International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2013): 4.438

An Efficient Approach towards File Storage and Sharing in Network

Anil Bharat Ahir[1], Hira Namdev Rakhunde[2]

[1]Lecturer, Babasaheb Gawde Institute of Technology, Mumbai Central, India

Abstract: ***Network Attached Storage (NAS), allows homes and businesses to store and retrieve large amounts of data more reasonably. The plug and play nature of NAS makes it a flexible storage option for small businesses and is easily administered by existing IT staff. Many researchers are leading toward deployment of virtualized environments with Network Attached Storage (NAS) that shared storage resources because of the significant presence of Network File system Storage (NFS) in the datacenter today. Network Attached Storage servers are independent, smart devices that are connected directly to local area network. This cleverness on the network attached server device enables true data sharing among heterogeneous network clients. The use of Network Attached Storage (NAS) has become increasingly popular when it comes to virtualized Environment. Multiple users can access the storage drive at the same time so files can be shared among multiple users and devices.NAS is easy to implement and easy operative for sharing of data and affordable financially. Storage as a service is implemented using NAS and tested in small environment. It shows that it is an operative storage system for internet storage in terms of cost and the management of the system.***

Keywords: NAS, SAN, Login, Download, Share

1. Introduction

In Direct Attached Storage, the Storage is directly attached by a cable to the computer processor. Here Storage system attached to server or workstation, without a storage network in between. But Direct Attach storage faces lacuna in some aspects like scalability where host bus adaptor can only support a limited number of drives. For situation with strict up-time requirement, or situation with rapidly increasing storage requirement, DAS may not fall true. Other disadvantage of DAS is SCSI device connections, which cannot typically exceed 12 meters, which bound the structure with in hand distance connections [1]

A Network Attached Storage (NAS) device is a network appliance that simply “plugs in” to your existing network infrastructure that provides centralized file and print services to clients on numerous platforms. In contrast to Direct Attached Storage (DAS), which enhance the storage capacity of a single workstation, a NAS device improves the storage volume of all workstations on the network. NAS benefits are listed below[6]

1) Efficiency and Reliability
   NAS has its own operating system unlike a general purpose server, which uses a wide range of hardware and software to accomplish many diverse tasks, a NAS server consists of a streamlined operating system and specialized hardware and software component
2) Flexibility
   NAS storage can be used by multiple heterogeneous clients and servers throughout your network, even those in branch offices or satellites locations
3) Easy to interact
   You can form and deploy most NAS servers fast and easily, with little IT ideas required. Because NAS readily supports heterogeneous environments, it’s not required to do any special configuration on NAS servers to work with it
4) Data shield
   Disk failures are an unlucky reality. They occur usually in any types of disks, in all types of setup structure. If your data is left in an unprotected configuration, a simple disk failure can lead to disastrous loss of your data with a few easy steps.
5) Solving business needs
   Many SMB lack the specialized IT staff required to manage a complex storage environment. When storage systems are problematic to arrange or maintain.

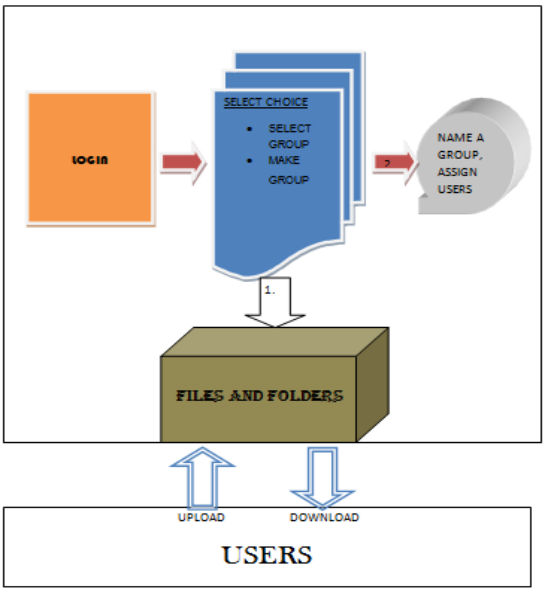
2. Working

Like traditional file servers, NAS follows a client/server design. NAS is single hardwaredevice, often called the NAS box or NAS head, acts as the interface between the NAS andnetwork clients. These NAS devices are standalone hardware devices consist of multiple hard rive racks it require no monitor, keyboard or mouse. They generallyrun an embedded operating system rather than a full-featured NOS. One or more disk (andpossibly tape) drives can be attached to many NAS systems to increase total capacity. Clients devices are always connect to the NAS head and not to the individual storage devices. Clients generally get access to the services of a NAS over an Ethernet connection. The NAS appears on thenetwork as a single "node" that is the IP address of the head device.A NAS can stock any data that seems in the form of files, such as email data, Websitecontent, remote system backups, and so on. Overall, the uses of a NAS parallel those oftraditional file servers.NAS systems struggle for reliable operation and easy management. They often includebuilt-in features such as disk space quotas, secure authentication, or the automatic sending ofemail alerts should an error be detected[3]

