Lab #001

Subnetting Design Challenge: Divide and Conquer

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Learning Objectives: The desired outcome of this lab is to remember/learn how subnetting works, and acquire a working knowledge of variable length subnet masks (vlsm).

Equipment: No equipment is required for this lab, but paper and a calculator would be very helpful.

Notes: The quickest things worth noting were the minimum number of bits we had to give up in order to make sure there were enough hosts. Our starting ip was 206.12.0.0/17. Our 4 companies needed 5000, 1500, 200, and 50 hosts. Our starting points for required subnets thus were /19, /21, /24, and /26, respectively. Given the types of organizations (ISP, University, Store, Small office), we felt that further subnetting wasn't exactly required, with the potential exception of the ISP (We gave it over 8,000 hosts, it only needed 5,000). We figured all of these companies were likely to expand, and needed the extra addressing. In the case of the ISP, we noted in our presentation that a /20 and /22 subnet would be just over 5100 hosts, much closer to the request. The other justification for the extra addressing was a smaller routing table, with just the 4 entries of 206.12.0.0/19, /21, /24, and /26.

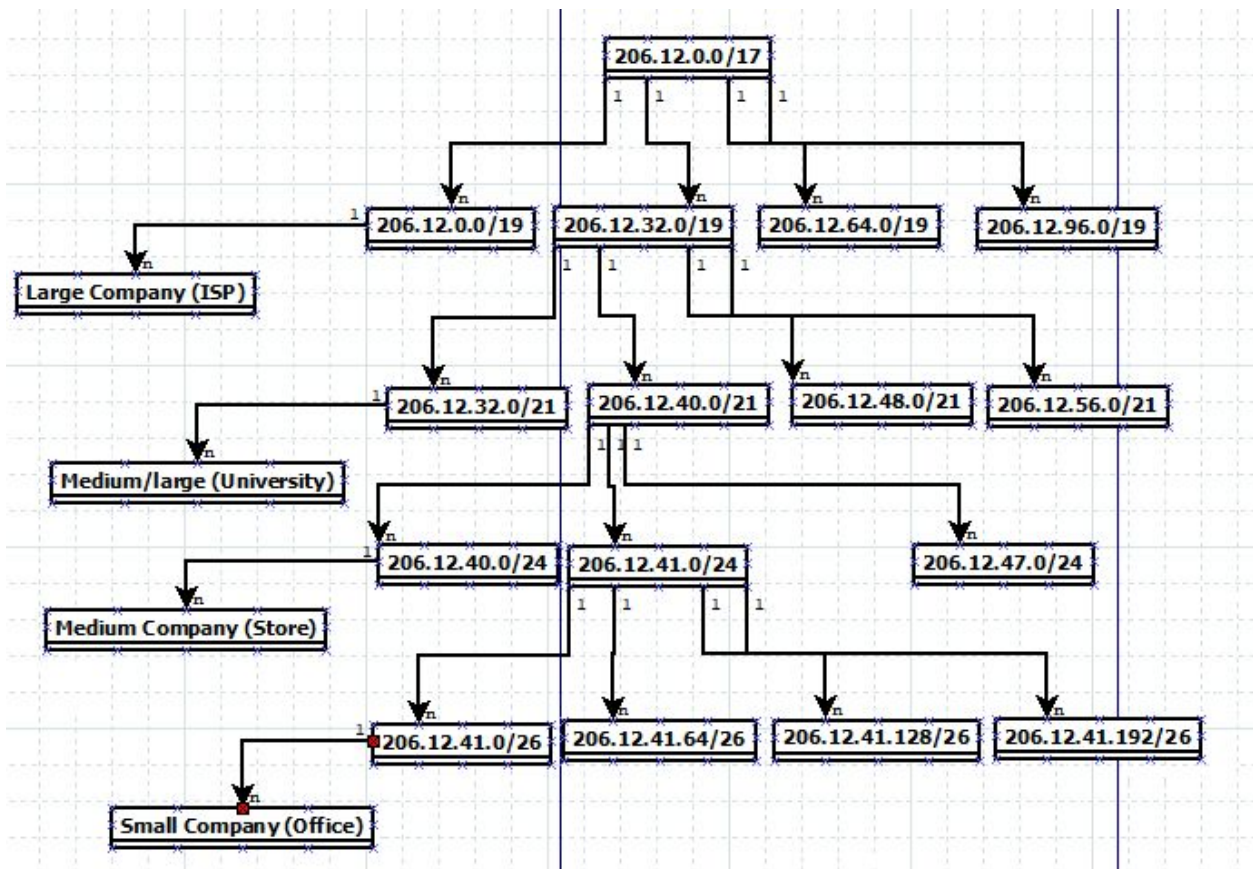**Network Diagram:** Figure 1 below shows our subnetted network

Figure 1

References: N/A

Questions: N/A

Conclusion: VLSM is a simple concept: subnetting a subnet. This lab did a good job of showing how it works. The only thing I would change would be the ISP addressing. A /20 and /22 would better accommodate their current needs, and if I leave the next subnet open, I could just combine them all if they ever expand.