

Linux Administration and Security Assignment (CA1 – Part 2)

Design and Implement a Secured Centos 7 Based Web Application

(Report Due date/time: 9:00 pm, 3rd Feb 2020 (Monday).)

Overview

You are still being attached to ABC Company for your internship program.
Harry, your supervisor, has assigned you to work on a proof of concept (POC) system.

The POC system, if accepted, will be hosted online to provide two main functions:

1. Enable general public to browse through a price list of the products that ACB is selling.
2. Enable authorized ABC staff to upload/update price list content remotely.

System Requirement

The price list system will be based on Apache web server and Centos 7 system(s).
For simplicity and cost effectiveness, the web content will be html based. (ie. No need of any database server, nor application servers)

For the POC system, it is only required to host two or three different sample price list pages* for proof the concept purposes.

Based on your preference and design, you may use multiple (but not more than 3) centos systems (VMs) to implement this POC system.

The last but not the least: Design and implement at least **FIVE** security-related features/measures to enhance the system security. (e.g. Security features that ensure only authorized users can update/upload the price list files)

*You may refer to the following (or any other) sites to create your sample price list pages:

~ <http://templatelab.com/price-list-templates/>
~ <https://templates.office.com/en-us/product-price-list-tm03986989>

Your Tasks

Either individually or in pairs: (can be different from your CA1-part1 grouping arrangement)

1. Write a technical report to clearly describe and explain the functional and security features your system.

You have to submit your report via Blackboard **before** the report due date **and before** your actual demonstration date.

Your report should include at least the following information:

- System overview.
 - Since you are only running the POC system in a simulated mode (ie. Not really hosted online facing internet). You may list down any assumptions for such simulation.
- Network design (Illustrated with a network diagram).
 - Include all the VMs in your simulated setup.
 - Briefly outline their roles and their network settings.
- List of the required services and the detail of their configurations for each of the VMs.
- Operation procedures
 - For the general public to access to the price list.
 - For the authorized users to update/upload the web content.
- List of the security measures you/your team have implemented to enhance the security of the system.
 - Provide the detail explanations for each of the measures.
 - Identify the corresponding risk if such measures are not put in place.
- A demonstration agenda to elaborate the functional and security features you are going to demonstrate.

2. An individual reflection (less than 1 page) regarding this assignment.

Hints on the individual reflection:

You may name a couple of positive and/or negative aspects about this assignment.
You may explain a couple of new things you have learnt from the assignment.

3. A 15-minute technical demonstration

- Demonstration schedule will be confirmed by 31st Jan 2020. (Self-sign-up).
- Focal points of your demonstration –
 - Operational oriented instead of installation/configuration oriented.
 - Not to carry out any further configuration / installation to your setup.
 - Demonstrate and proof the configured features are operating accordingly.
- The demonstration should follow your own demonstration agenda closely.
- During the 15-minute demonstration, your group has to show the key elements* of your POC system. Group members are required to answer technical questions related to the system individually.

key elements refer to the **features that have either **significant functional** or **security** implications.*

Marking Scheme

	Written Report (Group Based)	Marks
1	Report Structure & Completeness <ul style="list-style-type: none"> • Proper report layout. • Cover all the required content as specified. • Provide strong support of Sources of information. 	15%
2	Readability & Correctness <ul style="list-style-type: none"> • Content Clarity. • Using illustrations / diagrams effectively. • Correctness. 	15%
	Individual Reflection (Individual)	
3	Content and Learning Outcome <ul style="list-style-type: none"> • Insights and Understanding • Development of Ideas • Writing Quality 	5%
	Demonstration (Group Based)	
4	Preparation and Presentation Flow (w/ key elements?)	15%
5	Correctness and Completeness (The features demo) Functional features Security features	15% 25%
	Demonstration (Individual)	
6	Q&A	10%
	Total	100%

Deliverables & Due Date

- A written report.
- An individual reflection for each member.

You may use a zip file to enclose all the above and submit to blackboard by

9:00 pm, 3rd Feb 2020 (Monday)

- A 15-minute technical demonstration.
To be conducted during the practical session in week 17/18 (3rd Feb 2020 – 14th Feb 2020).

Take note of the “**SOC – Policy on Late Submission of Assignments**”. 50 marks will be deducted for every working day late submission. Assignments will not be accepted after more than 2 working days after the due date.

~ The End ~