

## LAB 1: Network Design

Our office is installing a new local area network to facilitate our expanding enterprise. There are three work center rooms that require twenty five work station connections each. There are also two offices that require four work station connections. All devices should be able to communicate with all of the other devices in the network.

Our objective is to maximize throughput of the connections while keeping costs under control. Diagram and design a network that would suit our needs.

Find some basic cost information and include that with your network map. We can assume that our existing CAT5e wiring and RJ45 connections are sufficient to support our current infrastructure.

For each networking device that is put into production indicate any configuration information the network engineers will need in order to setup the device – this could include VLANs, subnets, trunk ports, etc.

### Objective:

The objective of this lab is for the student to demonstrate an understanding of the differences in networking equipment as well as basic subnetting and network segmentation.

### Required:

1. Create a basic topology diagram indicating the connections between devices and includes all relevant networking information.
2. Find basic cost of networking equipment included in your diagram and include a hardware cost calculation for the project.

You may use whatever program you like to create your network topology – Visio is a simple program to use and is available via DreamSpark.