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Introduction

1. In the company Neo Jupiter, it is a high technology company that uses many laptops, tv's, and wireless devices on every floor. We concluded that there needed to be access points in every medium and large room on each floor provided. The company also needs to have printers and fax machines connected to the internet to support the workers. The business has a lot of remote workers as well so we concluded that they did not need as many cubicles and offices as a normal building would. This also helped to create space for the large meeting room, the reception area, and the warehouse area. Another assumption that we made was that the employees would be using the company wifi instead of their own data so we would need to have a strong wireless network connection along with the access points that we previously talked about. All around Neo Jupiter needs strong wifi connection for the big rooms they have for meetings and other activities, but as for the employees they did need as much personal office space since many will be working remotely, so they can interchange office space as needed.
2. NETWORK FLOOR PLAN

1st Floor:
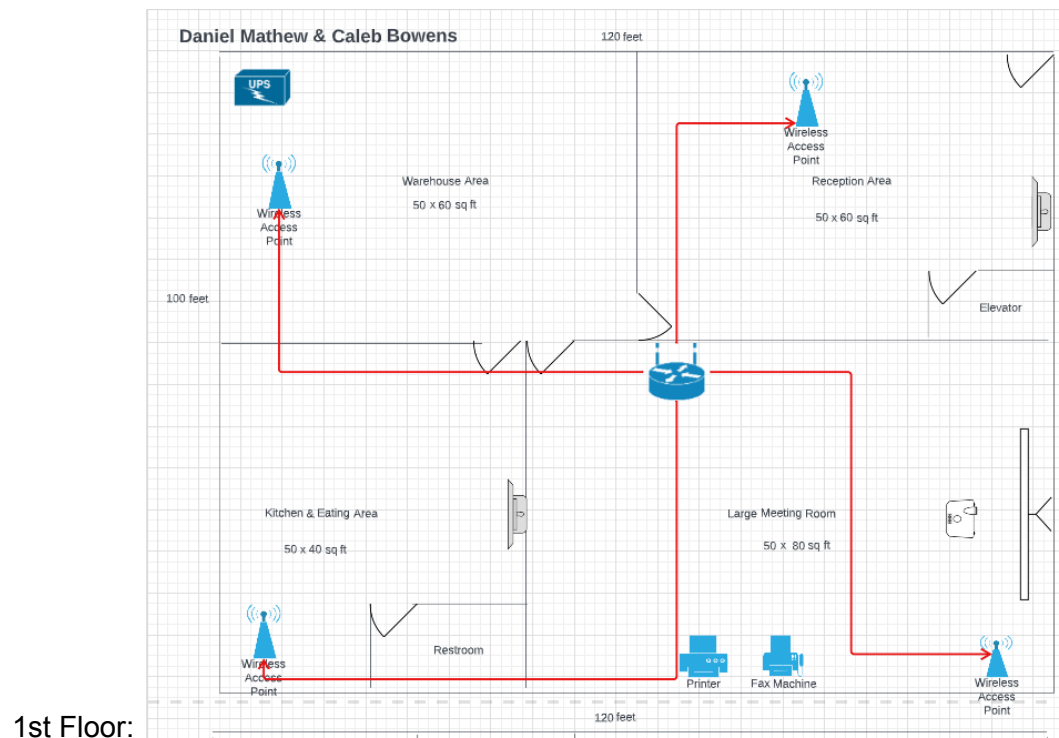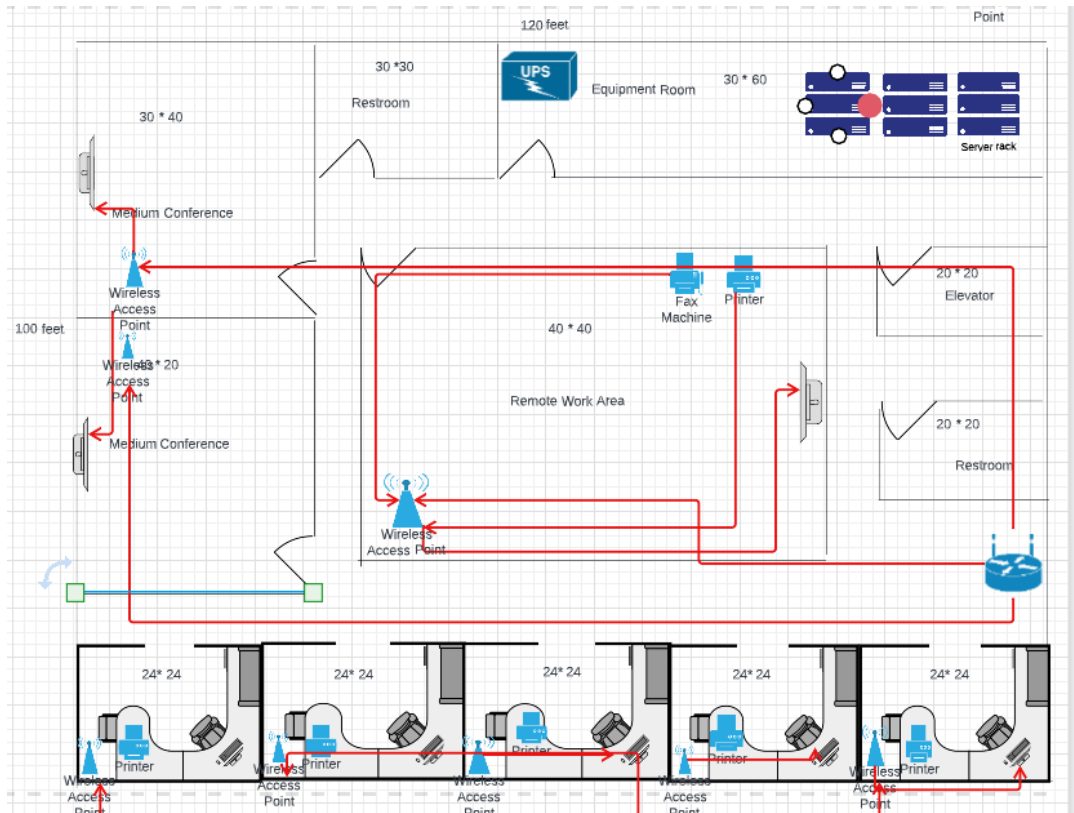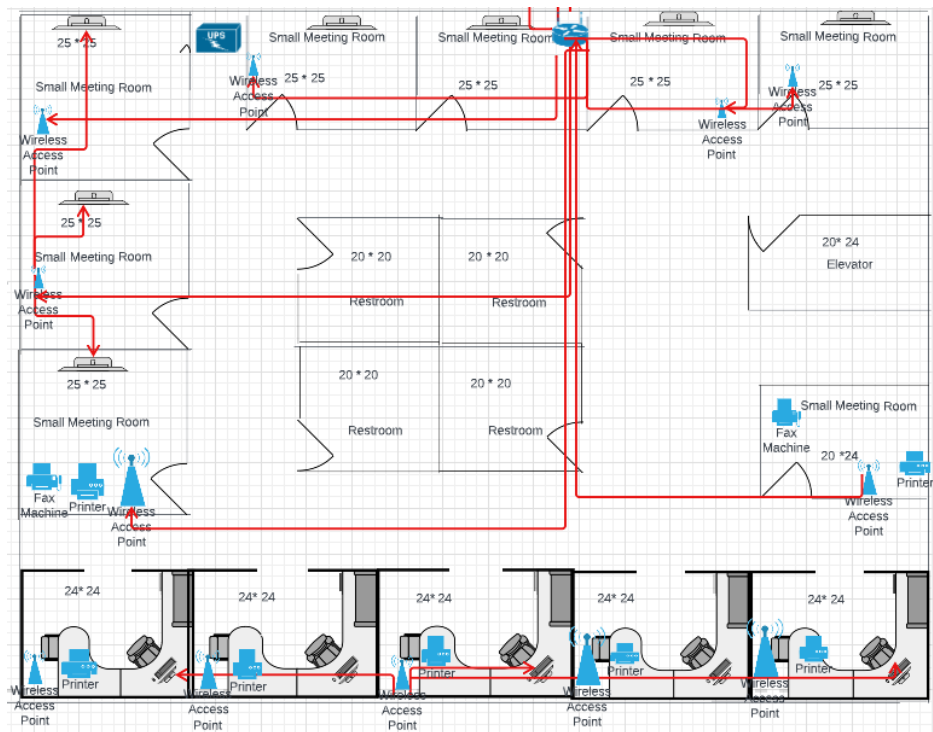
2nd Floor:

