**Passerelles numériques**

A Gateway for Life

Chapter 08 **Backup and Recovery**

Advanced Microsoft Administration

# AGENDA

- Introduction

- Choosing Backup Method

- Develop a Backup Strategy

- Backup Tools

- Practice

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# Introduction

- What is Backup?

  - Backup refers to making copies of data so that these additional copies may be used to restore the original after a data loss event.

  - In this chapter you will learn how to develop a backup strategy, and how to use the backup tools in **Microsoft Windows.**

# Introduction

- Even the best security measures can not guarantee that data will never be lost due to many reasons:

  ► Hard disk failure

  ► Users delete data by accident

  ► A virus deletes important files

  ► A notebook computer is lost or stolen

  ► An attacker deletes data of the server

  ► Nature destroys storage systems

Remember!

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# Choosing Backup Method

- In the name of IT administrator, you should consider to backup method in your company.

- There are three type of backing up data:

  - **Full backup**

  - **Incremental backup**

  - **Differential backup**

# Choosing Backup Method

❖ **Full backup**:

– The best possible method since all system data is copied to the backup media daily

– Backups should be done when the system is not being used to avoid data changes during the backup, so usually at night



Full backup 1 — 1 Gb — Original source data

Full backup 2 — 2 Gb — New/Modified files — Original source data

Full backup 3 — 3 Gb — New/Modified files — Original source data

Full backup 4 — 4 Gb — New/Modified files — Original source data

Note: Full Backup will always back-up the entire source data. If you don't delete/exclude sources (only add/modify) it will always grow in size because it backs up everything.

# Choosing Backup Method

❖ **Incremental backup:**

– Do a full backup once a week, usually on the weekend when the backup window is longer

- Then do a daily backup that only copies files changed since the day before

– **Advantage**

- The backup window can be much smaller since only backing up files changed during one day

# Choosing Backup Method

- **Incremental backup:**
  - **Disadvantage**
    - Recovery time is longer since must restore the full backup and then each incremental backup until today

# Choosing Backup Method

- **Differential backup**
  - Do a full backup once a week, usually on the weekend when the backup window is longer
    - Then do a daily backup that only copies files changed since the full backup
  - **Advantage**
    - Shorter restore time than Incremental
    - To restore only need two backup media, the full backup and the most recent differential
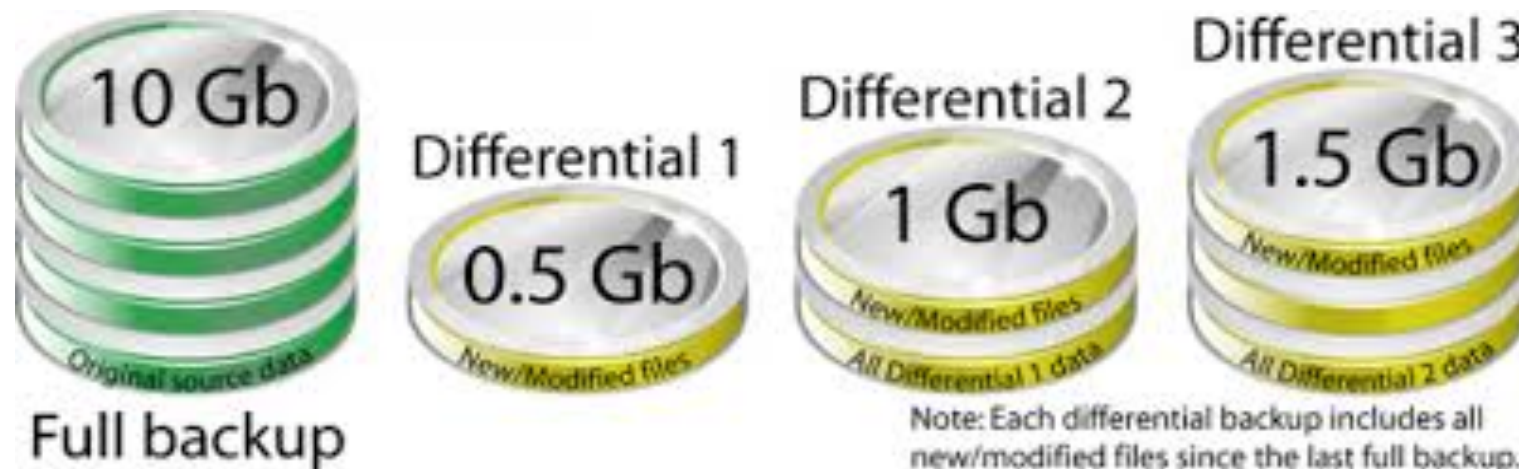
# Choosing Backup Method

