recovery since only the level 0 and the latest cumulative backup are needed.

**3. Differential Incremental Backup**

* Backs up only blocks changed **since the last level 1 or level 0 backup**.
* It is smaller in size than a cumulative backup but may require multiple backups for recovery (last level 0 + latest level 1 + other differential backups).

**4.Full Backups**

Taking full tatabase backup

**Comparison Table**

| **Type** | **Backs Up Changed Blocks Since** | **Recovery Process** |
| --- | --- | --- |
| **Level 0 Backup** | The last full backup | Used as a base for incrementals |
| **Cumulative (Level 1)** | The last level 0 backup | Faster recovery, but larger backups |
| **Differential (Level 1)** | The last level 0 or level 1 backup | Smaller backups, but may require multiple files for restore |

**Example Usage in RMAN**

BACKUP INCREMENTAL LEVEL 0 DATABASE;

BACKUP INCREMENTAL LEVEL 1 CUMULATIVE DATABASE;

BACKUP INCREMENTAL LEVEL 1 DATABASE;

* The first command creates a **full incremental (level 0)** backup.
* The second creates a **cumulative incremental** backup.
* The third creates a **differential incremental** backup.

Would you like more details on how to implement these in an RMAN backup strategy?