What is networked storage?

A network-attached storage (NAS) is a dedicated file storage device that provides data on an ongoing basis for employees to collaborate effectively across a network. Any computer network with overlapping server and client machines sends requests to servers. NAS devices are dedicated servers that only handle data storage and file sharing requests. It provides fast, secure and reliable storage services for private networks.

Why are NAS devices important?

Enterprises and small businesses in many industries choose NAS solutions because they offer an efficient, scalable, and low-cost storage solution. Compared to other services, NAS file servers give faster access to data, and are easier to configure and manage. It can support multiple business applications, including private email systems, accounting and payroll databases, video recording and editing, data logging, and business analytics.

Some of the benefits of NAS include:

Publishing on organizations’ private clouds

A private cloud is a cloud that hosts resources from an organization's own data center. They can be based on internal hardware resources or separate infrastructure provided by a third party. And you can use NAS devices to deploy private cloud storage in your organization.

Flexible local storage solutions for small businesses

NAS systems can be customized based on the size and requirements of the organization. There are low-cost devices with less storage space and their corresponding high-end devices that are more expensive.

What is networked storage used for?

Organizations use NAS solutions to perform a number of tasks, including:

File storage and sharing

Create active data archives or data backups and disaster recovery

Virtual desktop infrastructure hosting

Test and develop web-based and server-based network applications

Streaming media files and torrents

Store photos and videos that require frequent access

Create an internal print warehouse

For example, media companies create many images every day. However, the company is unable to stream this data to the cloud continuously due to network latency. Instead, it uses a superior NAS device to store the images. Any employee can access and edit these images via the company network.

What are the components of a NAS device?

NAS devices mainly consist of several components.

Physical storage disks

NAS devices can have anywhere from two to five hard drives, giving them high-volume storage capacity. Multiple physical drives are logically arranged as redundant storage enclosures, or what is called a redundant array of inexpensive disks (RAID). RAID is a virtual technology that combines multiple physical storage components into one or more logical units. This helps back up data and improve performance.

Central Processing Unit (CPU)

NAS hardware includes a CPU, which provides the intelligence and computing power to manage the file system. The CPU reads and writes data to process and serve files, manage multiple users, and integrate with the cloud as needed.

OS

An operating system is a software interface between the physical storage device and its user. Although bulk networked storage devices come with operating systems, there are other simple devices that do not come with an operating system.

Network interface

The NAS unit connects to the network through the use of a network interface. The network connection can be via an ethernet cable or Wi-Fi. Many NAS devices also have USB ports for charging or connecting other devices to the NAS device.

What is the basic storage principle for NAS devices?

NAS is a network attached storage unit for file-based data. There are three main storage methodologies:

1. File storage

In file storage, you store data in the form of files, organize files into folders, and place them under a hierarchy of directories and subdirectories. It is a common and well-known storage method.

2. Block storage

In block storage, a file is divided into smaller parts (or blocks), and each block is stored separately under a unique address. The computer can store blocks anywhere on the device. The server's operating system uses this unique address to reassemble the blocks that make up the file. This method is faster than searching through hierarchies to reach a file.

3. Object storage

Objects are discrete units of stored data without hierarchy or organization. Each data object includes descriptive information about that data (referred to as metadata) and a unique identifier number. Using this information, the system software can find and access the object.

File storage versus blocks versus objects

Each type of storage can be used in different ways. For example, file storage can be used for local file sharing, and block storage with high-performance applications. On the other hand, you can use object storage to store unstructured data, such as emails, videos, images, web pages, and sensor data ;

ng from the Internet of Things (IoT).