**Final Project:** Server planning, testing, documentation and Communication.

*This is a combination of an individual project with some teamwork required in order to meet all requirements for each server option.*

*You will find the rubric for this assignment at the end of the document.*

*Remember. All documentation will be evaluated for content and professionalism.*

**Required Resources**

* Internet
* Any additional resources as required

**Professional Documentation**

All documentation must be done in a **professional style**. It must include:

1. Title page
2. **Updateable** Table of Contents
3. Document introduction
4. Section introductions or description, each section must be clearly identified
5. Graphics or screenshots MUST include a title with a short description
6. Any direct or copied quotes or graphics MUST be properly credited in a footnote
7. ALL sources MUST be properly cited (APA format) and placed at the end of your document in a bibliography.
8. **NO** embedded, zipped or compressed files. \*\* All scripts must be converted to text before including them in your documentation. \*\*

**\*1 Professional Word Document ONLY.**

**Research and documentation sections** -Please complete all research and question responses in your own words. Research sections not completed in your own words may result in a mark of 0 for the section.

**NOTE:** Please do NOT copy and paste responses from internet, **even with a citation**. I expect each section or response to be in your own words. Be prepared to explain your responses and demonstrate your comprehension during the marking period.

**No marks** will be given for cited or credited information included in document.

**Marking and Assignment Notes:**

* ScreenshotsMUST include user or device identifying information.
* Screenshots MUST be added to your document in the order of creation.
* Documentation must meet Professionalism requirements.
* **Automatic mark of 0 - Assignment not submitted or work not original.**

<http://www.nscc.ca/docs/about-nscc/policies-procedures/policy-studentcodeofconduct.pdf>

<https://www.nscc.ca/docs/about-nscc/policies-procedures/policy-academicintegrity.pdf>

**NOTE: This assignment may require some adaption, research and troubleshooting.**

**Task 1 - Required Documentation**

Documentation is a vital part of any project. Each server deployment must be planned out for any possible issues and the impact to your existing network must be taken into consideration.

Complete your documentation for each server design and implementation for this project.

**Technical Documentation requirements:**

|  |  |
| --- | --- |
| Project Document  **Server Plan must be discussed and approved by majority of team members.** | * Introduction * Team Members * Scope of Project * System Requirements * Research/reference documentation required such as naming convention used, etc * License agreements for NOS, programs, applications as required * Network Design – **Identify Server Node and Server Requirements for each team member.**   *Example: Media Server – M. Dutka*  *Server will …….*   * Security, backup and communication plan * Professionalism * Team discussion and signoff of plan for each node in project |
| Install Log  **To be completed and submitted by each installer to team lead.** | * Date: * Tech/Team: * System Host Name: * Install Details: * Copy write and Licensing details * **Troubleshooting issues and resolutions** (part of change log but please identity as separate section) * **Change Log** (will continue to update) (separate submission) * Professionalism |
| Security / Hardening Log  **To be completed and submitted by installer to team lead.** | * Date: * Tech/Team: * System Name: * Check list of security or hardening options set (include detail) * Troubleshooting issues and resolutions * Professionalism |
| Testing Plan  **Testing Plan must be completed by alternate team member, installer may not complete their own testing. Any failures must be recorded and corrected by installer. Test Plan must then be repeated by Team Member until successful.** | * Date: * Tech Assigned: * System Name: * Testing activity * Benchmark * Acceptable results * No acceptable results * Troubleshooting notes * Completion Information |

**Task 2 Server creation and communication Guidelines**

1. Select any one server build options (as per choice) listed below. Follow the guidelines for each option chosen based on the matching rubric.
2. The selection will take place based on random draw.
3. You can use any Linux Server Distor (as long as it adheres to licensing requirements)
4. **You may use any product, program or applications as long as it meets licensing agreements. Any use of copyrighted material without proper authorization will result in a mark of 0% for the project. Make sure to include any required license agreements in your documentation.**
5. Where requested, project node refers to any servers created by any of your Teammates, it does **not** include servers created from alternate teams.
6. \*\*\*You will require removing your pod from the CCN network in the lab to assist with network communication. Please make sure to return your computer pod back to the CCN network after each working period. You may isolate your pod to the Cisco 2960 switch in the **Student Data Centre Rack 2**.
7. In order to demonstrate the communication portion of this project, your projects must be demoed as a group, but some marks are assigned individually (as per rubrics).
8. **If you are not present during scheduled group marking, you may not receive full marks for your server option.**
9. **\*\* NO Extensions are available for Final Projects.**

