

MEMO

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Subject: Proposal for Computer Network and Equipment Setup with Floor Plan

The floorplan provided has the equipment I planned on adding based on your requirements. In the waiting room, there is a multifunctional laser printer that is wired directly to the server room for ethernet connection. An iPad Pro Max with a magic keyboard is added in the waiting room. In Office #1, there is a basic laptop that gives great performance to get office work done. I also included a monitor for extended display, mouse, keyboard, and docking station to add more functionality to the laptop. In Office #2, there is a powerful gaming laptop that can handle intensive gaming and 4k video editing. I also provided an ultrawide monitor for extended display, to enhance gaming experience and video editing easier. A gaming mouse and keyboard are also provided in the setup. Both laptops and the iPad are connected to one of the WIFI nodes, located in office #1. In the broadcast room, there is a 60-inch TV with stunning displays along with an Amazon Fire Stick to access all streaming platforms. The second WIFI node is in the broadcast room, where the Fire Stick is connected as well as where people can connect their devices while in the broadcast room. The nodes have a really wide range of coverage, so the WIFI connectivity is not a problem. Every office pod has the same high-end desktop that will greatly handle heavy office workloads. Each of them also provides a keyboard, mouse and a monitor with an appropriate size. Each desktop is connected directly to a keystone jack that goes all the way back to the server room to provide fast and reliable internet connection to high volume workloads. In the server room is where a mini rack is wall mounted. Inside the mini rack is the router, switch and the main WIFI node, with both connected directly to the router. Everything is connected to the UPS Battery Back Up, so in case of outages, network devices will continue to operate. A patch panel is also mounted on the mini rack, where all cables from each office pod and the printer are connected to. The patch panel helps the cables look more organized since each port is labelled to make it easier to recognize each cable. Each port on the patch panel is connected to the switch. With powerful internet connection and devices, this plan will cost. \$15,194.38.

OFFICE PODS COMPUTERS

Part Type	Part Name	Price	Reference
Mouse and Keyboard	Logitech MK850 Performance Wireless Keyboard and Mouse Combo	\$119.99	https://a.co/d/5OLQ9Mj
Monitor	Samsung 24-inch Flat Screen IPS Monitor (LS24C330GANXZA)	\$199.99	https://a.co/d/1wDTWyK
Desktop PC	HP Envy Desktop TE01-5009 PC	\$1499.99	https://tinyurl.com/5wc mhfmc

I chose HP Envy Desktop TE01-5009 PC as the desktop PC for all ten office pods for its powerful specifications for handling office work. This PC runs on Windows 11 and has Intel® Core™ i7 14700 (14th Generation) as its CPU, with a total of 20 cores and 28 threads that has a speed up to 5.4 GHz, allowing this PC to handle multiple tasks all at once at a high speed. It also has 32 GB of RAM to run all apps and software smoothly. In addition, the 1 TB SSD provides a lot of storage space to store big files and load the computer's data faster, which is ideal for handling heavy office workloads. Each pod also comes with a Samsung 24-inch Monitor that has a fast refresh rate with 100Hz and has the Eye-Saver Mode feature for better eye comfort and clear visuals, which is ideal for long office work. The Logitech MK850 wireless mouse and full-size keyboard are also provided which are the best for typing comfortably for hours with its provided wrist rest, as well as the mouse's hyper-fast scroll wheel to make it easier to navigate through documents and web pages. The total cost of all ten desktops, monitors, mice and keyboards is \$18,199.7.

WAITING ROOM COMPUTER AND PRINTER

Part Type	Part Name	Price	Reference
Tablet	Apple 13" iPad Pro	\$2629	https://tinyurl.com/y86dc7j9
Monitor	Samsung 24-inch Flat Screen IPS Monitor (LS24C330GANXZA)	\$199.99	apple.com/ca/shop/product/MWR53LL/A
Printer	HP LaserJet Pro MFP 4101fdn Printer with Fax	\$539	https://tinyurl.com/2jseh83j

For the waiting room, I chose the 13-inch iPad Pro paired with the Apple Magic Keyboard. Apple's iPad Pro is their most powerful, latest tablet with its stunning display and great size, making navigating through the tablet easier and smoother. The Apple Magic Keyboard also provides better functionality and comfort to use the tablet. Also, I selected HP LaserJet Pro MFP 4101fdn as the printer to use in the waiting room. This black and white laser printer can do high-volume printing tasks, supporting at least 10 users at a time. It also has a dual-sided scanning, allowing employees to print more in less time. This printer supports wired ethernet connectivity, ensuring easy access to all employees without complications. Their app, HP Smart, makes it easier and simpler to pair any device with the printer.

To use this printer on your computer:

1. On your computer, visit HP Smart website to pair your computer using the code provided by the printer
2. Follow the instructions.
3. Download the printer drivers for HP LaserJet Pro MFP 4101fdn
4. Print a test paper to see if it works!

