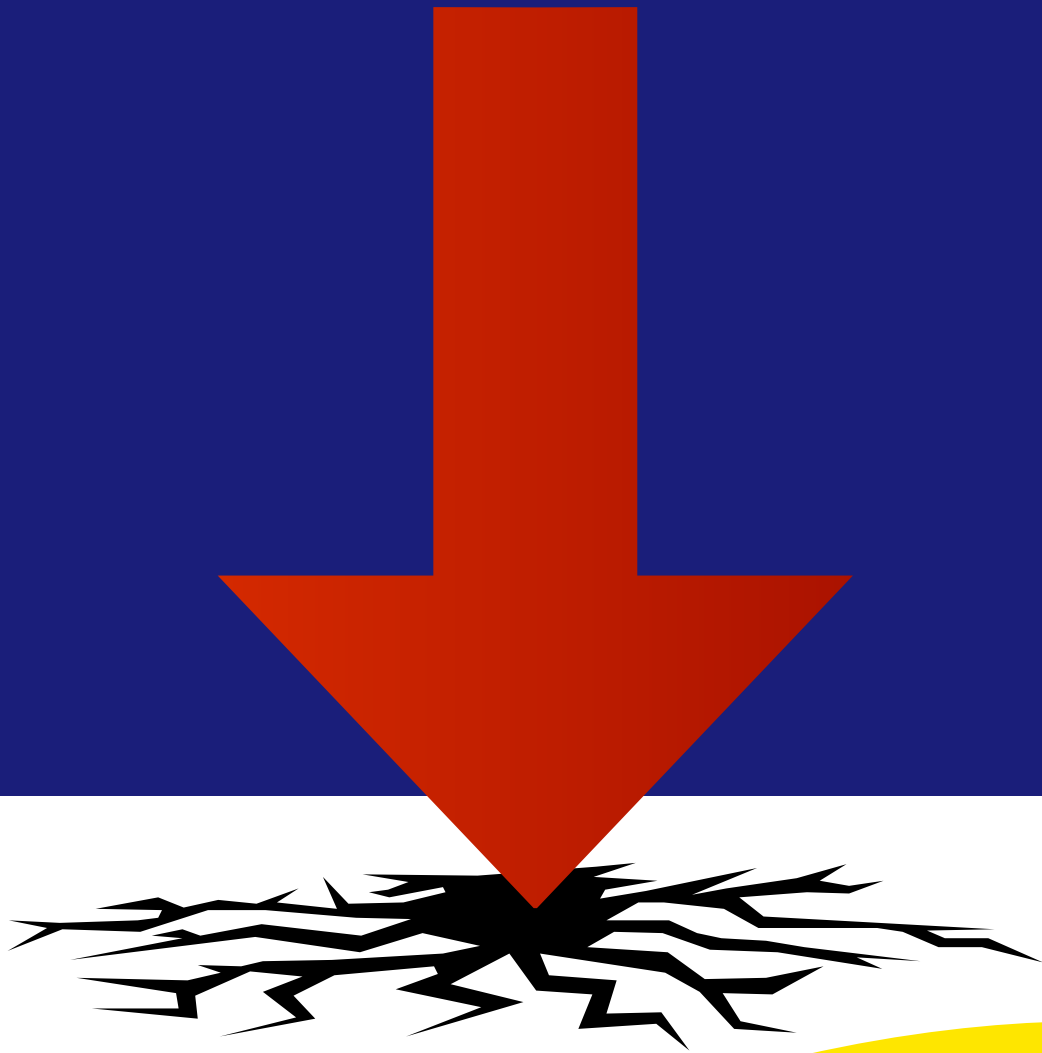


BCP and DR Plan With NAS Solution



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Introduction

Organizations today operate in a highly competitive environment. While technological advancement has helped them reach unimaginable heights, the impending threats of any disaster, have also evolved with the new age technology. In today's fast-paced digital landscape, where 90% of the data is stored electronically, loss of important data means loss of business.

Some of the threats include:

- Natural disasters (floods, earthquake)
- Man made disasters (terrorist attacks, sabotage)
- System malfunctions (Complete breakdown due to an application error or network failure)

Now, some of these threats may never occur, but preparing for such an unseen catastrophe so that the losses are minimal is a smart

strategy. A well-defined, minutely documented business continuity plan can help mitigate risks and is one of the most valuable investment for an organization nowadays.

