

Milestone 1: System Design

Objective:

Given a list of requirements, your team will design a network and choose the software solution(s) that you will use to achieve your objectives.

Requirements

You are the new IT department for Spicy Cluck Co. which is a company that has a chain of fried chicken stores across the United States and Europe. Your team has been tasked with setting up a new regional office in Provo, Utah. The office needs to have the following services and systems:

- An Email server for internal communication
- A DNS Linux server to resolve internal and external requests
- A web server that hosts the official website on the public internet
- A database server for use by the website
- A file server for central file storage
- Active Directory to manage users
- A backup Active Directory
- A Desktop Linux machine to access any critical systems and services
- General workstations for employees to use
- At least 1 Linux machine for general use
- Printer server
- Printer

As a minimum, you should use:

- 2x Windows servers 2022
- 4x Windows 10 or 11
- 1x CentOS-7 or CentOS 8
- 1x Debian Desktop 10.0.0 or later
- 2x Desktop Linux of your choice, at least two different flavors
- 4x Linux Servers

Instructions:

This will just be an initial design and you will be expected to make changes to it throughout the semester as you learn more about these systems.

Step 1: Network Diagram

1. Create a network diagram that meets the above requirements
2. Justify your design decisions and state any assumptions that you have made
3. Include what IP addresses, VLANs, etc. you will use

Step 2: Firewall rules

1. Create a list of firewall rules for the network diagram you have created
2. Make sure to apply the principle of least privilege

Step 3: Other Design Considerations

1. Active Directory, LDAP, DNS, DHCP, Group Policies
2. Back up and Restore solutions
3. Disaster Recovery
4. IDS, IPS & General security
5. Policies, frameworks, and laws that need to be followed
6. Devices that should be a physical workstation vs a VM

This is a list of the users that will be using the system.

1. Jane Smith - CEO
2. John Doe - COO
3. Sarah Lee - CMO
4. Michael Chen - CFO
5. Emily Brown - CTO
6. David Kim - Director of Operations
7. Lisa Jackson - Director of Marketing
8. Tom Johnson - Director of Sales
9. Rachel Nguyen - HR Manager
10. Alex Patel - IT Manager
11. Karen Taylor - Customer Service Manager
12. Kevin Wong - Product Manager
13. Jessica Rodriguez - Content Writer
14. Ryan Lee - Graphic Designer
15. Taylor Adams - Social Media Manager
16. Ben Anderson - Sales Representative
17. Grace Kim - Software Developer
18. Olivia Davis - Data Analyst

- 19. Eric Nguyen - Network Administrator
- 20. Megan Thompson - Administrative Assistant.

Step 4: Presentation

1. Create a 5-10 minute presentation on your design that will be presented to the board of directors. Make sure to include your network diagram, justifications for your decisions, and any assumptions that you have made.

At the end of the semester, you will give another presentation with any updates and improvements you have made.

Submission Requirements

- ☐ 50 Points - Submit your documentation and presentation to Learning Suite before class
- ☐ 50 Points - Presentation