



UNIVERSITY OF
Baguio

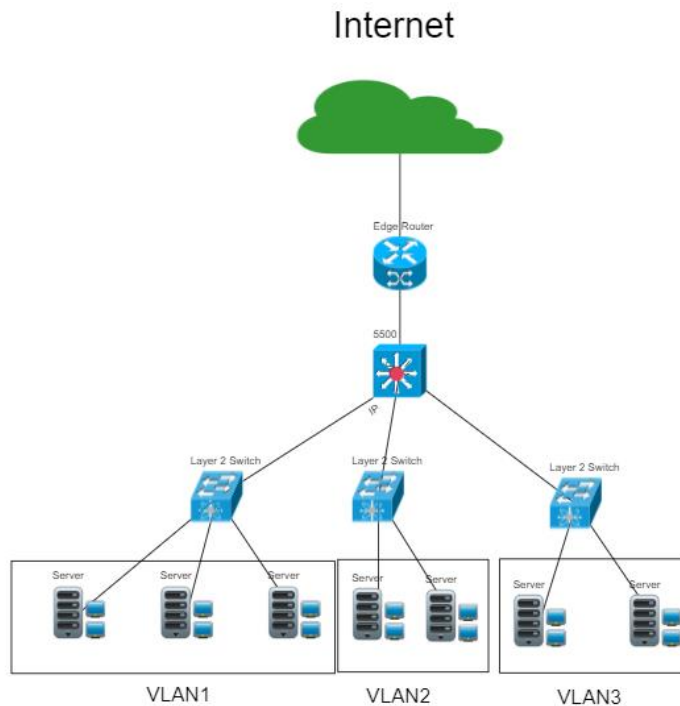
SCHOOL OF INFORMATION AND TECHNOLOGY

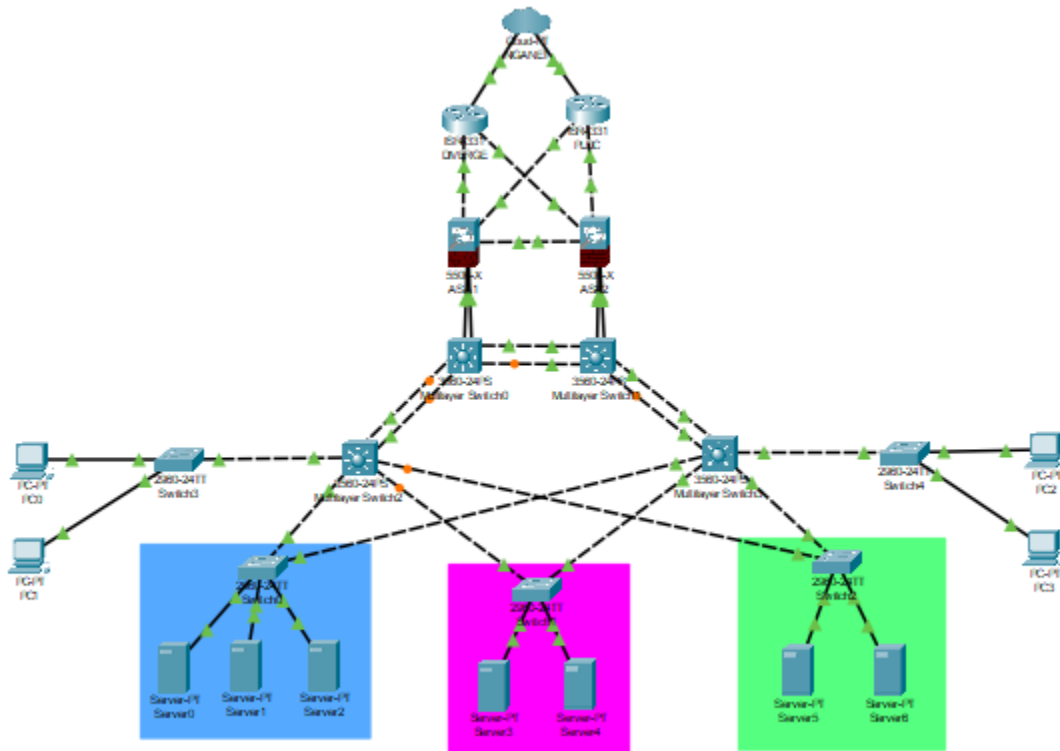
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Section: IDC2	DATE SUBMITTED:	

SYSADM1 – Capacity Management & Planning

Part 2. Network Scalability Analysis

Recall the e-commerce website scenario we discussed earlier. Given the expected surge in traffic, analyze the provided network topology diagram. Identify potential bottlenecks and areas where scalability might be a concern. Propose specific strategies to improve the network's scalability and performance to ensure a seamless user experience during the peak traffic period. Consider factors such as increased user demand, new applications, and security threats.





Network Analysis

The network design identifies key potential issues that could impact its efficiency and security. Bottlenecks are most likely to occur at the access layer, where oversubscription may lead to congestion, or between the distribution and core layers if link capacities are insufficient during peak traffic. Security risks include single points of failure, unauthorized access due to weak access controls, and the absence of advanced protection mechanisms like intrusion detection systems (IDS). Furthermore, the capacity of distribution switches could limit the ability to handle increasing traffic from both end devices and servers as the network grows. These issues highlight the need for robust traffic management, redundancy, and security protocols.

Scalability Planning

To address scalability, the design proposes three key solutions: hardware upgrades, software enhancements, and improved traffic segmentation. Hardware upgrades include adopting stackable distribution switches with modular capacity, enabling expansion as demand increases. This approach supports higher-capacity uplinks to reduce congestion and handle future traffic.

Proposed solution	Drawbacks	Benefits
Hardware Upgrades	High initial cost and downtime for installation.	Supports future growth and higher capacity.

Software Enhancements	Complexity in configuration.	Increases network efficiency and security.
Improved Segmentation	Risk of misconfiguration.	Reduces broadcast domains, improves control.

Criteria	Excellent 10pts	Good 7pts	Needs Improvement 4pts
Network Analysis	Accurately identifies potential bottlenecks, security risks, and capacity limitations.	Identifies key network components and some potential bottlenecks.	Identifies some basic network components but lacks a comprehensive analysis.
Scalability Planning	Proposes multiple relevant solutions and provides detailed explanations, including potential drawbacks and benefits.	Proposes some relevant scalability strategies but lacks detail.	Proposes limited scalability strategies.
Evaluation of Solutions	Proposes comprehensive scalability strategies, including specific recommendations for hardware upgrades, software configurations, and network optimizations.	Provides a basic evaluation of the proposed solutions, but lacks depth.	Does not evaluate the proposed solutions or provides a superficial evaluation.

Proposed Design	Provides a detailed and well-justified design, including network diagrams, configuration details, and implementation plans.	Provides a basic design but lacks specific details and justifications.	Does not provide a clear and detailed design.
Evaluation and Justification	Provides a thorough evaluation of the proposed solutions, considering factors like cost, complexity, and potential impact.	Provides a basic evaluation of the proposed solutions, but lacks depth.	Does not evaluate the proposed solutions or provides a superficial evaluation
Score:			/50