An effective BCP (Business Continuity Planning) should incorporate the following steps:

- Prevention
- Response
- Resumption
- Recovery and Restoration

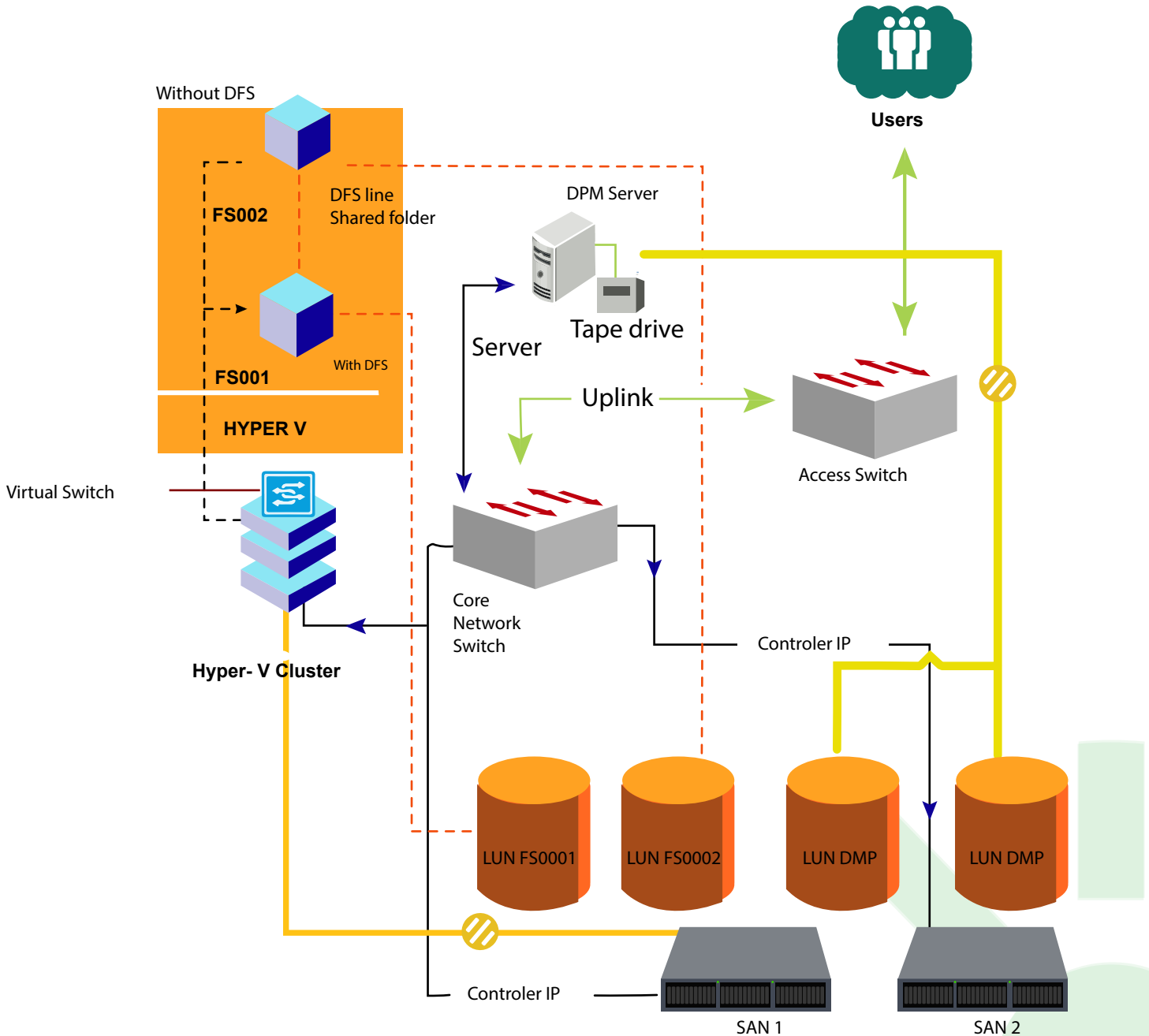
This is a technical view point of implementing NAS solution as a secondary file server in any data center environment where we have passive file server configured on Microsoft Windows platform. The idea of implementing NAS solution will help us to mitigate downtime of service outage to some considerable level.

The purpose of this document is to prepare a case for implementation of passive file server using NAS solution for financial institutes.

