



## **SECR1213 NETWORK COMMUNICATION**

**20242025 – SEMESTER 1**

**PHASE 3**

**Floor Plan Design**

**FACULTY OF MJIT**

**Group Name: Eleven-nine**

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Muntasir Rahaman Sirkhazi	A23MJ0013
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## **- LIST OF DEVICES AND QUANTITIES**

### **1) Routers:**

- Quantity: 1
- Brands: Cisco and Huawei
- Purpose: Both ensure steady internet for users and scalability for growing academic institutions and connect computers and other devices to the Internet

### **2) Core Switches:**

- Quantity: 1
- Brands: Cisco Catalyst 9300 Series
- Purpose: Connects to all of your switches and guides the traffic. Also it ensures high performance switching at the network core.

### **3) Access Switches:**

- Quantity: 4
- Brands: Cisco Catalyst 2960 X Series
- Purpose: Connects the users with their devices in labs.

### **4) Wireless Access Points:**

- Quantity: 6
- Brands: Cisco Aironet 2802i
- Purpose: It provides WiFi 6 coverage in labs and common areas “Relaxing Rooms”.

### **5) Patch Panels:**

- Quantity: 4
- Brands: 24-Port Cat6 Patch Panel
- Purpose: It allows you to manage ports and organize cables

## 6) Ethernet Cable:

- Quantity: 150
- Brands: Cat6 Ethernet Cables
- Purpose: It provides internet connection to devices through a wire, which ensures a high internet connectivity with less delay.

## 7) End-User Devices:

- Quantity: 120
- Brands: Dell Optiplex 7080 Desktops
- Purpose: It allows users to interact with the system. It also ensures good performance experience and cost effectiveness.

## - REFLECTION ON PRICING AND DEVICE CHOICES

### 1) Are You Surprised by the Prices?

Yes, the prices for networking devices are somehow high. However, this is due to **high level and reliable** “efficient” technology used.

### 2) Have you ever considered cost as a factor for choosing networking devices?

For sure, the cost factor is an important consideration when buying electronic devices especially in large institutes such as universities. While premium brands like Cisco are costly, their performance, and dependability, make the investment worthwhile, especially for academic settings.

### 3) What are the major differences between the same devices from different brands? For example, Cisco and Huawei Routers.

Major differences between the same devices from different brands include design, performance, features, compatibility, software ecosystem, durability, and price.

## - SUMMARY

Device Types	Model / brand	quantity	Purpose
1. Router	Cisco ISR 4331	1	Access and manage router traffic through- out different networks
2. Core Switch	Cisco Catalyst 9300 Series	1	Connects to all of your switches and guids traffic between them
3. Access Switches	Cisco Catalyst 2960-X Series	4	It connects devices to the network
4. Wireless Access Points	Cisco Aironet 2802i	6	It is a networking devices that connects wireless devices to wired networks
5. Patch Panels	24-Port Cat6 Patch Panel	4	It allows you to manage ports and organize cables.
6. Ethernet cables	Cat6 Ethernet Cables (1m)	150	It provides internet connections to devices via a wire
7. End- User Devices	Dell OptiPlex 7080 Desktops	120	It allows users to interact with the system.

TASK 3	
ITEM	MARKS
<i>List if devices</i>	
Is enough research done? *Also need references	2
References included; are appropriate and reputable	1
Does LAN devices chosen accomplish needs/requirements of FC?	2
Characteristics of LAN Devices chosen is explained/shown clearly	2
<i>Report</i>	
Are you surprised by the prices?	1
Reflect on costs of devices	1
What are the major differences between the same devices from different brands	1
<b>TOTAL</b>	<b>10</b>

Based on the rubric we estimate to get 10 out of 10 marks.

### MEETING MINUTES TASK 3:

DATE	25 NOV 2024 2PM
LOCATION	Student Lounge
AGENDA	Researching LAN Devices
MEETING MC	Muhd Affiq

### ATTENDANCE:

Muhd Affiq Firdaus Bin Saiddi Ali Firdaus	2PM - 8PM
Muntasir Rahman Sirkhazi (A23MJ0013)	2PM - 8PM
MOHAMED G. S. (A23MJ0009)	2PM - 8PM
Maarof Saqr Yousef (A23MJ4006)	2PM - 8PM
Helal, Muhieddin Ibrahim (A23MJ4004)	2PM - 8PM

**MINUTES:**

NO.	ITEM DISCUSSED	IDEAS/SUGGESTION AND PERSON GIVING IT	PERSON IN CHARGE AND DATE
1	Defining the objectives and steps to completing the task	Mohamed and Muntasir suggested we should research the types of LAN devices	Mohamed G.S., Muntasir
2	Software to use	Affiq suggested we use Google Docs as the software as we can work on multiple devices simultaneously	Affiq
3	Types of LAN devices	Maarof Saqr and Helal researched the types of LAN devices that we would need	Saqr, Helal
4	Comparison and justification	Mohamed, Muntasir, Affiq further researched on the available models/brands of each device to choose to obtain the most optimal choice	Mohamed, Muntasir, Affiq
5	Report	The whole group discussed together to answer the questions at the end of the report	All
6	References	The group made sure to note down the name of websites/references we used to be put in the references section	All

## - REFERENCES

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<https://www.cisco.com/c/en/us/solutions/small-business/resource-center/networking/how-does-a-router-work.html>
- [2] “Cisco Catalyst 9300 Series Switches | SecureITStore.com,”  
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- [3] “Product Overview [Cisco Catalyst 2960-X Series Switches],” *Cisco*.  
[https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b\\_c2960x\\_hig\\_chapter\\_01.html](https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b_c2960x_hig_chapter_01.html)
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- [5] 24 Port Patch Panel, Patch Panel to Switch Cable Management | FS Community,” *Knowledge*, 2021.  
<https://community.fs.com/article/cable-management-for-a-small-lan-with-a-24-port-patch-panel.html> (accessed Nov. 25, 2024).
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<https://www.blackbox.co.uk/gb-gb/page/43869/Resources/Technical-Resources/Black-Box-Explains/Copper-Cable/Category-5e-And-6> '
- [7] “Dell OptiPlex 7080 Micro Review,” *PCMAG*.  
<https://www.pcmag.com/reviews/dell-optiplex-7080-micro>