OFFICE 1 & OFFICE 2 COMPUTERS

Part Type	Part Name	Price	Reference
Laptop	Dell XPS 15	\$1,349.99	https://tinyurl.com/5u5axv6t
Port Replicator	Lemorele 11 in 1 USB C Laptop Docking Station Dual Monitor Hub Adapter	\$55.99	https://a.co/d/hoNaswH
Mouse and Keyboard	Logitech MK850 Performance Wireless Keyboard and Mouse Combo	\$119.99	https://a.co/d/4U7p7x5
Monitor	34-inch LG UltraWide Curved Monitor	\$649.99	https://a.co/d/41BIHjn
Laptop	MSI Titan 18	\$6,299.99	https://tinyurl.com/3p7jy548
Mouse and Keyboard	Logitech G502 X Lightspeed Wireless Gaming Mouse and G915 TKL Mechanical Gaming Keyboard	\$349.96	https://a.co/d/86fxYml
Monitor	KOORUI 34-inch Ultrawide Gaming Monitor	\$399.99	https://a.co/d/aWS9RLc

In Office #1, I selected Dell XPS 15 as the laptop. This Windows 11 laptop has a 13th Generation Intel® Core™ i7-13620H Processor with a speed up to 4.9 GHz that can run multiple tasks at a high speed. It has 16GB of RAM with DDR5 which is the latest high-speed technology for double data rate which doubles the speed of processing data. It also has plenty of storage with 512 GB of SSD to load apps and software faster. I also included a docking station, and I selected Lemorele 11-in-1 USB-C Laptop Docking Station for its Gigabit Ethernet port, USB ports to connect the Logitech MK850 wireless keyboard and mouse I also provided, as well as HDMI ports to connect to the 34-inch LG UltraWide Curved Monitor for extended display. This increases the functionality of this basic laptop setup to get office work done efficiently and comfortably.

The Office #2 includes the MSI Titan 18 HX A14X that has the best specifications for intensive gaming and 4K video editing. With Intel Core i9 14900HX, it gives an excellent performance with speeds up to 5.8 GHz. Along with the NVIDIA GeForce RTX 4090 GPU, this laptop gives stunning graphics, making games look lifelike and enhance video editing. This laptop provides 128 GB of RAM which allows you to run multiple heavy tasks, like editing large video files or high-demand games. The 4 TB storage of SSD can handle large video projects and load many games quickly. To enhance gameplay experience and video editing, I provided KOORUI 34-inch Ultrawide Gaming monitor for extended display that is great for video editing because of its ultra-wide screen, making it easier to see more of your video project when editing. This monitor also ensures color accuracy, which is essential for video editing and enhances adventurous gameplay. I have also added the Logitech G502 X Lightspeed Wireless gaming mouse. It is perfect for gaming — it is fast, accurate, and fully customizable. There are extra buttons to give you smooth control during your game, as well as the speed of your cursor. I also paired the Logitech mouse with the Logitech G915 TKL Mechanical Keyboard with Tactile switches. They are very quiet keys and provide comfort for long gaming sessions.

SERVER ROOM ASSETS

Part Type	Part Name	Price	Reference
Ethernet Router	TP-Link Tri-Band BE9300 WIFI 7 Router (Archer BE550)	\$299.99	https://a.co/d/5bXv0VU
WIFI Mesh System	TP-Link Deco AXE5400 Tri-Band WIFI 6E Mesh System (Deco XE75)	\$399.99	https://a.co/d/0QWoBHj
Network Switch	NETGEAR 24-Port Gigabit Ethernet Unmanaged Switch (GS324)	\$132.99	https://a.co/d/88sW6YS
UPS Battery Backup System	APC 1500VA UPS Battery Backup & Surge Protector, APC UPS Back-UPS Pro (BX1500M)	\$349.99	https://a.co/d/iKtdlg0
Mini-Rack	Tecmojo12U Open Frame Network Rack	\$150.21	https://a.co/d/bV8wh4f
Patch Panel	iwillink Patch Panel 24 Port	\$59.99	https://a.co/d/dCIsToW

I picked the TP-Link Tri-Band BE9300 WIFI 7 (Archer BE550) router and TP-Link Deco AXE5400 (Deco XE75) for the Wi-Fi mesh system in the server room for their fast and reliable features. The Archer BE550 router has one 25G WAN port and four 25G LAN ports. These ports provide higher speeds than traditional Gigabit Ethernet ports, giving 25 gigabits per second, enabling it to handle multiple high-bandwidth devices without interruptions. The Deco XE75 is a tri-band Wi-Fi mesh system that can provide all devices on the whole floor a strong, fast connection. Use the Deco app to help you set it up easily! Both products also have advanced security through TP-Link HomeShield that provides protection from potential threats.

