CMST 315 – Sys Admin
Design Challenge

You and the members of your team will design a network for a regional ISP that will provide full Internet access for four clients/companies. You will determine the requirements of each company and then design an optimal addressing scheme to serve them.

Specifications

Full Internet access will be provided for the following four clients/companies:

- Small company (real estate office): 50 nodes
- Medium company (department store): 200 nodes
- Medium-large company (university): 1,500 nodes
- Large company (local ISP): 5,000 nodes

The designed network must increase data performance (decrease router table size) of traditional multiple class C address networks.

Constraints

• ISP (Internet service provider) has been assigned 206.12.0.0/17

• Solution must use VLSM (variable length subnet mask) in the addressing scheme.

Requirements

• Each team will be responsible for the following components of their design solution:
  • A **network diagram** that accurately describes the design solution; it should include the IP addresses for each connecting node, and all subnet IDs.
  • **Summary sheets** for each client (four total); each sheet should include the correct subnet IDs and addresses, range of IP addresses available, all fixed (reserved) addresses, as well as all special addresses.
  • **routing tables** that will be used to summarize full network connectivity for each of the four clients/companies.

• You will maintain individual notes**,** which will contain all of your observations and collected data.

• You will submit a final **Lab Report,** which will contain information gathered from:
  • literature searches
  • work on the Design Challenge
  • methods used to generate the final design solution.

• Team oral presentations to the members of the class.
  • The presentation should justify your design solution.
  • It should use a variety of media.
  • It should be prepared and delivered in a professional manner.
  • It should demonstrate that the solution meets design criteria.