To provide BCP and DR management to businesses, institutes are looking for a solution to have Primary and secondary file server to meet the BCP requirement. With existing environment, business critical data are stored and shared in windows based file server without a having proper plan for disaster management. This may be a point of concern in any disaster situation. To mitigate this, we are planning to have a secondary file server which is independent of server OS and help us restore the business faster instead of the traditional manner.

Current State of Infrastructure

Most financial institutes configure their file servers on Windows platform with or without DFS technology. However with, with this particular file server environment there is a risk of losing data in case of a major disaster. Currently, we have disk backup / tape backup solutions configured within the infrastructure to allow restoring the services in case of a disaster, but this can be a time- consuming process and is dependent on external parties.



Ref – File server 1 – FS001 and File server 2 – FS002

This infrastructure has 3 Node Hyper-V Clusters and a dedicated Backup server which are connected with two SAN storages to host the virtualization environment and backup solution. Two file servers (Virtual Machine) are hosted on Hyper-V Cluster which store critical data needed for business. The DFS role is configured on FS001 while for some of the shares the locations are pointed to FS002 folders. In this case, Microsoft DPM is being used for the backup solution with the option of tTape and disk backup. In case of a disaster situation, restoration of the above file servers require approximately 7 hours and may actually extend depending on external factors. .

Current Requirement

For any financial institute, the more time one takes in DR (disaster recovery), the more is the direct or indirect revenue loss. Thus, to minimize the loss, it is very important to have a secondary level file server implemented within the infrastructure, independent of server OS. The secondary file servers help in reducing the downtime in measurable level and provides faster business restoration.

Past experiences have taught that there can be considerable restoration delay using backup solutions and hence it is highly recommended that these institutes use NAS based solution providing faster recovery allowing user to access the data for business activities while the actual restoration process take place in background with minimal interruption.

Why NAS over other storage solutions?

The market at present has a plethora of products offering storage option like SAN, NAS and DAS. The advantage of NAS over DAS is that it simplifies file sharing among multiple users while potentially offering faster performance than a traditional file server, while the advantage of NAS over SAN is that it is OS independent. The key benefit of using NAS solution is the ability to consolidate structured and unstructured data into a file-sharing environment that utilizes the existing IP infrastructure to its maximum potential.

Scenario 1:

Complete storage cluster is down. As a result, all VMs will be down too along with the infrastructure hence causing a disruption in business activities. It will take considerable time to restore the data and services depending upon the magnitude of the outage.

Resolution:

Work towards getting the storage back and ensure the file server is up. If we do not see any Passthrough disk, then configure DFS on the file server itself and point to NAS IP (access the shares on NAS with IP address - direct access). In case of applications, we need to update the application owners to make the required changes to include NAS IP, where they are required to point to NAS.

Scenario 2:

The server is accessible but data is not accessible / In case of connectivity between users & file server is down. In both these cases, data is available but users cannot access that with the shared names/published drives.

Resolution:

Change the DFS configuration to point to NAS location as live sync is available with the file server. In case of applications, we need to update the application owners to make changes to include NAS IP, where they are required to point to NAS.

Scenario 3:

Storage drive / hardware has failed. This is related to the RAID that is hosted with pass through disk.

