

Objectives:

Any server administrator should be well-versed with the operating system they manage as well as the hardware it runs on.

The purpose of this project is to give you an in-depth understanding of the following:

- Server hardware requirements
- Current server technologies
- Server virtualization
- Storage considerations
- Disaster recovery options
- Environmental concerns
 - HVAC
 - Humidity
 - Space
 - Power requirements / UPS
 - Physical security
 - Fire detection / suppression / prevention

Project One – Server Primer

Understanding the hardware requirements to run a virtualized Unix/Linux environment

Task One

You work for a hospital that has recently decided that they are going to build a new facility 200 miles north of your current hospital. You are tasked with designing the server and network infrastructure. You will need to follow the TIA569 standard for [racks](#), HVAC, electrical, and all other necessities. The building will be 20,000 sq. ft. Draw out your room on graph paper as professionally as possible. Show the layout you will use for your [racks](#), etc. Specify the necessary HVAC specs for the equipment specified in task two.

Task Two

You need to spec your server infrastructure. You will be supporting 800 users and 350 workstations. The data storage demands are high as doctors and imaging technicians will store digital copies of x-rays, ultrasounds, MRIs, etc. on the servers. You need to provide multiple services such as printing, storage, email, disaster recovery, applications, and [Citrix XenDesktop](#) for 500 workstations. Design your infrastructure and provide detailed data sheets for all servers, SAN equipment, etc. Remember that [virtualization](#) is a requirement. Each server needs to have five nines reliability (99.999) so discuss how you will accomplish this with the server and external equipment, i.e. generator and UPSs. Provide PDFs of all spec sheets and write it up as an official proposal.

Links:

Helpers: [1](#), [2](#), [3](#), [4](#), [5](#), [6](#), [7](#), [8](#), [9](#),