PRIVATE SERVER CLOUD STORAGE

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Abstract- As the advancement of globalization is inevitable and also the advancement of technologies that surrounds our lives, we found that we are craving for more technological advancement especially in our media life. These days portability in media is one of the crucial priority, because all of the current phones are lacking the ability to store all of our media files that we need right from our fingertips, and because if we use private cloud storage service our information privacy will be compromised, Thus because of these conditions we need something that can store our information, easily reachable from our fingertips, upgradable for the long run, while also keeping our private information safe and secure. We believe that private server storage is the answer to this problem, because it can store our data and media while also upgradeable at the same time, and our private information won't be compromised because we aren't using any services.

I. INTRODUCTION

1.1 Overview

Over the past few years, cloud storage services have been sprouting all over the world. Cloud storage is a model of data storage in which the digital data is stored in logical pools, the physical storage spans multiple servers (and often locations), and the physical environment is typically owned and managed by a hosting company. These cloud storage providers are responsible for keeping the data available and accessible, and the physical environment protected and running. People and organizations buy or lease storage capacity from the providers to store user, organization, or application data. Cloud storage services may be accessed through a co-located cloud computer service, a web service application programming interface (API) or by applications that utilize the API, such as cloud desktop storage, a cloud storage gateway or Web-based content management systems.

1.2 Purpose of research

Cloud storage services are being used as a means of storing substantial amount of data while being easily reachable (in this case, by the internet). Many (if not all) of this services are being hosted by a company, which means it is run and managed by a group of people that are working for it. However, because it is run by someone else (in this case, a company) there is a risk that your personal private information may be at risk because they could access it anytime they want if they wanted to, thus the aim of this paper is to explains (and hopefully convice) the readers as to why using a private cloud storage rather than using the company hosted ones is better and safer

1.3 Problem Formulation

There are some problems to be solved formula in this study. The formulations of this problem is closely related to the Usage of Server Accessing from Anywhere and Everywhere. Some of these formulations are :

1. Why we need to use private server storage?
2. How does the application the application of using a private server storage?
3. How is the application of the usage of the private server to accommodate comfort for the user?

1.4 Aims

This idea aimed to combine the technology between easy-to-access cloud storage service while maintaining private information privacy, thus eliminating the needs to use company-owned cloud storage service. This study is expected to give people the knowledge of how the server works and how to make it while also assuring the privacy and security of the private data itself.

1.5 Boundaries

Because of private server storage is rarely heard of commonly in the society, the complexity of the system itself and also because of the price to build the server itself, therefor :

1. There won't be talking about how this system is prone to hacking without firewall installed
2. There won't be topics regarding of what will happen if the electricity supply to the server machine is completely cut-off
3. There won't be topic discussing the budget requirement

II. BACKGROUND

2.1 How does it work

Server PC is basically a PC that's built to run in 24/7 and while connected into the internet and accessed by the user. These hardware is certified by manufacturer as Server grade. The parts, consist of Motherboard, Ram, Processor, Hard drive, GPU, and Redundant power supplies. These parts must be certified and tested by manufacture with high quality control, with the operating system of the server itself that can utilize and harness the power of the hardware fully. The difference between the Server grade hardware and mainstream hardware are the component that was

chosen in the Server are “cherry picked” and have one purpose that is to work in any circumstance while the mainstream grade hardware are more feature rich with more user friendly interface.
Freenas, the OS that is dedicated for running the server machine,is a free and open-source network-attached storage (NAS) software based on FreeBSD and the OpenZFS file system. It is licensed under the terms of the BSD License and runs on commodity x86-64 hardware. FreeNAS supports Windows, OS X and Unix clients and various virtualization hosts such as XenServer and VMware using the SMB, AFP, NFS, iSCSI, SSH, rsync and FTP/TFTP protocols

2.2 Storage server PC components
The component of the PC itself differ each generation and iteration of the part, this is because each year hardware manufacturer always adding new feature to their components as input from the user are in. The basic and recommended component for storage type server is Intel xeon that was equipped by server motherboard either from intel itself or other manufacture, ECC registered unbuffered ram in relative size depend on task that will be given in deployment, raid card, and Server grade drive either mechanical or solid state. Lastly the operating system is either windows based or linux based OS.

2.3 concept of N.A.S
Network-attached storage (NAS) is a file-level computer data storage server connected to a computer network providing data access to a heterogeneous group of clients. NAS is specialized for serving files either by its hardware, software, or configuration. It is often manufactured as a computer appliance – a purpose-built specialized computer. NAS systems are networked appliances which contain one or more storage drives, often arranged into logical, redundant storage containers or RAID.
Network-attached storage removes the responsibility of file serving from other servers on the network. They typically provide access to files using network file sharing protocols such as NFS, SMB/CIFS, or AFP. From the mid-1990s, NAS devices began gaining popularity as a convenient method of sharing files among multiple computers. Potential benefits of dedicated network-attached storage, compared to general-purpose servers also serving files, include faster data access, easier administration, and simple configuration.

The hard disk drives with "NAS" in their name are functionally similar to other drives but may have different firmware, vibration tolerance, or power dissipation to make them more suitable for use in RAID arrays, which are sometimes used in NAS implementations. For example, some NAS versions of drives support a command extension to allow extended error recovery to be disabled. In a non-RAID application, it may be important for a disk drive to go to great lengths to successfully read a problematic storage block, even if it takes several seconds. In an appropriately configured RAID array, a single bad block on a single drive can be recovered completely via the redundancy encoded across the RAID set. If a drive spends several seconds executing extensive retries it might cause the RAID controller to flag the drive as "down" whereas if it simply replied promptly that the block of data had a checksum error, the RAID controller would use the redundant data on the other drives to correct the error and continue without any problem. Such a "NAS" SATA hard disk drive can be used as an internal PC hard drive, without any problems or adjustments needed, as it simply supports additional options and may possibly be built to a higher quality standard (particularly if accompanied by a higher quoted MTBF figure and higher price) than a regular consumer drive.

Deployment of these was will be in the private property without being oversee by company that will be look to your sensitive data.

CONCLUSSION AND DISCUSSION

Cloud storage naturally is a huge service allows the users to access their files anywhere, such as computers, laptops, tablets and smartphones and this gives users to be unwary about losing their files. It makes our lives easier to edit, add and share any file anywhere in any device that can access cloud storage service.
In the other hand, users still have a concern about their private personal information being accesed by someone else if they chose to use the ones that are hosted by a company.Anyways, the cloud storage service is growing up and many companies heading to invest in it and users are growing up too, and even the private personal cloud storage users number are increasing too.

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