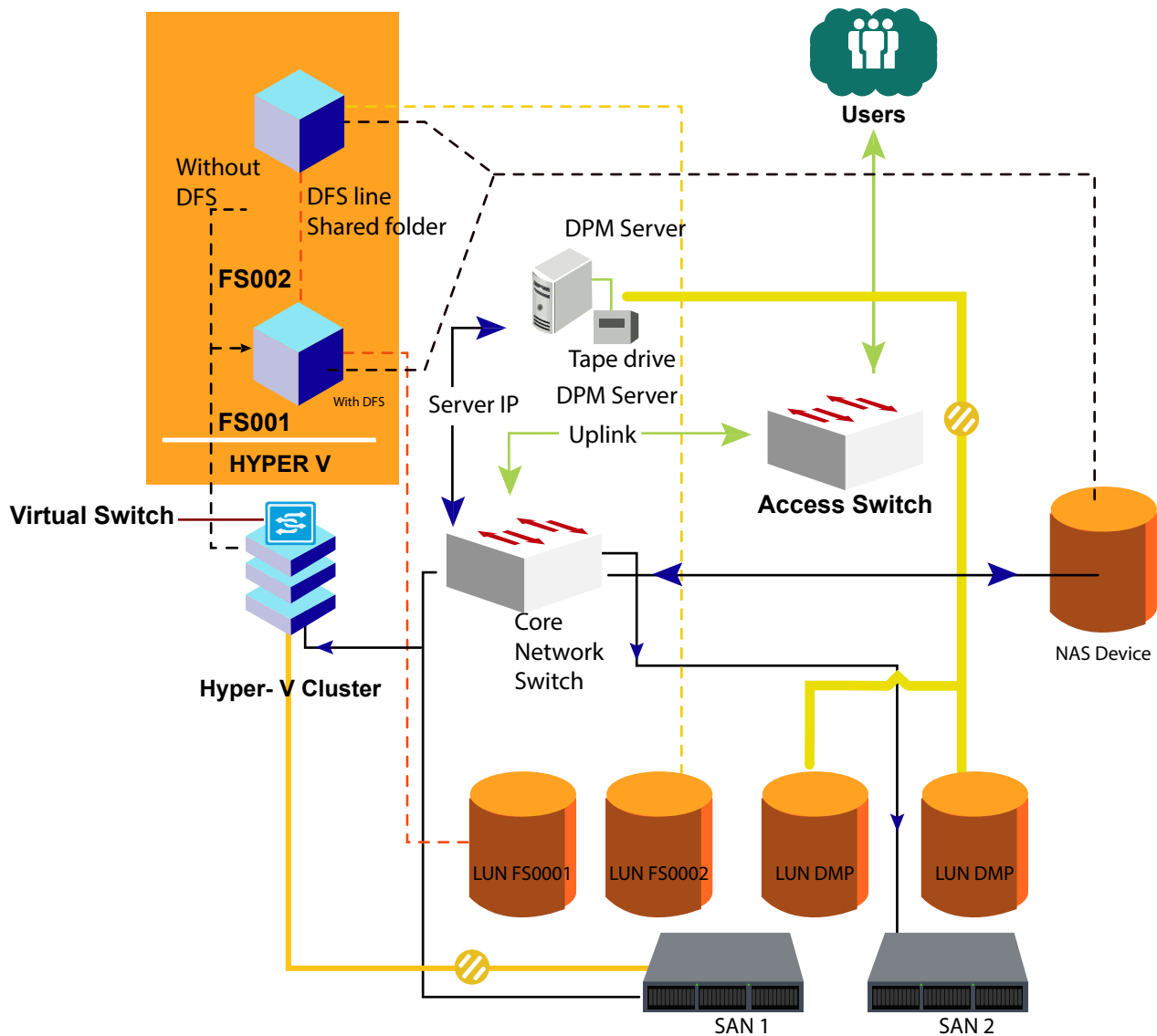
Resolution:

Change the DFS configuration to point NAS & rectify the H/W issue. The data will sync back from NAS to file server.

Proposal for NAS Solution – Implementation

Proposed NAS solution will be used as secondary file server environment in institute's current infrastructure to act as DR solution. During the recent Hong Kong Outage, restoring the data from Backup took quite a long time. Hence we needed certain technologies which acted as a secondary file server and replicated data from file servers and vice versa. NAS fulfills this particular requirement.

The below design describes NAS device connectivity within existing infrastructure. NAS device will be configured with live sync, backup & restore capability and monitoring.



Ref – File server 1 – FS001 and File server 2 – FS002

Conclusion:

We can take the advantages of using NAS solution to provide BCP to business in case of any disaster. Described NAS based solution will help restore the services with minimal down time while the actual restoration process are taking place in background. NAS is OS independent. The key benefit is the ability to consolidate structured and unstructured data into a file-sharing environment that utilizes the existing IP infrastructure.

References:

Reference has been taken from NAS implementation architecture proposed for one of the world leading financial institute.

About the Author



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IT professional with 12 years (approx.) of experience in infrastructure, Virtualization and cloud management. He has bachelor and Master's degree in Computer Science and Information Technologies. In past he has engaged in different role and responsibilities such as solutions architect, Data Centre consultant, Technical specialist and system engineer. He is specialized in Windows flavour OS, UNIX flavour OS, Virtualization/cloud solution, Storage, Backup, DR solution, Data center hosting solution. In past he has worked with several multinational like Siemens, Wipro, iPass etc. On personal aspect – He love to play cricket and feel happy by spending his free time with family and friend. He is reachable at Chandra.prakash@happiestminds.com

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