

STORAGE MANAGEMENT SIMULATION USING SAMBA SERVER IN DIREKTORAT INOVASI AND INKUBATOR BISNIS

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Abstract

The storage media used is external storage and also online, for example Google Drive. Google Drive only has 15GB of free space. Meanwhile, those who access data at the Directorate of Innovation and Business Incubators do not only stop at DIIB, but also the Director, Head of Study Program, Quality Assurance Agency, Lecturers, Students and the General at Bina Darma University. So there is no management for accessing storage at DIIB. Moreover, there is no management for accessing storage. Therefore, researchers implemented storage management at the Directorate of Innovation and Business Incubators using the Action Research method, which aims to make it easier for users to access various files or documents online and divide separate access rights for each existing unit. Making a server requires an operating system in the form of Linux Ubuntu and a Web Server using Samba Server. After that, access is divided into three, namely private cloud storage, public cloud storage and hybrid cloud storage. As a result of this research, the author succeeded in carrying out storage management at the Directorate of Innovation and Business Incubators.

Keywords : Storage Management, Access Rights, Samba Server, Action Research.

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INTRODUCTION

The Directorate of Innovation and Business Incubators (DIIB) is a directorate that has storage media for managed data. The storage media used is external storage and also online, for example Google Drive. Google Drive is storage managed by Google since 2012. The size of the free space you get on a Google Drive account is 15GB [1]. For Google Drive services and can only be used with one registered account. Google Drive is easy to access anywhere, anytime and using any device to store files in the form of photos, videos, documents and percentages. Meanwhile, not only DIIB accesses data at the Directorate of Innovation and Business Incubators (DIIB), but also Directors, Heads of Study Programs, Quality Assurance Board, Lecturers, Students and the General at Bina Darma University. This makes accessing storage at DIIB less effective and inefficient for units related to DIIB, especially since access to storage has no management.

Researchers are trying to find solutions to the problems above, storage management is a solution to access problems at the Directorate of Innovation and Business Incubators (DIIB) because the media storage used now is considered less effective and inefficient

This research aims to create separate access rights for data at the Directorate of Innovation and Business Incubators (DIIB), not only DIIB, but also the Director, Head of Study Programs, Quality Assurance Board, Lecturers, Students and the General at Bina Darma University [2]. Makes it easier for each unit to share data storage with the unit. And we can identify users on the storage server by separating the passwords for each unit.

METHOD

In this research, researchers will use the action method or Action Research [3]. According to action research is a method that describes and explains the problem context situation or

situation together with the intervention process for development. The Action Research method is a research design that includes things that the researcher will do starting from making a diagnosis to the final analysis, the data which is then concluded and suggestions are given.

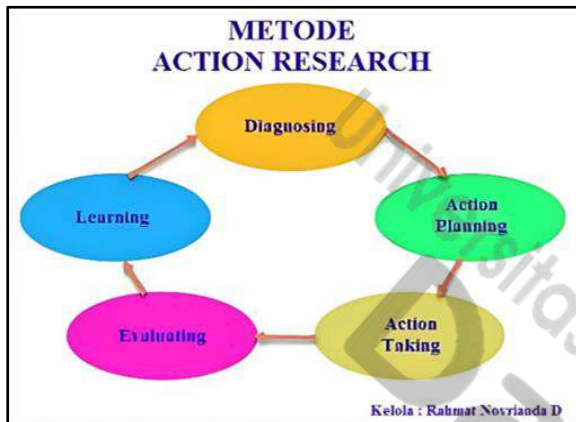


Figure 1. Action Research Method

1. Diagnosing

analyzing online storage and storage management problems for units that access data in the Directorate of Innovation and Business Incubators. carry out storage management design on the server.

2. Action Planning

create a storage management plan to regulate the use of each storage space. create storage using Samba is software that allows sharing files and printers over a network and can be used as a network attached storage service to store and access files online [4]. Install the Ubuntu Linux operating system then install the Samba server. setting user or group permissions and access to specific folders or directories. Private Folder Access rights for Kindergarten Director, Head of Kindergarten Study Program and Quality Assurance Agency Hybrid Folder Access rights for Kindergarten Lecturers Public Folder Access rights for Students and the Public. Testing storage management with Samba Server is an important

step to ensure that the setup functions as expected and can meet requirements. If you successfully transfer files using Samba Server that contain different types of files, such as photos, videos, and documents is a good result. This indicates that your Samba Server configuration is working correctly and users are successfully accessing various types of data.

3. Action Taking

The first steps in implementing storage management are to create a server using a Samba server by first installing a virtual box. After the virtual box is installed, install Ubuntu Linux. After Ubuntu Linux is running, continue installing the Samba server.

4. Evaluating

evaluate the results that have been implemented in the form of simulations, at the evaluation stage the research carried out is to prove the results of creating storage management whether they meet needs or not and determine who can access.