Server options

Server Requirements

Each server must meet **all** requirements noted to achieve full marks.

**Server Build Options**

Option 1. (required) at least one team member must select this option.

Linux Network Server with DNS, DHCP and Printing:

* Server installed.
* Must have at least two (2) backup measures activated and documented.
* Must have at least three (3) security measures activated and documented.
* Must have DNS installed and functioning.
* May be used to link the majority of servers for communication.
* Must deploy (auto push, no manual install on alternate node accepted) a printer to at least 1 additional node.
* Additional Communication Requirements
  + Must have DHCP installed and functioning.
  + Must “Host” at least the majority of other Server in DNS
  + Must supply DHCP to at least the majority of other nodes.
  + Must contain at least one reservation that is active.

Option 2.

Linux Email Server

* Server installed.
* Must have at least two (2) backup measures activated and documented.
* Must have at least three (3) security measures activated and documented.
* Email can be created.
* Email can be sent to at least two other nodes.
* Additional Communication Requirements
  + Email is successfully received by two other project nodes
  + Other nodes can respond to email.
  + Email response is received by server.
  + Two other project nodes can send, receive and respond to email with each other

Option 3.

Linux Streaming Media Server

* Media Server installed.
* Must have at least two (2) backup measures activated and documented.
* Must have at least three (3) security measures activated and documented.
* Required authentication functioning.
* Must support at least 3 users (admin, guest and self)
* Each user must have the correct permissions
  + Admin = full
  + Guest = read only (view) access
  + Self = modify / upload access
* Additional Communication Requirements
  + Must be able to stream media content to at least one (1) other project node
  + Must be able to upload for a different project node
  + Must be able to manage content from a project node, you may use one of the nodes used above.

Option 4.

Linux Backup Server

* Backup server is installed.
* Must have at least two (2) backup measures activated and documented.
* Must have at least three (3) security measures activated and documented.
* Backup schedule is created for each backup type
* Must be set to do both an Incremental and a Differential backup type
* Additional Communication Requirements
  + Scheduled backup from at least two other project nodes.
  + Must perform both types of required backups on each node.
  + At least **two days of each type of backups exist** to show scheduling works.

Option 5.

Linux System and Network Monitoring Server (eg. Zabbix, Nagios, etc.. )

* Server installed.
* Must have at least two (2) backup measures activated and documented.
* Must have at least three (3) security measures activated and documented.
* Must monitor and collect metrics from at least 2 system sources and 1 network source.
* Must pull system metrics from the majority of your devices.
* Additional Communication Requirements
  + Must show metric in a graphical format such as dashboard.
  + Must have at least 2 alert configured.

Option 6.

Your Choice of any Linux Server Node (must be approved prior to project acceptance)

* You must submit standards before build is accepted.
* Must function to server intended purpose.
* Must be able to demo in class.
* Must be able to show communication between at least two other project nodes.
* Must have at least two (2) backup measures activated and documented.
* Must have at least three (3) security measures activated and documented.

**CHECKPOINT 1**

Your project document and each server Install Log MUST be completed for your Checkpoint.

Your Server modifications and settings such as hardening, securing, troubleshooting, testing, etc. do not have to be completed for the checkpoint as they can be part of the other logs or change Management Log at final submission.