3. Proposed System Idea

The proposed System is designed for users who want to maximize backup reliability make files available in an network for others to access it while minimizing the need for

local backup equipment and handling of tapes. It will be a online local webpages that will provide the access to interact with system by providing automated, centrally managed, reliable backup facilities for a variety of workstations. Along with theprice of the backup server hardware, data storage media, operations, and system support, there is an extra charge for this backup option. Network Backup is an enterprise-level backup product capable of protecting your most valuable data. Risk of increased network traffic, congestion, platform heterogeneity should be resolved.[2]

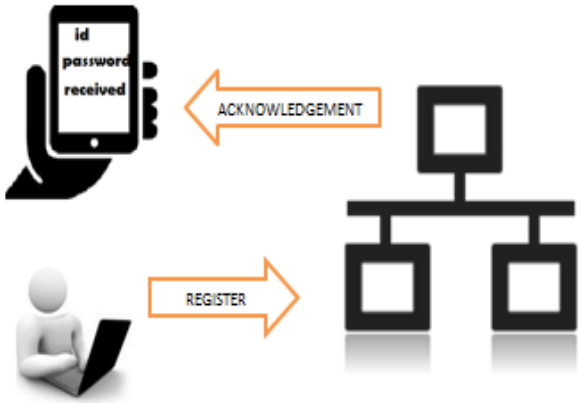


4. Implementation

On analyzing the proposed architecture it needs four main functional blocks. One is to manage the connection between server and various clients. The functions are separated and implemented as four main modules. [2]

4.1 User Management

1) Sign Up
   Initially, all the users who wish to use this application have to register themselves. In this module all the users are registered with the server. At the registration time we should specify the mandatory fields like name, email id, phone number etc.
2) Send SMS
   User name and password is text via sms to registered users .It is done after the validation process by administrator
3) Get Access
   User can login using User ID & Password sent by Administrator via sms. When the user gets registered, he is provided with a randomly generated password. In Login, the user first logs in by using the username and password that is provided to him once he is registered.



4.2 File Sharing & Management

1) Share Management
   In this, the user can share his files as per his choice. The user browses the file he wishes to share. The file to be shared is then given to the user or a group of users as per selected. Whenever a file is shared a broadcast message is sent to all users. Sharing may be Public, Private or Group. [2]
2) Group Management
   Owner can create new group, edit or delete existing group.The user is also given an option to decide whether the file is to be shared either individually or to a group. While creating a group, he can select the number of users as per his wish[2]

4.3 File Download

Once a client logs in his account, he has an option to download the files the other user(s) wishes to share with him. Only from these the client can download the file. This is client- to- client communication but to the client, he feels as if he is retrieving the data from the server directly. The server just provides the path and ip address by means of which the client connects with the file shown in his list. [2]

5. Conclusion

File sharing mechanism are available from long back and file sharing is the need for today's world. File sharing mechanism need lot of improvement now using a file sharing mechanism one canconnect, share, edit, and view files with in a LAN connection. A majority of team members are now involved in different aspects of document creation, often in different locations, or even working for different companies. The ability to share documents easily and securely via the network is a growing need among businesses worldwide. This enables you to store, access, organize, and share your files through one central location. It is an information storage controller which is network distributed. Such a system provides an easy registration process for the users. & provision for updating the user profiles. Low cost and Maintenance ease to install software make it suitable to a number of applications. Transparency issues, location and access is resolved well. As there are no native codes the project can be implemented in any platform. The system can be improved by adding more functional capabilities .It can be extended to a WAN and Wireless

WAN. Mailing is done to inform users about successful registration.[2]

References

[1] PradnyaEknathGaonkar, SachinBojewar, JayeshAjit Das "A Survey: Data Storage Technologies", International Journal of Engineering Science and Innovative Technology (IJESIT) Volume 2, Issue 2, March 2013, ISSN: 2319-5967
[2] Praveen Vijai, MinnuMeria, MidhuBabu, "Dataplexed Network Attach Storage System" International Journal of Scientific Research vol. 3(2),Feb-2014 ISSN :2277-8173
[3] NathwaniNamrata, "Network Attached Storage Different From Traditional File Servers &mplementation Of Windows Based Nas", International Journal Of Computer Engineering & Technology Vol. 4(3), May 2013, ISSN: 0976-6375
[4] Sukhdeep Singh, SamiAnand"Implementing Storage as a Service in Cloud using Network Attached Storage", International Journal of Computer Applications Vol. 108, Dec 2014 ISSN: 0975-8887
[5] Maria AndleebSiddiqui, Hammad Kamal, " A Proposed Approach for Deploying Network Attached Storage by Configuring Virtual Switch In ESXi International Journal of Scientific & Engineering Research, Volume 5, Issue 6, June-2014 ISSN 2229-5518
[6] Technofirmsolutions.blogspot.in/2012/06/why-use-nas.html

Author Profile

Anil Bharat Ahir received the Degree of Bachelor of Engineering in Computer Engineering from Mumbai University in 2007 and pursuing Masters in .Engineering In Information Technology from Mumbai University. Currently Working as Sr. Lecturer in M.S.B.T.E. affiliated Babasaheb Gawde Instiute of Technolgy since 2008.

Hira Namdev Rakhunde recived the Degree of Bahelor in Information Technology from Shivaji University in 2004. Currently Working as Sr. Lecturer in M.S.B.T.E. affiliated Babasaheb Gawde Instiute of Technolgy since 2007