IP Subnet Design

Activity:

This is a small group activity consisting of an IP subnetting design exercise that includes scenarios that you to determine subnet size based on the stated requirements.

\*\*\*\*\*\*\*\*Show your work on the following blank pages\*\*\*\*\*\*\*\*\*

Questions:

1. The current subnet design uses class C network 192.168.1.0, and the network engineer must choose a subnet mask to meet the state requirements. The design requirements specify that each subnet must support two hosts and to maximize the numbers of subnets available. Which subnet mask meets these requirements?
2. The current subnet design uses class C network 192.168.202.0, and the network engineer must choose a subnet mask to meet the state requirements. The design requirements specify that each subnet must support six hosts and to maximize the numbers of subnets available. Which subnet mask meets these requirements?
3. The current subnet design uses class C network 192.168.182.0, and the network engineer must choose a subnet mask to meet the state requirements. The design requirements specify that each subnet must support 14 hosts and to maximize the numbers of subnets available. Which subnet mask meets these requirements?
4. The current subnet design uses class B network 172.16.0.0, and the network engineer must choose a subnet mask to meet the state requirements. The design requirements specify that each subnet must support 200 hosts and to maximize the numbers of subnets available. Which subnet mask meets these requirements?
5. The current subnet design uses class B network 182.202.0.0, and the network engineer must choose a single subnet mask throughout the network. The design requirements specify that 1000 subnets must be available and have largest number of hosts per subnet. Which subnet mask meets these requirements?
6. The current subnet design uses class C network 202.18.9.0, and the network engineer must choose a subnet mask to meet the stated requirements. Which mask will maximize the number of hosts per subnet but meet the requirement of supporting 10 subnets?
7. The current subnet design uses class A network 88.0.0.0, and the network engineer must choose a single mask to use throughout the network. The design requirements specify that 1000 subnets must be available with the largest subnet needing 200 hosts. Which masks meets the requirements and also maximizes the number of subnets?
8. A subnet design uses class A network 10.0.0.0, and the engineer must choose a single mask to use throughout the network. The design requires 1200 subnets, with the largest subnet needing 300 hosts. Which of the following masks meets the requirements and also maximizes the number of hosts per subnet?
9. The current subnet design uses class B network 172.23.0.0. The design requirements specify 100 subnets with the largest subnet requiring 500 hours. But management has specified that 25% growth in the number of subnets must be maintained. Which masks support these requirements?
10. The current subnet design uses class C network 172.16.0.0 with a CIDR mask of /24. The network engineer has been asked to take the subnet 172.16.254.0/24 and create a VLSM subnet within that subnet. This subnet will be used for point-to-point leased lined connections. What would be the appropriate VLSM subnet mask for this subnet to meet the design requirements?

IP Subnet Design Work:

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