5. Learning

At this point, the final part of the cycle has been completed by performing a step-by-step review and then this quest can be completed [5]. The researchers released the results with the aim of finding out whether Storage Server Management can group access rights for each unit, units can log in and access the accounts that have been created and units can share files within them. Files shared include photos, videos and documents.

RESULT AND DISCUSSION

The researchers released the results with the aim of finding out whether Storage Server Management can group access rights for each unit, units can log in and access the accounts that have been created and units can share files within them. Files shared include photos, videos and documents [6].

The results of storage management accessed via laptop to laptop will be shown in Figure 2.

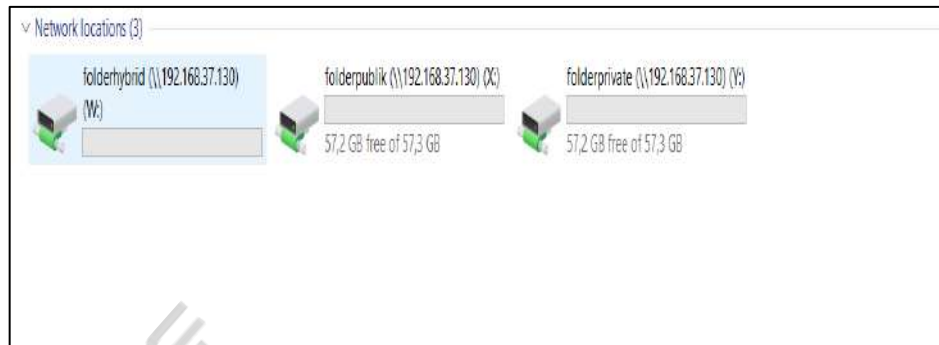


Figure 2. Storage Folder Management



Figure 3. Access Application for Smartphones.



Figure 4. Dashboard View When Accessed Via Nextcloud

in the image above Figure 3 Apart from laptops and PCs that can access the unit, you can also access it via smartphone as long as it is connected to an internet network that has been connected [7]. The way to access the unit via Smartphone is to download the Cx File Explorer application on the Play Store. Display when accessed via the web. As for the initial display, if we have accessed it, the dashboard will appear.

Sharing Test Results on Server At this stage the test results are in the form of a table which will display information according to the function being carried out whether it is working or not [8]. In the admin table, sharing is done to each account. and the account receives files, photos and videos shared by the admin and the group can access them [9].

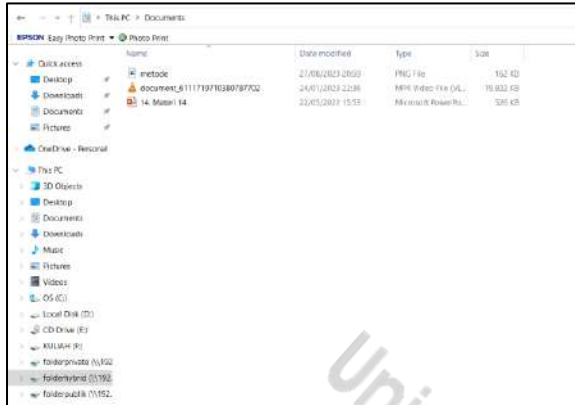


Figure 5. Access Sharing in Folders.

Figure 5 is the access carried out by the client, namely the computer engineering lecturer who has successfully opened the file that has been shared by the admin. The files that are shared are photos during pkkmb activities, videos during pkkmb and competition activities as well as copyright certification.

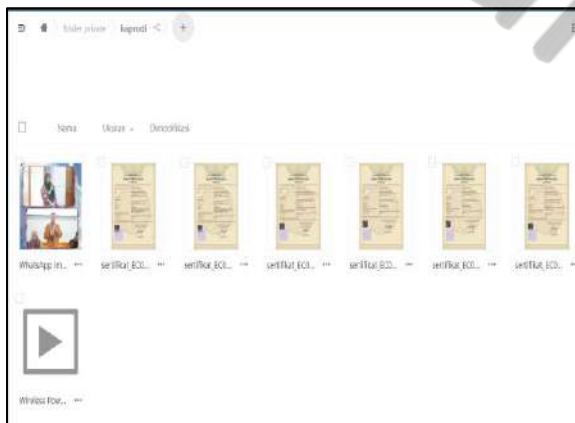


Figure 6. Access Sharing in the folder nextcloud

After sharing is done, there will be a description of the waiting time for the file being shared. If the file is 1Mb to 10Mb, there is no waiting time, it will be uploaded immediately, as in the example of uploading a photo. Meanwhile, for files uploaded of more than 100Mb there will be a waiting time of 1 to 2 minutes. Because when sharing there will be a process in the left corner of the display, where it is written that there is a time information, from there you will know the time needed to upload files, photos and videos.

