**Network Design Proposal**

**Prepared for:**

**University of Maryland University College**

**Prepared by:**

**Student Name**

1. **Physical Network Design**
2. **Network Topology**

**Business Needs**

In this section, you will assess the business needs of the company. Use the information provided in the scenario to analyze the need for infrastructure or equipment. If you need more information, feel free to ask your instructor or make some assumptions. If you make some assumptions, be sure to list them. This section is not about the actual infrastructure or equipment, but it should discuss the business needs of the company.

*Example*

*ABS Enterprises believes that employees’ health, well-being, and morale have a significant impact on the productivity of the employees and thus the overall results or output of the company. They want to invest in a facility that will provide the most return on investment while still providing a facility that employees will use.*

**Proposed Topology**

Select one or more topologies to use for this design. This section should be used to provide details of the selected infrastructure or equipment. Include the model, manufacturer, features, and cost.

*Example*

*We are proposing the construction of a basketball court at our campus. This can be constructed behind our main building where the current overflow parking lot is located. The court will be a full regulation-size basketball court [1]. The typical measurements of a regulation-size basketball court are as follows:*

|  |  |
| --- | --- |
| ***Area*** | ***Measurements*** |
| *Court length* | *94 ft* |
| *Court width* | *50 ft* |
| *Rim height* | *10 ft* |
| *Restricted arc radius* | *4 ft* |
| *Center circle diameter* | *12 ft* |
| *3-point line distance from the basket* | *23.75 ft* |
| *Key (shaded lane or restricted area) width* | *16 ft* |
| *Free-throw line distance from point on the floor directly below the backboard* | *15 ft* |

*The court will cost approximately $20,000 and will include such features as the company logo, a state-of-the-art lighting system, and a net structure around the court.*

**Justification**

Justify your determination that the selected topologies will meet the business needs. Use the information provided in the scenario to make the appropriate assumptions (make sure to list those assumptions). Be sure to also provide an analysis of the justification for the infrastructure or equipment.

*Example*

*Last month, the Human Resources department conducted a survey asking all current employees which facility they would be more likely to use: basketball court, volleyball court, or tennis court. Based on the survey, 70% of our employees selected basketball, 40% selected a tennis court, and 20% percent chose volleyball court.*

1. **Network Media**

**Business Needs**

Assess the business needs.

**Proposed Network Media (include network wiring diagrams)**

Select one or more network media to use for this design.

**Justification**

Justify your determination that the selected media will meet the business needs.

1. **Network Devices**

**Business Needs**

Assess the business needs.

**Proposed Network Devices**

Select network devices to use to implement the design. Include setup and location information for the devices. Provide a comprehensive list of devices including the quantity of each device needed.

**Justification**

Justify your determination that the selected network devices will meet the business needs.

1. **Network Security Devices**

**Business Needs**

Assess the business needs.

**Proposed Network Security Devices**

Select network security devices to use to secure the network. Include setup and location information for the devices. Provide comprehensive list of devices including the quantity of each device needed.

**Justification**

Justify your determination that the selected network security devices will meet the business needs.

1. **Computer Systems**

**Business Needs**

Assess the business needs.

**Proposed Computer Systems**

Select computer systems (servers) to use to implement the network design. Include setup and location information for the devices. Provide comprehensive list of devices including the quantity of each system needed.

**Justification**

Justify your determination that the selected systems will meet the business needs.

**II. Network Addresses Design**

1. **Subnetting**

**Business Needs**

Assess the business needs.

**Proposed Subnetting (include the calculations)**

List the quantity of subnets needed. For each subnet, provide the IP addressing info (network address, broadcast address, range of available IP addresses) and the systems, devices, or equipment that will be on that network. Also provide the calculations on how those IP addressing information are determined.

**Justification**

Justify your determination that the network address design will meet the business needs(why the design needs to have x number of subnets? What are the implications if they have more or less subnets?)

**III. Network Services Design**

1. **Network Services**

**Business Needs**

Assess the business needs

**Proposed Network Services**

Determine and list the network services needed to implement the design. Provide setup and licensing information (as necessary).

**Justification**

Justify your determination that the network services are needed and will meet the business needs

1. **Network Security Measures**

**Business Needs**

Assess the business needs

**Proposed Network Security Measures**

Outline network security measures needed in the design. This includes training, monitoring, and maintenance procedures. Provide implementation details of these measures.

**Justification**

Justify your determination that the network security measures are needed and will meet the business needs.

**Bibliography**

[1] No Author. (2015) *Basketball Court* [Online] Available: <https://en.wikipedia.org/wiki/Basketball_court>