3rd Floor:

3.DESIGN NARRATIVE

For our design we chose to have an access point in every room to increase the connectivity of each room. We chose only to have one router for each floor because the access points will be used to strengthen its signal meaning that we only need one. We will also utilize fiber optic cables for maximum internet speed. For our security we will have a firewall to help stop unauthorized access on our network and to help filter what packets should and should not be accessing.We will also add 802.11i security protection as well to help protect the privacy and sensitive information on our clients and their data. We will also utilize vpn's so that hackers can not track our location. As for the standards, we propose since we are using fiber optic cables that it would be in Neo Jupiter's best interest to have a 1000Base-SX standard as it has fast transmission speed and it also has a distance of 550 meters which will be helpful in covering the majority of each floor. We decided to put printers in each of the office rooms for each of the employees in order for them to have easy access at their disposal. We also put printers and fax machines in 2 small meeting rooms on the 3rd floor, the remote work area on the 2nd floor, and in the large meeting room on the 1st floor that way if an employee has important documents they need to print out before the meeting or during the meeting they can also have access to those resources. We decided to put 3 server racks in the equipment room to accommodate the different servers needed for data. Finally we added a UPS on each floor so if their is an issue that there can be a way in which to temporarily fix the issue.

4.NETWORK DIAGRAM
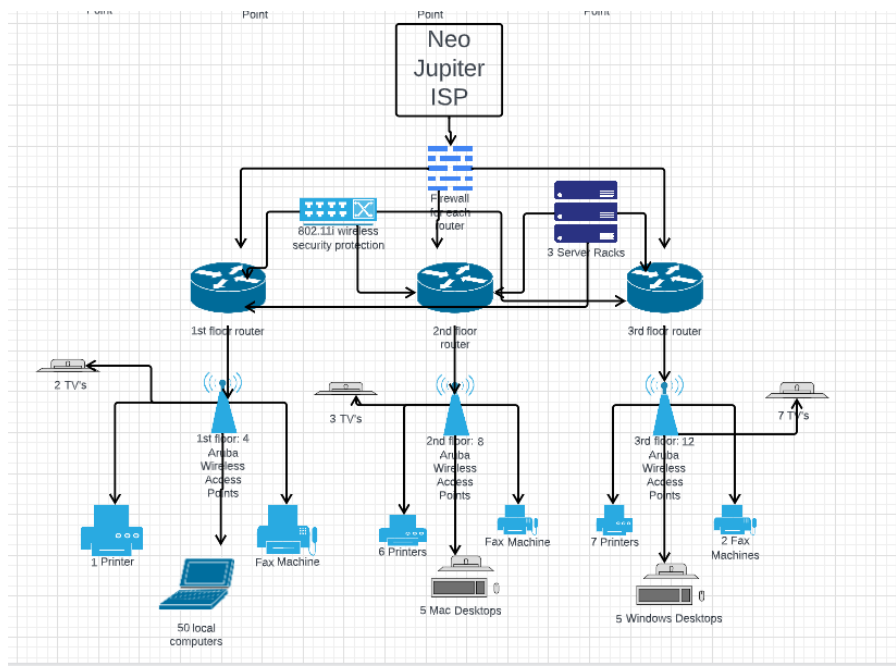
5.PROPOSED PRODUCTS

- **Netgear WAX630PA-100NAS AX600**- we chose to use this because it was designed for medium sized businesses with a fast wifi speed of 6 Gbps throughput. This also has 2.5 Gbps power over the ethernet port. This product also has good built in security with WPA2 & WPA3 and includes a warranty.

