Review 4 for review of other work

<https://corescholar.libraries.wright.edu/infosys_scm/34/>

phone system metioning old PBX

added in the design of

IT Solution

#Describe the proposed IT solution to the problem. Identify the relationship between the problem and the proposed solution.

During the meeting with stakeholders it was proposed, once an assessment was taken place, to replace all Ethernet-connected switches with redundant fiber-connected connections between buildings for the backbone with all endpoints like computers and printers with new category 6 cable. For the core network and each point joining between the buildings the switches would be configured in a stack configuration for redundancy.

Each switch will be replaced with Cisco Catalyst C9300X-48HX 48 port POE switches this will provide enough ports for both cameras and computer printers and also provide adequate power to the cameras and eliminate the need for a separate set of switches for a specific function. Between each building and each IDF and MDF redundant fiber connections configured as EtherChannel ports

For similar devices and groups such as servers, IP-based cameras, shops, guests, IT management and future IP-based phones. Access control lists (ACLs) would be created as well to either permit or deny access to resources such as printers, servers or devices with confidential information.

After the information was gathered for the physical and logical design of the new network it was time to look into prioritizing and routing traffic.

Since B and B Manufacturing had expressed interest in upgrading to an IP-based phone system in the future it was extremely important to incorporate this into the network design. VoIP calls can be prone to jitter, latency, and packet loss issues which lead to bad audio quality, network congestion, missed or jumbled audio, and dropped calls. (United World Telecom, 2021).

When interviewing the stakeholders it was revealed that they had been wanting to upgrade their aging phone system with an IP-based one but due to budgetary reasons only the network will be upgraded at this time.

# Not sure if I should use them – delete if you don’t

Campus LAN and Wireless LAN Solution Design Guide – Cisco

https://www.cisco.com/c/en/us/td/docs/solutions/CVD/Campus/cisco-campus-lan-wlan-design-guide.html

Cisco Datasheet on VOIP

“IP Telephony – Best Practices Part 1” datasheet 1992-2006

https://www.cisco.com/c/dam/en\_us/about/ciscoitatwork/downloads/ciscoitatwork/pdf/IPT\_Best\_Practices\_Transcript\_1.pdf

According to the VLAN Best Practices and Security tips Guide?

https://www.cisco.com/c/en/us/support/docs/smb/routers/cisco-rv-series-small-business-routers/1778-tz-VLAN-Best-Practices-and-Security-Tips-for-Cisco-Business-Routers.html

Dell practice guide

https://infohub.delltechnologies.com/static/media/a6db0ca1-66bd-46bd-a955-8f3604395191.pdf

Cisco reasoning behind 2 tier in our case:

https://www.ciscopress.com/articles/article.asp?p=2202410

or :

https://www.cisco.com/c/en/us/td/docs/solutions/CVD/Campus/cisco-campus-lan-wlan-design-guide.html

Campus design guide:

https://www.cisco.com/c/en/us/solutions/design-zone/networking-design-guides/campus-wired-wireless.html

Best Practice Recommendations for the Catalyst 9300 (not sure if used)

https://www.cisco.com/c/en/us/support/switches/catalyst-9300-series-switches/products-installation-and-configuration-guides-list.html

VOIP jitter stuff mentioned

https://www.unitedworldtelecom.com/blog/voip-qos/

new idea

https://documentation.meraki.com/MR/Wi-Fi\_Basics\_and\_Best\_Practices/What\_is\_Jitter%3F

Stack configuration mentioned (Cisco Business: Glossary of New Terms):

https://www.cisco.com/c/en/us/support/docs/smb/switches/Cisco-Business-Switching/kmgmt-2331-glossary-of-non-bias-language.html

Vlans Cisco 2020 “in other works”

https://www.cisco.com/c/en/us/support/docs/smb/routers/cisco-rv-series-small-business-routers/1778-tz-VLAN-Best-Practices-and-Security-Tips-for-Cisco-Business-Routers.html#some-quick-vocabulary-for-the-newbies