- **Differential backup**

  – Disadvantage

    - The time to backup grows every day and may exceed the backup window by the end of the week

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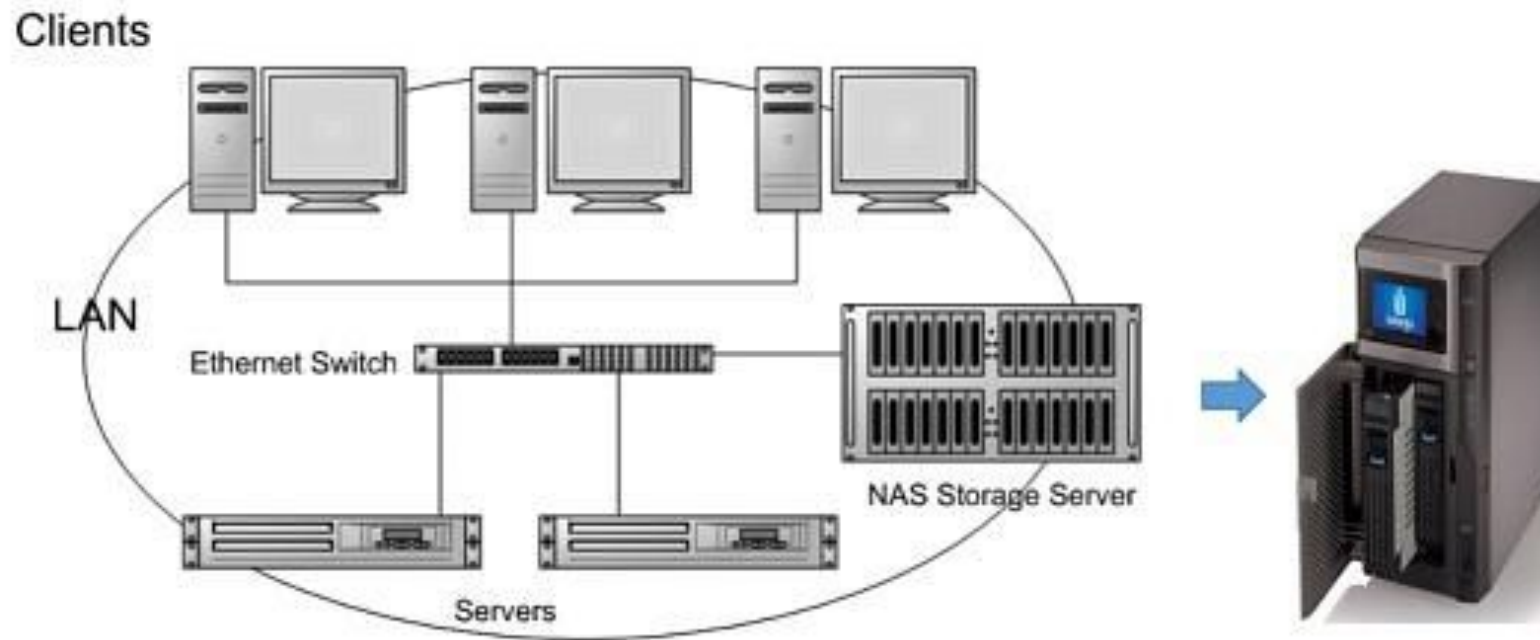# Develop a Backup Strategy

## Backup Media:

- Tape Drive

- CD/DVD Rom

- External HDD

- Removable device

- Another Servers (NAS, SAN… )

- Cloud Storage

# Develop a Backup Strategy

**NAS (Network Attached Storage)** is a storage device connected to a network that allows storage and retrieval of data from a central location for authorized network users and varied clients.

