

BACKUP SCHEDULES 101

NET3 TECHNOLOGY



BACKUP SCHEDULES

Full Backup

Copies all data in a given system.

Differential Backup

Copies data that has changed since the last full backup.

Regular and consistent backup schedules are different for every business that adapt to individual business needs over the course of time. This eBook will breakdown what to consider for a thorough backup schedule.

Incremental Backup

Copies everything that has changed since the last backup.

Forever Backup

After the first full backup, only the change data is collected.

GFS Backup

Combines Full, Differential, and Incremental.



FULL BACKUP

A Full backup contains all the data for a single machine and provides a starting point for all the other backups. A single full backup provides the ability to completely restore all blocks of data from the point in time it was taken. All of the backed-up data is contained in a single restore point.



Slowest backups to finish



Largest amount of storage space required





DIFFERENTIAL BACKUP

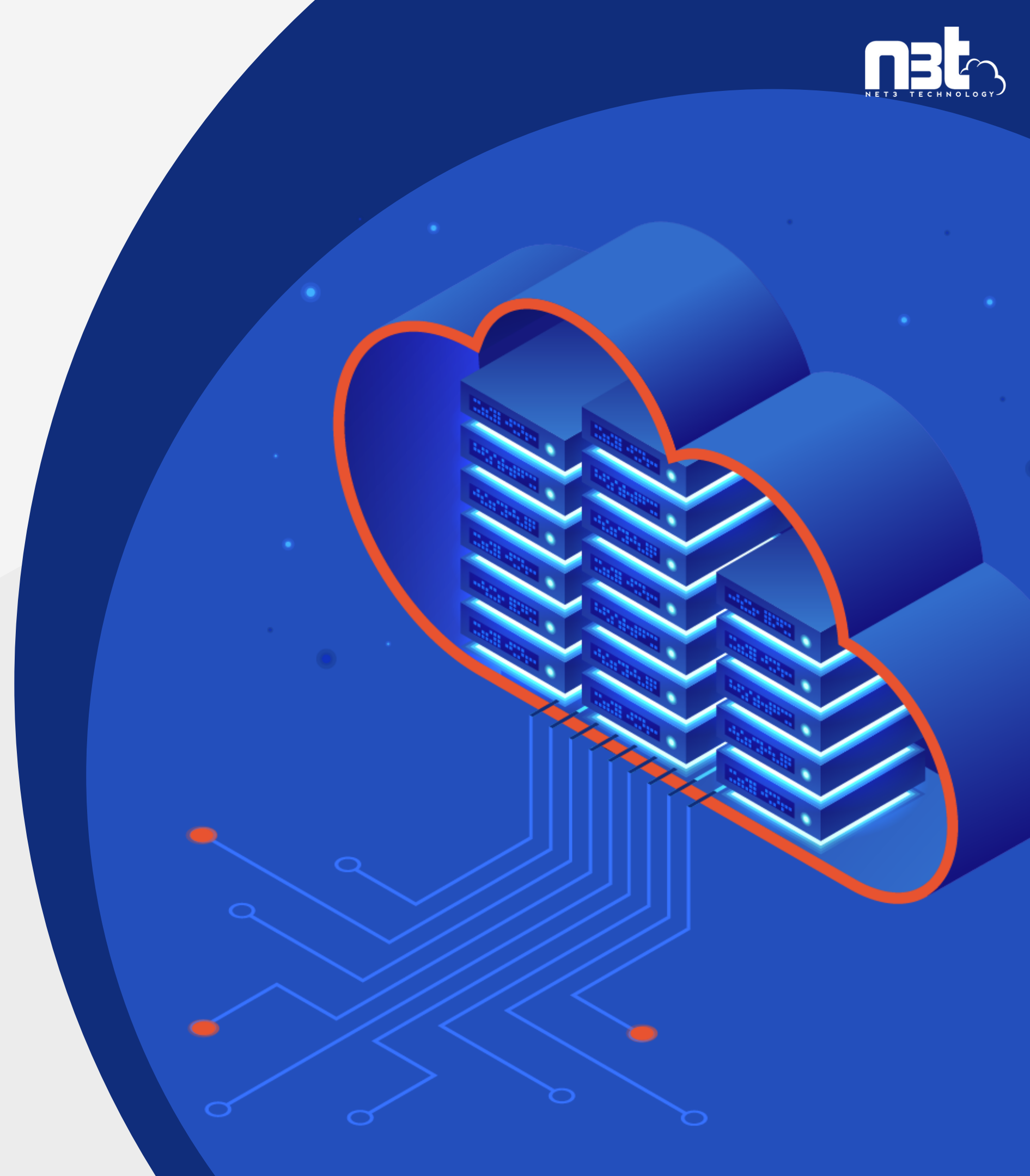
A Differential Backup copies data that has changed since the last full backup. Since a differential backup will copy all changed data since the last full backup, duplicate data will not be backed up. An advantage is that when data needs to be restored, it can be built from the last full backup and last differential copy. However, since the size of the backup increases each time one is taken:



