

Network Attached Storage as a secure storage solution for 2 separate Offices on 2 separate Networks.



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1. Introduction

The need for a centralised and efficient storage solution for departments / businesses has become increasingly important with the rapid growth of data storage requirements. Small businesses or niche departments, require a reliable and cost-effective storage solution that can meet their growing data storage needs. The author was tasked to create a NAS system which could store data that required frequent access across 2 offices on separate networks.

2. Aims & Objectives

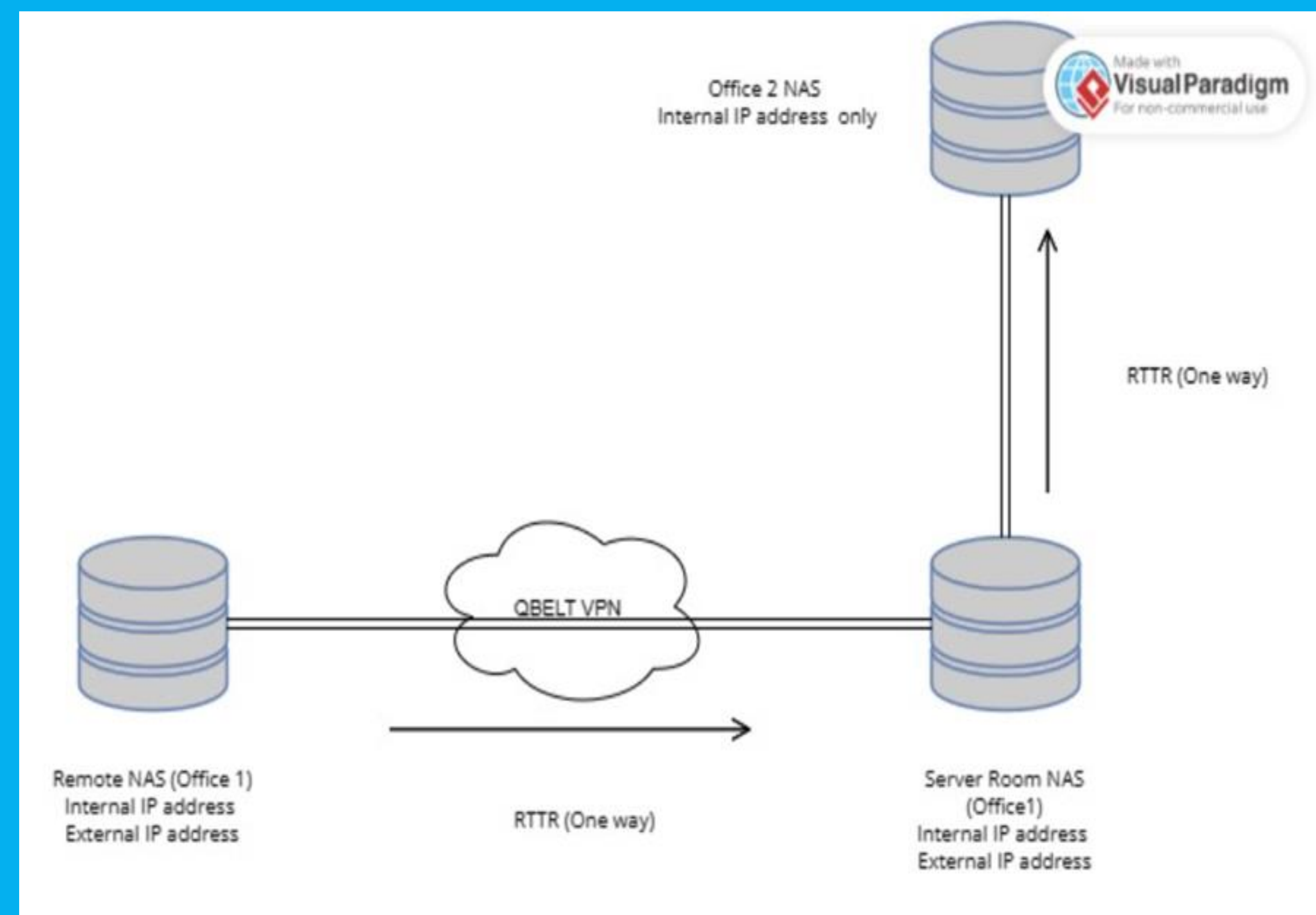
- To increase productivity by creating a NAS storage solution which has ease of access for staff.
- Backup data in a way that maintains its integrity and reduces risk of loss/damage.
- Create a virtual replication which can be used for testing and design experimentation.
- Carry out cyber security analysis testing the security of the NAS and Network.
- Provide recommendations to provide security for any cyber risks identified.
- Provide recommendations on how to improve NAS system and analysis of impact.

3. Design & Implementation

The NAS devices were configured using the QTS operating system, which provided an easy-to-use web-based interface. The first step in the configuration was to set up the RAID configuration.

The NAS devices were connected to two separate networks, and each device was assigned a static IP address. This configuration was crucial in ensuring that the devices could communicate with each other and with the devices on their respective networks.