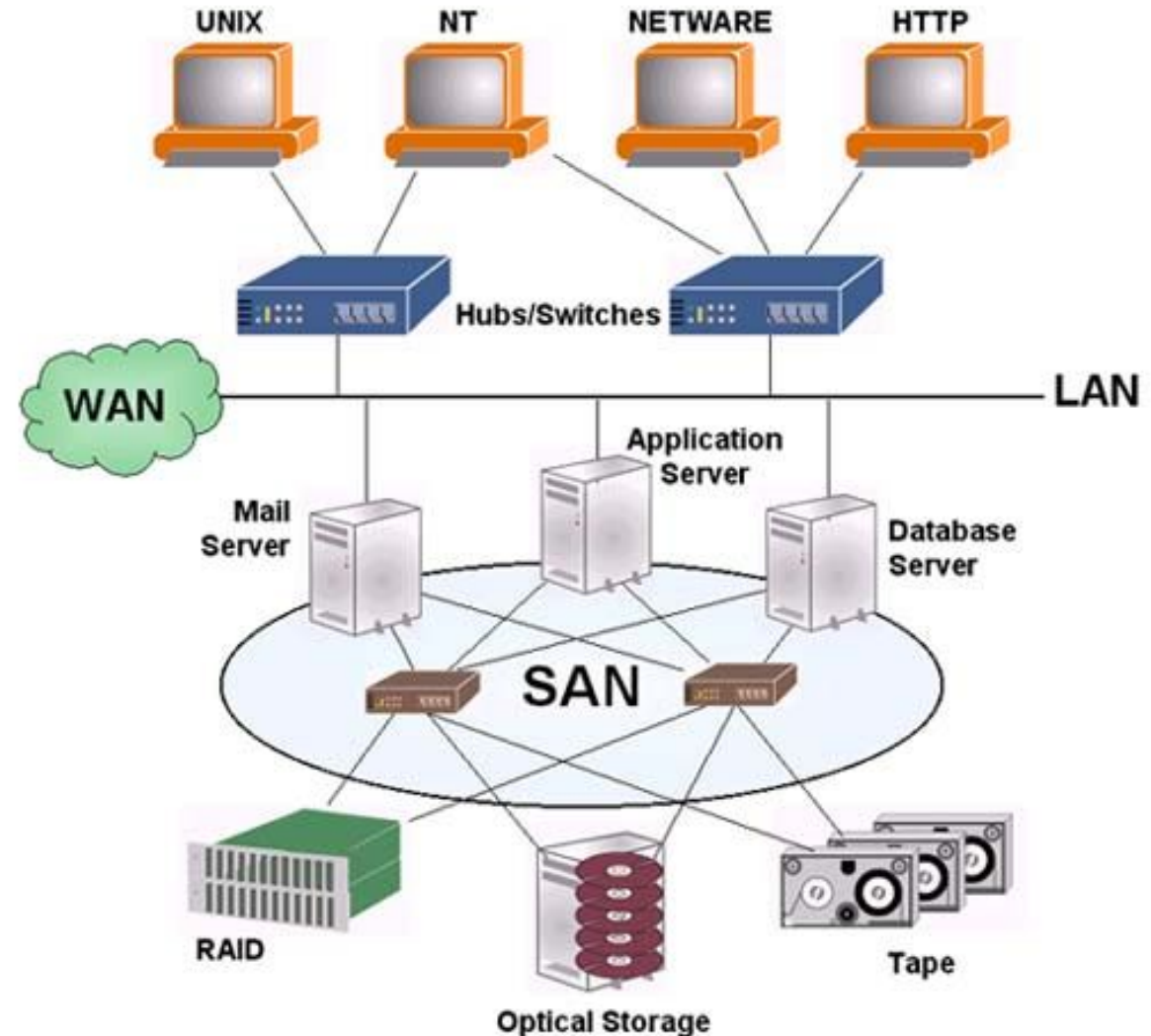# Develop a Backup Strategy

**SAN (Storage Area Network)** consists of interconnected hosts, switches and storage devices. The components can be connected using a variety of protocols. Fiber Channel is the original transport protocol of choice.
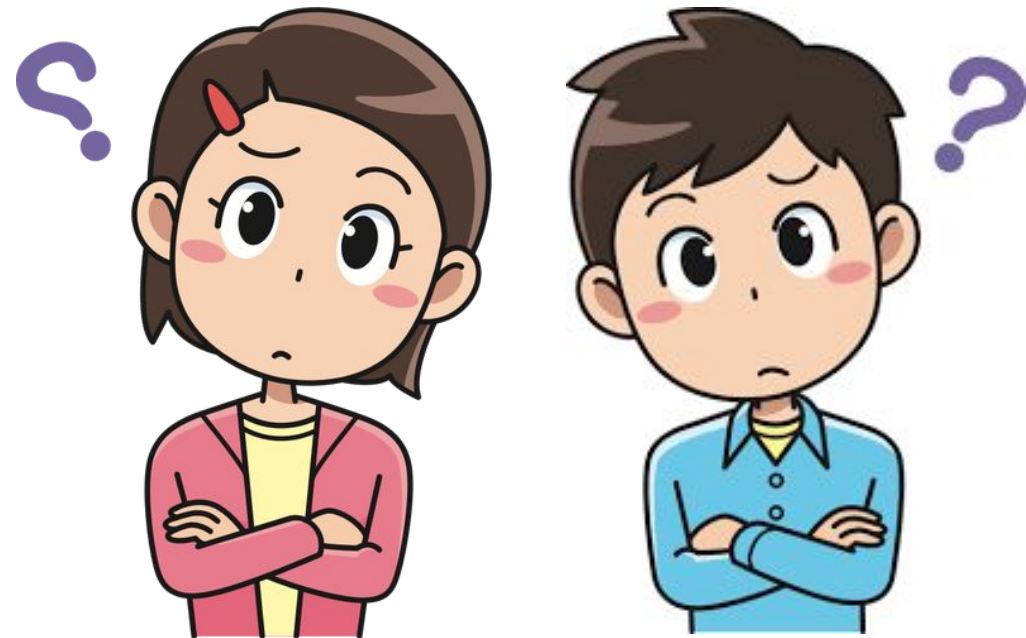
# Develop a Backup Strategy

❑ **Cloud Storage**
There are many cloud storage service providers for free:

- Dropbox

- Google Drive

- Amazon Drive

- Mega

- One Drive

- ..................



2GB   15GB   5GB   5GB   50GB   10GB   2TB

10GB   10GB   15GB   2GB   5GB   10GB

If you want to **perform backup task** of your data,

what are the **things should be considered?**

# Things that should be considered before starting develop backup strategy:

- ❖ Backup tool

- ❖ Target to backup (source data)

- ❖ Backup method

- ❖ Backup schedule

- ❖ Backup storage (Medium/location)

- ❖ Keeping backup data policies

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# Backup Tools

- **Windows Server Backup Features:** allow you to backup and recover your operating system, applications, and data. You can schedule backups to run once a day or more often, and can protect the entire server or specific volumes. (*Backup destination store only on local drive*)

- **Symantec Backup Exec:** is a data protection software product designed for customers who have mixed physical and virtual environments, and who are moving to public cloud services. With its *client/server* design, Backup Exec provides backup and restore capabilities for servers, applications and workstations across the network.

# Backup Tools

- **Acronis Backup and Restore:** is a backup software, disaster recovery, and secure data access provider to consumers. It includes physical, virtual, and cloud server backup software, storage management, secure file sharing, and system deployment.

- **AOMEI Backupper Server:** is a software for Windows server aims at solving disk partition cloning. This is on top of its primary server protection and recovery. Users can backup both virtual and physical servers without so much of an interruption on their running windows OS.

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# Practice Backup data on Windows server 2016

## Windows Server 2016:

❖ How to install Windows Server Backup

❖ How to configure Windows Server Backup

❖ How to backup data as manual backup

❖ How to set schedule backup for daily, monthly –etc.

# Any Questions?

# Review

1. What is full, differential, and incremental backup?

2. What is the windows server backup feature?

3. Why you need to backup your data?

4. What you need to consider before starting backup your data?

5. What is the NTbackup?