**Rubrics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Professional Documentation**  **Rubric** | **Unsatisfactory** | **Developing** | **Good** | **Professional** |
| **0** | **1-2** | **3-4** | **5** |
| **Server Planning Document** | No attempt made to document project. | Documentation contains some sections required for project. Document content is somewhat complete and concise. No plan indicated for communication requirement of server. | Documentation contains most sections required for project.  Document content is mostly complete and concise.  **Document includes testing, backup and security** **plan**. | Documentation contains all sections required for project.  Document content is complete and concise.  **Server Plan must be discussed and approved by majority of team members.** |
| **Install Log** | No attempt made to document project. | Documentation contains some sections required for project. Document content is somewhat complete and concise. | Documentation contains most sections required for project.  Document content is mostly complete and concise. Document is missing content for additional communication section. | Documentation contains all sections required for project.  Document content is complete and concise.  **To be completed and submitted by installer.** |
| **Server Security plan** | No attempt made to document project. | Documentation contains some sections required for project. Document content is somewhat complete and concise. No plans created for communication requirement of server. | Documentation contains most sections required for project.  Document content is mostly complete and concise. No testing results for communication requirement of server. | Documentation contains all sections required for project.  Document content is complete and concise.  **Testing Plan must be completed by Team Member. Any failures must be recorded and corrected by installer. Test Plan must then be repeated by Team Member until successful.** |
| **Server Testing plan** | No attempt made to document project. | Documentation contains some sections required for project. Document content is somewhat complete and concise. No plans created for communication requirement of server. | Documentation contains most sections required for project.  Document content is mostly complete and concise. No testing results for communication requirement of server. | Documentation contains all sections required for project.  Document content is complete and concise.  **Testing Plan must be completed by Team Member. Any failures must be recorded and corrected by installer. Test Plan must then be repeated by Team Member until successful.** |
| **Change Management and Troubleshooting Log** | No attempt made to document project. | Documentation contains some sections required for project. Document content is somewhat complete and concise. | Documentation contains most sections required for project.  Document content is mostly complete and concise. Document is missing content for additional communication section. | Documentation contains all sections required for project.  Document content is complete and concise.  **To be completed and submitted by installer.** |
|  |  |  |  | **25** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Server Rubric** | **Unsatisfactory** | **Developing** | **Good** | **Excellent** | **Professional** |
| **0** | **1-2** | **3-6** | **7-9** | **10** |
| **DNS and DHCP Server** | No attempt made to complete server. | Server meets little to no requirements. | Server meets **some** requirements but **cannot** communicate with other servers in the network. | Server meets **most** server requirements including all communication requirements. | Server meets **all** server requirements including all communication requirements. |
| **Email Server** | No attempt made to complete server. | Server meets little to no requirements. | Server meets **some** requirements but **cannot** communicate with other servers in the network. | Server meets **most** server requirements including all communication requirements. | Server meets **all** server requirements including all communication requirements. |
| **Streaming Media Server** | No attempt made to complete server. | Server meets little to no requirements. | Server meets **some** requirements but **cannot** communicate with other servers in the network. | Server meets **most** server requirements including all communication requirements. | Server meets **all** server requirements including all communication requirements. |
| **Backup Server** | No attempt made to complete server. | Server meets little to no requirements. | Server meets **some** requirements but **cannot** communicate with other servers in the network. | Server meets **most** server requirements including all communication requirements. | Server meets **all** server requirements including all communication requirements. |
| **Web Server with CMS and SSL** | No attempt made to complete server. | Server meets little to no requirements. | Server meets **some** requirements but **cannot** communicate with other servers in the network. | Server meets **most** server requirements including all communication requirements. | Server meets **all** server requirements including all communication requirements. |
| **Print Server** | No attempt made to complete server. | Server meets little to no requirements. | Server meets **some** requirements but **cannot** communicate with other servers in the network. | Server meets **most** server requirements including all communication requirements. | Server meets **all** server requirements including all communication requirements. |
| **Your Choice Server** | No attempt made to complete server. | Server meets little to no requirements. | Server meets **some** requirements but **cannot** communicate with other servers in the network. | Server meets **most** server requirements including all communication requirements. | Server meets **all** server requirements including all communication requirements. |