

Lan design worksheet

Design



List the three layers of a typical hierarchical design model : Access, Distribution, Core 2. Describe the characteristics and the main purpose of the Access Layer: Interface with end devices to provide access to the rest of the network. Is to provide a means of connecting devices to the network and controlling which devices are allowed to communicate on the network. 3. Describe the characteristics and the main purpose of the Distribution Layer: Controls the flow of network traffic using policies and delineates broadcast domains by performing routing functions between Plans. . Describe the characteristics and the main purpose of the Core Layer: The high speed backbone of the Networking. Aggregates the traffic from all distribution layer devices and also connect to Internet resources. 5. What Is a Virtual LAN (VLAN)? Allow you to segment the traffic on a switch into separate sub networks. 6. List and briefly describe the Benefits of a Hierarchical Network: Scalability - allows you to replicate design elements as the network grows. Redundancy - increase availability Performance - communication is enhanced Security - improved and easier to manage Manageability - Maintainability - . What Is meant by " Network Diameter" as a Hierarchical Network Design Principle? It is the number of devices that a packet has to cross before it reaches its destination. 8. Define Network device latency: Network device latency is the time spent by a device as it processes a packet or frame. 9. What Is Bandwidth Aggregation and how Is It normally Implemented?

This Is the combining of two or more connections to create a logically singular higher bandwidth connection. Allows multiple Ethernet links to be consolidated. 11. Define redundancy: The employment of multiple network

paths between switches. 12. How and why do modern networks use redundant links between hierarchical network layers? They use either multiple network connections between devices or more devices themselves. This way there is an alternate path through the network if there is a problem with the first path. 3. Describe what is meant by a converged network and some of the issues and difficulties encountered in achieving a converged network: The process of combining voice and video communications on a data network. One issue is management of quality of service and high network costs. 14. List and describe some of the advantages off business moving to a converged outwork: One benefit is Just one network to manage and wiring infrastructure. Also, lower implementation and management costs. 15.

Define Traffic Flow Analysis and comment on why it is important: This is the process of measuring the bandwidth usage on a network and analyzing the data for the purpose of performance tuning, capacity planning, and making hardware improvement decisions. 16. Define User Community Analysis and comment on why it should be a part of your network analysis: This is process of identifying various groupings of users and their impact on network performance. The way users are grouped affects issues related to port density and traffic flow, which can influence the selection of network switches. 7. Comment on the impact of Data Stores and Data Servers Analysis on a network and the two types of network traffic that must be considered: The location of Data Stores and Data Servers Analysis can determine the impact of traffic on the network. The two types of traffic to consider is client/server and server/server traffic. 18. Comment on why it is

important to document the network infrastructure in a topology diagram: Having a topology diagram allows you to visually identify potential election on areas where improvements can have the most impact on performance. 9. Describe the difference between fixed configuration switches, stackable configuration switches, and modular configuration switches: Fixed configuration switches cannot add features or options; modular switches allow installation of different numbers of line cards and stackable switches can be interconnected by cable to each other. 20. What is a "line card"? The line cards contain the ports and fits into the chassis of the switch. 21. What is a switch "backplane"? A group of connectors connected in parallel with each other. . Describe switch "daisy chaining" and its advantages over using line ports for inter-switch connections: They are desirable where fault tolerance and bandwidth availability are critical. Use of a special port for interconnections that is faster than using line ports. 23. Define port density and discuss the advantages of switches with higher port density: Port density is the number of ports available on a single switch. High port densities allow for better use of space and power. 24.

Discuss switch forwarding rate and its relationship to the layers of the archival design model: Forwarding rates define the processing capabilities of a switch by rating how much data the switch can process per second. 25. What is wire speed? Wire speed is the data rate the each port on the switch is capable of attaining. 26. What is link aggregation? Allows up to eight switch ports to be bound together to reduce bottlenecks. 27. What is POE and what is the advantage of this feature?

Allows the switch to deliver power to a device. It allows more flexibility with device placement. 28. What is meant by a " multi-layer" switch? A switch that has OSI Layer 3 Functionality. 9. List and briefly describe Access Layer Switch Features: Port Security VI-NAS Power over Ethernet Link Aggregation Quality of Service 30. List and briefly describe Distribution Layer Switch Features: Layer 3 Support High Forwarding Rate Gigabit Ethernet/10 Gigabit Ethernet Redundant Components Security Policies/Access Control Lists 31.

List and briefly describe Core Layer Switch Features: Layer 3 Support Very High Forwarding Rate Gigabit Ethernet/ 10 Gigabit Ethernet 32. List the seven Cisco switch product lines: Catalyst Express 500 catalyst 2960 catalyst 3560 catalyst 3750 catalyst 4500 totally 4900 catalyst 6500 33. Which series of Cisco switches do not allow management through the Cisco ISO CLIP and do NOT support console access? Catalyst Express 500 34. Which series of Cisco switches support multilayered switching, Calls, and console and auxiliary access to the switch but do not support POE? 560, 3750 35. Which series of Cisco switches are available in different stackable fixed configurations? 3750 platform as well as Dual, hot-swappable internal AC or DC power supplies? 4500 37. Which series of Cisco switches are designed and optimized for server switching y allowing very high forwarding rates and are a specialty access layer switch designed for data center deployments where many servers may exist in close proximity? 4900 38.

Which series of Cisco switches is a modular switch that is optimized for secure, converged voice, video, and data networks, is capable of managing traffic at the distribution and core layers, and is the highest performing Cisco switch, supporting forwarding rates up to 720 KGB/s? 6500 Be sure to do all <https://assignbuster.com/lan-design-worksheet/>

of the Packet Tracer Explorations, beginning with 1. 2. 4, and Labs at the end of the chapter, but these are not required to be turned in for grading.