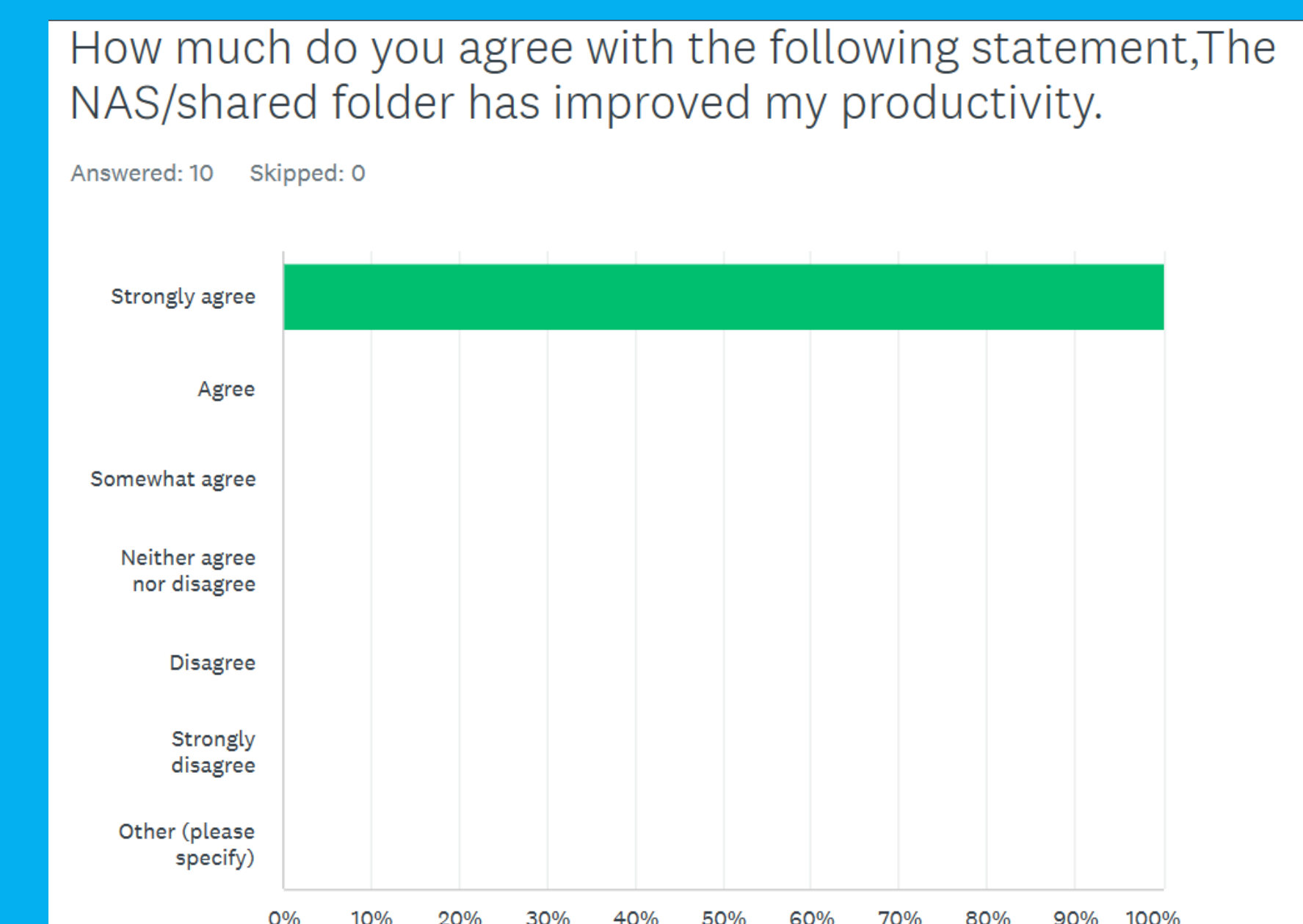
To ensure that the NAS devices were accessible to the users, the author configured the shared folder settings. The shared folder settings allowed the users to access the data stored in the NAS devices through the network. The author created an SMB share and mapped the folder on each device and set permissions to allow access to specific users to have specific permissions/access. The shared folder settings also allowed the author to ensure data was not accidentally deleted by someone who did not have the relevant permissions to do so.



4. Analysis

Due to the data within the NAS, the author replicated the setup virtually to present findings and to carry out PEN testing. The author carried out PEN testing using Kali Linux tools to test the integrity of the SMB share and to assist in security recommendations.

Questionnaires were sent to staff in order for the author to analyse if the NAS had been successful and improved productivity, which it had.



5. Conclusion

In conclusion, the implementation of a 32TB QNAP NAS solution for two offices required careful planning, configuration, and testing. The hardware and software used were selected based on their scalability, flexibility, and high-performance capabilities. The configuration of the devices involved the setup of the RAID configuration, network settings, and shared folder settings. The network topology used ensured that the devices on each network could communicate with the devices on the other network, and the creation of user accounts and shared folders ensured that only the authorised users could access the data stored in the NAS devices. The implementation of this solution has enabled efficient sharing of data between the two offices, ensured the availability and security of data, and provided a scalable and flexible solution for future growth.

6. References

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