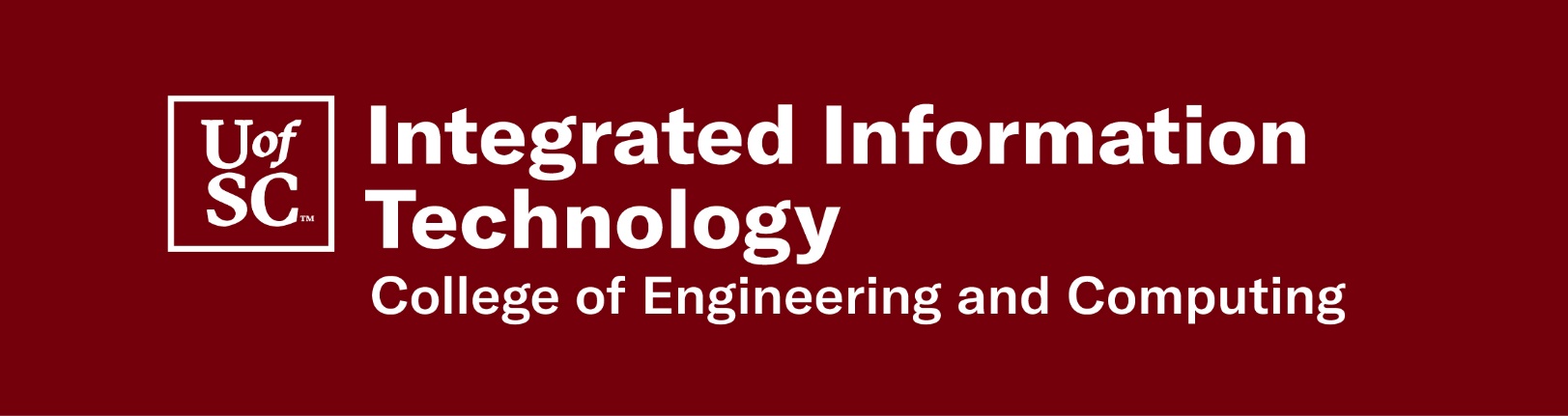
|  |
| --- |
| Sample Network Design  ITEC-245-001 |
| Instructor Gumina |



## Project Scope

## A small business network has to be designed for the XYZ organization. The organization has occasional guest users (Max 10) visiting the office. There are a total of 50 users in the organization. An FTP server is also available for sharing files.

## Employees are segmented into the following work groups:

## Administration: 5 full-time staff Sales: 20 full-time staff Marketing: 25 full-time staff

## Network Requirements

## A \_*192.168.0.0/24*\_ address is available for the network. It must be divided into four subnets for:

## Administration: 5 full-time staff Sales: 20 full-time staff

## Marketing: 25 full-time staff Guests and Wifi up to 10 users

## There is a printer and FAX dedicated to each department.

## Both full-time employees and guests use the local access point for their BYOD devices such as smart phones and laptops.

## There is a printer and FAX dedicated to each department.

## Dedicated workstations must be cabled for the full-time staff as well as the printers, faxes, and the FTP server.

## WiFI should be accommodated throughout the business which resides on two floors of a building.

## Logical Network Diagram

## A close up of a map Description automatically generated

## Addressing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| R1 | G0/0/0 | 192.168.0.89 | 255.255.255.248 | NA |
| G0/1/0 | 192.168.0.81 | 255.255.255.248 | NA |
| G0/1/1 | 192.168.0.33 | 255.255.255.224 | NA |
| G0/1/2 | 192.168.0.1 | 255.255.255.224 | NA |
| G0/1/3 | 192.168.0.65 | 255.255.255.240 | NA |
| S0/2/0 | 64.100.0.4 | 255.255.255.252 | NA |
| Administration | VLAN 1 | 192.168.0.82 | 255.255.255.248 | 192.168.0.81 |
| Sales | VLAN 1 | 192.168.0.34 | 255.255.255.224 | 192.168.0.33 |
| Marketing | VLAN 1 | 192.168.0.2 | 255.255.255.224 | 192.168.0.1 |
| Guest | VLAN 1 | 192.168.0.66 | 255.255.255.240 | 192.168.0.65 |
| FTP | VLAN 1 | 192.168.0.90 | 255.255.255.248 | 192.168.0.89 |
| PC-Admin1 | NIC | 192.168.0.86 | 255.255.255.248 | 192.168.0.81 |
| PC-Sales1 | NIC | 192.168.0.62 | 255.255.255.224 | 192.168.0.33 |
| PC-Marketing1 | NIC | 192.168.0.30 | 255.255.255.224 | 192.168.0.1 |
| PC-Guest1 | NIC | 192.168.0.78 | 255.255.255.240 | 192.168.0.65 |

## Equipment

* Router: Cisco ISR4321/K9 (IRU) processor, with NIM-ES2-4 module providing four switching ports. cisco ISR4321/K9 (1RU) processor with 1687137K/6147K bytes of memory.
* 5 Switches: cisco ISR4321/K9 (1RU) processor with 1687137K/6147K bytes of memory. Processor board ID FLM2041W2HD.
* 51 workstations, Dell OptiPlexc 7060 with Intel 802.3 NIC
* 1 Dell Power Edge T640 Server
* 2 Konica Minolta BizHub 227 printers
* 2 Dell 823 laser printers