How to set up the network using the subnet of 192.168.33.XX:

1. Go to Control Panel
2. Go to Network and Internet
3. Go to Network Connections
4. Select your ethernet
5. Select Internet Protocol Version 4 (TCP/IPv4)
6. Click on Properties
7. In the IP Address box, type "192.168.33.X". Replace the "X" with a number between 2-254. Ensure that the number you are putting has not been assigned to a device already.
8. Put "255.255.255.0" as your subnet mask
9. Put the router's IP address as your default gateway.

Steps to setting up the wireless network:

1. Open a web browser and type in the router's IP address
2. Log in with the username and password provided by the router
3. Under the Wireless section, set your SSID to something simple that DOES NOT include any sensitive information
4. Set the security type to WPA3 as it is the latest security protocol that will keep your network safe. It provides better protection against hackers than WPA2 by using stronger encryption methods. WPA3 also makes the passwords hard to guess, even weak ones!
5. Enter a strong password for the Wi-Fi
6. Turn off and on the ethernet and connect your devices using the new SSID and password

BOARDROOM ASSETS

Part Type	Part Name	Price	Reference
TV	Samsung 60" 4K UHD HDR LED Tizen OS Smart TV (UN60DU7100FXZC) - 2024	\$763.74	https://tinyurl.com/4vvee4af
Streaming	Amazon Fire TV Stick	\$69.99	https://a.co/d/7kteKh3

For the broadcast room, I selected the Samsung 60" 4K UHD HDR LED Smart TV (UN60DU6900FXZC), which provides stunning visual quality. It has a 4K Ultra HD resolution and 60Hz refresh rate ensuring accurate, vibrant images and smooth visuals. It also includes 4K upscaling, which makes all visuals look sharper and more detailed, it brings lower-resolution content to almost 4K quality. This TV also runs on an operating system called Tizen, that offers a user-friendly interface and provides a wide range of entertainment options. I also included the Amazon Fire Stick to provide access to streaming platforms and apps; like Netflix, Disney+, etc. This is a perfect combination for streaming high-quality content in the broadcast room.

NETWORKING AND OTHER

Part Type	Part Name	Price	Reference
Keystone Wall Plate	Cosfox 1 Port Keystone Wall Plate	\$39.44	https://a.co/d/81guwJc
Ethernet Cable	celertec CAT6A Ethernet Cable	\$427.46	https://a.co/d/cxvRCUM
Fish Tape	Akuoly Fish Tape 49FT Wire Fishing Tools Cable Pulling Wire	\$22.99	https://a.co/d/eM4kpAG
Keystone Jack	iwillink 10Gbps RJ45 Cat6A Keystone Jack	\$133.75	https://a.co/d/4LBObKO
RJ45 Connectors	ITBEBE 120-Pack RJ45 Cat6a Pass Through Connectors	\$24.99	https://a.co/d/3mMmPzu
Cat8 cables	UVOOI Cat8 Ethernet Cable 3FT 2-Pack	\$15.99	https://a.co/d/q0rkTxv

I picked Cat6a for both drop cables and patch cables because it provides an excellent speed performance that can handle speeds up to 10 Gbps and support multiple devices. Cat6a also has better shielding than the old versions, which reduces interruptions and provides more stable connection. As technology advances, Cat6a will still be able to support new devices with higher speeds, ideal to upgrade the equipment without needing to change the cabling.

Steps to put in the drop cables and hardware to use to terminate each end of the cables.

1. Measure and cut the Cat6a cables according to the measurements outlined in the floor plan. Repeat this for each of the eleven office pods and the printer.
2. Use a fish tape to fish the cables through the walls from the server room to each office pod and near the printer.
3. Drill holes where the keystone wall plates will be placed

4. Strip the ends of each cable to expose the inner wires. Wire them correctly according to T568A or T568B wiring standard
5. Insert the wires into the keystone jack based on the wiring standard.
6. Use a cable crimper to secure the wires
7. Snap each jack into the keystone wall plates.
8. Mount each wall plate onto the wall
9. In the server room, strip the ends and wire them according to the chosen standard again.
10. This time, insert RJ45 connectors on these ends
11. Use a cable crimper to secure the wires
12. Plug each of the cables into the ports on the patch panel. Label each port clearly to keep it manageable, organized and easy to recognize each cable.
13. To connect each port of the patch panel to the switch, create more Cat6a cables with RJ45 connectors on both ends. Make sure these cables are of appropriate length to make it neat and organized.
14. Since the Ethernet router has 25G ports, use Cat8 cables to connect the router to the ISP modem, switch, and Wi-Fi mesh system located in the server room. Cat8 cables can support speeds up to 40 Gbps, which are better than Cat6a. This ensures better performance from the ISP.
15. Use a network cable tester to ensure that all cables are functioning properly.

Floor Plan

