Computer Networks
Season 2024-III
Workshop No. 3 — Subnetting

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Workshop: Subnetting and Network Design Exercise

In this workshop, students are asked to develop a comprehensive network design that includes subnetting requirements for a multi-location enterprise. The task is to specify at least ten distinct locations and detail the network requirements for each location.

Objective

Design a subnetting plan that supports a corporate network with multiple branch offices. Each location should be assigned its own subnet(s) based on the provided network requirements.

Instructions

1. **Network Overview**: Define a common IP address range (e.g., a private Class A, B, or C network) to be used across all locations.
2. **Location Specifications**:
   - Define at least ten different locations (e.g., Headquarters, Branch Office 1, Branch Office 2, Data Center, R&D Center, Sales Office, Support Center, Remote Office, etc.).
   - For each location, specify:
     - The number of users/devices that need to be supported.
     - Required growth capacity (a brief estimate for future expansion).
     - Bandwidth and performance expectations.
     - Any specific security or segmentation requirements.

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Any comment or concern related to this document could be send to Carlos A. Sierra at e-mail: *cavirguezs@udistrital.edu.co*

3. **Subnetting Plan**:
    - Design subnet masks that provide sufficient IP addresses for each location, including room for growth.
    - Ensure that the chosen subnets do not overlap and are properly allocated from the common IP address range.
    - Consider support for routing protocols that may be required for inter-location communication.
4. **Documentation**: Create a detailed document that includes:
    - A table or diagram summarizing each location, its network requirements, and the corresponding subnet design.
    - Explanations for your choices in subnet sizes and IP range allocations.
    - Any assumptions made during planning.

Deliverables

A video detailing the network design specifications. Here a network diagram (can be hand-drawn or created using any diagramming tool) illustrating the connectivity between locations.

Also, a summary table listing each location, required number of hosts, subnet mask, and allocated IP range, shoulb be presented.

Evaluation Criteria

- Clarity and completeness of the network design and requirements.
- Correct application of subnetting principles and accurate IP calculations.
- Logical organization of information and thorough documentation.
- Creativity and feasibility of the design in a real-world scenario.

Submission Deadline: Saturday, 15th February 2025, 18:00

Good luck, and feel free to ask questions during office hours if you need any assistance with this workshop!