**1.Business Background**

The business background, as from the feasibility study, involves a newly built, privately funded art gallery. The art gallery, since just establishing itself, needs a small scale network for art gallery functions. The functions the art gallery would want to conduct include website hosting, database management, network security, and VLAN configuration. The people who will be using this network consist of art’s gallery employees, who in themselves consist of the main gallery employees, as well as the warehouse storage employees, an administrations team, and guests of the art gallery network. On average, 10 people would use the network, with an estimated maximum of 30. Because the art gallery’s main function is the physical showcasing of exhibits, the network will simply facilitate this function through the use of a low scale network. Transmission speeds must facilitate an average speed of 100Mbps, and have firewalls in place to secure data transmission.

The studio works with 3 major departments under one network with an inventory and website server. Warehouse in charge of inventory, shipping, and distribution. Marketing properly advertising, selling, and maintaining web presence and Gallery employees who help present, maintain the artwork and customer service.

**Requirements**

* 2 Servers with preferred storage of 8TB+ of storage with restriction on who has access.
* 15Gb of storage within the server for each user and 250GB storage capacity for employee PC.
* Most of the data type will be text and images and no continuous streaming of video or audio to keep transmission speed as high as possible. An estimated 300 Mbps at the end-stations and 100 Mbps for off-site clients
* All wired connections in the network , not included in the public access point, who only have access to internet.
* Using user expectations and industry standards, the LAN is expected to operate at 99.99% uptime and an undiscovered error rate of .001%.
* Data will be managed using Windows 10 as the operating system, and the Art Gallery inventory will be managed by inventory application. Servers will run server applications for management.
* VLAN will be used to separate the 3 major departments and the local access point.

**2.Reasons of why your network design is appropriate to the business scenario**.

The network design sufficiently answers the needs of the art gallery. It comprises of a main gallery BN and a warehouse BN. The BN’s connect to a switch, which routes the BN traffic and server BN. This takes care of the physical needs of two locations. Each location is comprised of different groups, which use different VLAN channels. The network is controlled by packet level firewall access controls. The designated gallery employee VLAN is granted access to the web server and communication to the other employee VLANs; similarly, warehouse VLAN accesses the warehouse server. The administration VLAN can access all servers and all employee VLANs. The guest VLAN is restricted the most, and only has access to packets which access PORT 80 of the web server only. The switches and devices accommodate for data traffic of 100Mbps, and the servers. Our network is simple and straightforward, designed to focus on easily handling a small business with the focus on connecting each employee to their own department and securing each department from each other.

**3.The changes, if any, you made between your final design and submitted intermediary report**

The things we changed from our intermediate report are:

* Upgrading server storage from 1TB per server to 8TB, and
* Non-implementation of an internet cloud simulation similar to the feasibility report
* Non-implementation of an “auction house” application.

**4.Reasons**

The server storage needed to be upgraded to 8TB on each server to accommodate more data. Additionally, the model did not feature access to an internet cloud as depicted in the feasibility report. A planned function of an “auction house” function of the network was not integrated due to time constraint and software complexity. The majority of the difficultly in designing the network came from establishing the ample traffic load amount, and also the ample server storage that would accommodate such traffic in a modern setting.

**5.**

A picture containing text, diagram, map, line

Description automatically generated

**6.**

Yevgeniy Potapov – Network construction/ implementation,

Christopher Lemons – Research , meeting coordinator,

Johnathon Torres – Research, PowerPoint, documentation.

All 3 were part of the network design development and debugging.