Backup window duration is increased



Storage space needed is increased





INCREMENTAL BACKUP

An Incremental Backup copies everything that has changed since the last backup. Incremental backups provide a faster way of backing up data instead of consistently conducting full backups. The advantages of incremental backups include that they are the fastest backups, less storage space is needed, and you get a shorter backup window on days between full backups. Since you need both full and all increments:



Full restore can be slower than other backups





FOREVER INCREMENTAL

A Forever Incremental Backup will only collect changed data after the first full backup. Forever Incremental backup chains attempt to combine the ease of recovery in a full backup and the efficiency of an incremental. Backup products such as Acronis and Veeam can create metadata that allows the backup to be restored from a single point and rolled into the initial full backup for a complete restore.



Efficient in time and storage space



Ease of recovery





GFS BACKUP

Grandfather, Father, Son

Combines Full, Differential and Incremental Backups, attempting to increase efficiency while still getting a frequent full backup. Typically this is done on a schedule similar to this:

1st day of the month - Full Backup is taken.

1st day of the week - Differential is taken.

Every day of the week - Incremental is taken.

This schedule shortens the chain of backup, but allows for quicker recovery times.



Which Backup Schedule Best Suits You?

Types of Schedules	Key Uses	More Info
Full Backup	Good when data consistency is key and restorability is of utmost importance.	Storage space has to be plentiful. Ex: ERP servers, and databases.
Differential Backup	Not a backup schema on its own. There must be a Full Backup to start the chain. Can alleviate some of the storage issues with Full Backups.	More bandwidth efficient.
Incremental Backup	Not a backup schema on its own. There must be a Full Backup to start the chain.	Even more bandwidth efficient than Differentials.
Forever Incremental	Good for cloud backup and most recovery needs. How Net3 does backup 99% of the time.	MOST bandwidth efficient.
GFS Backup	Good when critical file data is needed for long retention periods but does not have high rates of change.	Blend of different backup types and suitable for most backup applications.



BACKUP WINDOWS

What time can I start my backup so it ends at an appropriate time, so I am not impacting backup users?

Backup windows can be calculated by:

Amount of data

Connection speed between
backup location and storage

RPO - Recovery Point Objective

At what frequency do backups need to be taken? How much data can I afford to lose? Estimated revenue loss for different levels of RPO's:

Daily Backups

RPO = 24 Hours
Revenue Lost = \$273,972.60

Snapshot-Based

RPO = Hours
Revenue Lost = \$45,662.10

Continuous Replication

RPO = Seconds
Revenue Lost = \$7,610.35

RTO - Recovery Time Objective

Your RTO is the amount of time it will take your business to resume normal operations after an outage. The downtime that comes with data loss can result in significant revenue and productivity loss.


How much time can our organization afford to be without this data during an outage?

How much time do I need to restore after an outage?



For more information
about how to implement the
best backup schema for your
business, contact us!

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