- **HP Deskjet 3772**- Main reason this was chosen is because it was very cost effective. It allows for wireless printing, copying as well as scanning. Can be setup through a smartphone through the wifi.
- **Brother FAX2940 High-Speed Laser**-It is very efficient with fax transmissions and is a good quality fax machine in terms of speed and efficiency. Has security with the use of passwords. This also has a 30 page capacity.
- **TP - Link AX3000 4-** It is a router that uses wifi 6 capabilities for efficient speeds as requested by Neo Jupiter. This router also has 3 Gbps speed which is helpful for faster wifi. This router is also very helpful as it can support many different types of wireless devices.
- **APC Back-UPS Pro 1500 Battery**- Offers reliable battery power for when the power comes out. This product allows for 120 volt battery for backups in case the power does go out. It also allows for 865-watts of power which with all the technology and power we that will be used, it will be beneficial in a strong backup. Has very efficient charging and automatically self tests. Also saved energy by limiting power used by other products.
- **Thinkserver TD350 70DG000BUX**- This product offers 90 TB of storage which is great for the amount of data that will be stored for Neo Jupiter. It also has modern hardware allowing for it to be monitored, it gives alerts if any updates need to be made or a battery needs to be changed, and it will run diagnostics on itself in order to keep everything up to date. These features will be beneficial for the company and maintain the proper running of the network.
- **Dell Networking Cable, OM4 LC/LC**- Gives the link for fiber networking devices. This enables high speed and uses long distance connectivity, it is using fiber optic technology which gives the fastest speeds. Has LC connector on both ends with a 5 meter length.
- **VIZIO - 40" Class D Series-** This tv was cost efficient as their are many tv's that are needed. This tv uses an IPv4 network as its WiFi and can be mounted onto the wall so it takes little space. Also comes with 2.9 watt speakers for efficiency during meetings with remote employees.
- **Dell Latitude 3420 Business Laptop-** This product is also cost efficient with decent storage. Has simple resources such as a camera and microphone. It uses a 3 cell 41 Wh battery and uses a 65 W Ac adapter to charge.This also allows for USB ports and HDMI port access. It has plenty of memory providing 8 GB worth of memory so employees can store a good amount of data and documents. It also has a hard drive of 256 GB for even more space and is good for back ups as well.
- **Aruba 2930F 12 G POE+ Layer**- This product is a switch for layer 3, it is very simple and efficient to use. This product also has the resources of static and RIP routing, and uses the WiFi speed of IPv6 for max efficiency for the company. It also has a 740 W of PoE which will be very helpful to support each of the access points placed on each floor.
- **Aruba Networks Instant IAP- 225 IEE 802.11ac 1.27 Gbps**- For reliability and stability of faster speeds as well as strong sources the aruba was an efficient choice. It is cost effective and uses 802.11 wireless protection. It also has a high grade wireless Lan.

6. COST SUMMARY

Cost Summary	quantity	vendor/product name	per unit cost	Total cost
wireless access po	23	Netgear WAX630PA-100NAS AX600	459.99	10579.8
Printer	14	HP Deskjet 3772	98.99	1385.86
Fax	4	Brother FAX2940 High-Speed Laser	370.74	1482.96
Router	3	TP - Link AX3000 4	139.99	419.97
UPS Device	3	APC Back-UPS Pro 1500 Battery	309.99	929.97
server rack	3	Thinkserver TD350 70DG000BUX	3,175.45	9526.35
fiber optics cabling	29	Dell Networking Cable, OM4 LC/LC	164.42	4768.18
tv	12	VIZIO - 40" Class D Series	199.99	2399.88
laptops	30	Dell Latitude 3420 Buisiness Laptop	869	26070
Switch	1	Aruba 2930F 12 G POE+ Layer	2957.8	2957.8
802.11	1	Aruba Networks Instant IAP- 225 IEE 802.11ac 1.27 Gbps	59.9	59.9
			TOTAL COST	60580.6