Benefits of a managed switch

https://uniontestprep.com/comptia-a-core-series-exam/blog/network-switches-managed-vs-unmanaged

VOIP Stringent requirements:

<https://www.ciscopress.com/articles/article.asp?p=2181837&seqNum=11>

Table of Contents –delete this when done

A. Proposal Overview X

A.1 Problem Summary X

A.2 IT Solution X

A.3 Implementation Plan X

B. Review of Other Works and

B .1 Relation of Artifacts to Project Development X

Review of work 1 X

Review of work 2 X

Review of work 3 X

Review of work 4 X

C. Project Rationale X

D. Current Project Environment X

E. Methodology X

F. Project Goals, Objectives, and Deliverables X

F1. Goals, Objectives, and Deliverables Table X

F.2 Goals, Objectives, and Deliverables Descriptions X

G. Project Timeline with Milestones X

H. Outcome X

I. References X

Appendix A X

Title of Appendix X

Appendix B X

Title of Appendix X

Appendix C X

Title of Appendix X

Appendix D X

Title of Appendix X

Problem Summary

B and B Manufacturing has seen rapid employment growth and because of this the network has become strained and users have complained about network slowness. Prior to the company’s growth B and B’s network has not seen any changes for over 13 years. When interviewing the stakeholders it was revealed that they had been wanting to upgrade their aging phone system with an IP-based one but due to budgetary reasons only the network will be upgraded at this time.

#Summaries of the problem should include the context in which this problem exists. Summarize what will and will not be included in the project. Provide sufficient background information so that the reader can appreciate the need for a solution and the approach taken in the project.

Implementation Plan

This is how it’s supposed to go down – need to add more on this

(read this for ideas: https://github.com/ashejim/C769/blob/main/resources/examples/BSCIA/example\_task2-bscia-a.pdf

)

One of the dangers of lack of network segmentation is that if a customer or supplier joins the network for a presentation any malicious software or virus that could be present on their computer could inflect the entire company. Since suppler visits were mentioned during phase one It was determined that B&B would benefit greatly by creating VLANs.

In order to determine voice call needs over a network Cisco’s white papers were consulted to better plan for VOIP integration. Voice traffic has stringent QoS requirements. If user PCs and IP phones are on the same VLAN, each tries to use the available bandwidth without considering the other device. To avoid this conflict, it is good practice to use separate VLANs for IP telephony and data traffic. (Cisco/Pearson , 2023)

After the physical design of the network was completed, it was time to design the logical layout. The original network was a flat network meaning it had no IP address security segmentation or Virtual Local Area Networks (VLANs). A VLAN is a logical group of workstations, servers, and network devices \_\_\_ definition from an article hopefully finds how VLANs help with network traffic or speed (Cisco, DATE). Authors note check out the business routers article-

After the current environment is mapped the different manufacturers will be examined and a single manufacturer will be determined. By standardizing on a single manufacturer for network equipment simples the administration and network management overhead.

Outcome

● View Writing the Timeline and Outcomes Sections.

This section describes the anticipated project outcomes and explains how the project's success will be measured once completed. Next, define the expected project outcomes and describe the evaluation framework to be used once the project is completed to assess the project's success and effectiveness.

The new equipment installed in building 2 consists of 5 Cisco 9300 POE switches configured in a stack configuration. Some network switches have the ability to be connected to other switches and operate together as a single unit. These configurations are called stacks. Stacking shows the characteristics and functionality of a single switch, while adding an increased number of ports. Stacks quickly increase the capacity of a network.

This documentation was stored along with IP addresses, VLAN configurations, and passwords was stored in a fireproof safe in the IT department’s office.

objective x.y.z train staff etc (see (MONDAY doc for this idea)

This objective was met when the two-hour traing session with employees was completed.