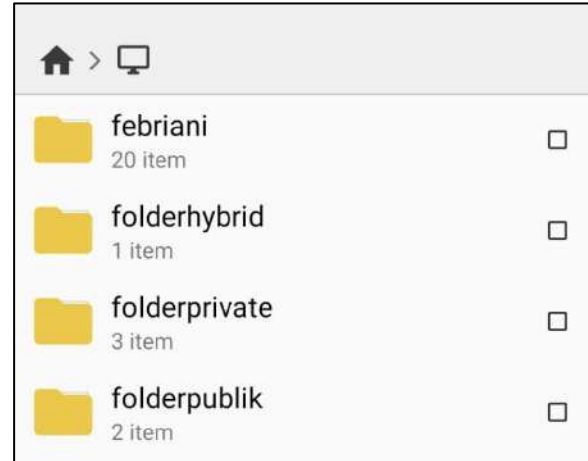


Figure 7. Folder display after logging in using a smartphone

View access to all folders if the admin accesses them via cellphone with the help of additional applications. Especially for additional applications, it is more mandatory to go to admin because all the folders created will appear.

Table 1. Sharing Test Results on Server

| No | Nama Akun | Sharing ke Akun | Keterangan |
|----|-----------|-----------------|---|
| 1 | Admin | Folder Private | Admin berhasil melakukan Sharing ke folder private. Yang mengakses adalah Direktur, Kaprodi Tk dan Badan Penjamin Mutu. |
| 2 | Admin | Folder Hybrid | Admin berhasil melakukan Sharing ke folder Hybrid. Yang mengakses adalah dosen Tk. |
| 3 | Admin | Folder Public | Admin berhasil melakukan Sharing ke folder public. Yang mengakses adalah mahasiswa dan umum. |

Access Test Results on Server At this stage, the results of access testing on the server will be displayed according to the folder that has been created and the user who has been provided with access will be displayed [9].

Table 2. Access Test Results on Server

| No | Folder | Yang Mengakses | File yang diakses | Keterangan |
|----|----------------|--|--|---|
| 1 | Folder Private | Direktur, Kaprodi Tk dan Badan Penjamin Mutu | Gambar kegiatan lomba, dokumen hak cipta, dan video lomba. | User berhasil melakukan pengaksesan terhadap file baik itu membuka, memutar video dan mengunduh file dan gambar tersebut. |
| 2 | Folder hybrid | Dosen | Gambar kegiatan pkkmb, dokumen laporan dan video kegiatan pkkmb | |
| 3 | Folder Publik | Mahasiswa dan Umum | Gambar mahasiswa pkkmb, dokumen mahasiswa, dan video mahasiswa pkkmb | |

Test Results for Access to Server Via Nextcloud
The results of testing access to the server via the web will be displayed in the table below [10]. Groups can access NextCloud via their respective websites as long as they are still connected to the network they have been connected to. on nextcloud for access according to each account created by the admin. Groups can share, download and upload files, photos and videos. Its performance is almost the same as Google Drive

Table 3. Test Results for Access to Server Via Nextcloud

| No | Ukuran File yang di <i>Sharing</i> | <i>Sharing</i> ke Akun | Keterangan |
|----|------------------------------------|--|--|
| 1 | 1Mb sampai 10Mb | Folder <i>Private</i> , Folder <i>Hybrid</i> dan Folder Publik | Jika admin melakukan <i>sharing</i> dengan ukuran file yang kecil maka dibutuhkan waktu hanya beberapa detik saja. |
| 2 | 100Mb sampai 1Gb | Folder <i>Private</i> , Folder <i>Hybrid</i> dan Folder Publik | Jika admin melakukan <i>sharing</i> dengan ukuran file yang sedikit besar maka dibutuhkan waktu hanya beberapa detik saja. |

CONCLUSION

The conclusion The researcher tries to draw conclusions and suggestions which will later become an illustration and guideline for other readers to design and build storage server management using Samba servers in the future [6]. The storage management simulation on this server was created to provide knowledge and make it easier to build storage management. Storage management is built using a local network, so users need to be connected to an internet network that has server access rights in the form of a cellphone hotspot. Storage management based on the distribution of private, public and hybrid folder access rights has been successfully created and can be accessed by users. With storage management, it can make it easier for Directors, Heads of Study Programs, Quality Assurance Bodies, Lecturers, Students and the General Public to share data while it is still on the local network [11]. Based on the research results, several suggestions can be concluded that may be useful for readers who want to try building their own storage management. For further development, it is hoped that hybrid folders will be given a username and password just like private folders. It needs to be further developed in terms of connection so that it can be accessed anywhere via the internet, not only within the Bina Darma University environment. In writing this final assignment, the author feels

that there are still many shortcomings and imperfections, so in the future if anyone wants to continue this final assignment, they can develop it to be even better.

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