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Computer Systems Administration (IE2060)
2nd Year, Semester II

Individual Assignment

This assignment comprises two distinct parts aimed at providing students with practical experience in two critical aspects of network infrastructure management: Nagios monitoring and DNS caching.

Pre requites: DHCP, DSN, Apache

Assignment Guidelines:

Part 1: Nagios Monitoring Setup with CentOS Server and Fedora Client/s

1. Setup up Nagios (Latest Version), a powerful monitoring system, within a CentOS server-Fedora client architecture. Install and configure Nagios Core on the CentOS server which should be the central monitoring server.
2. Configure the Nagios server by defining host and services for the Fedora client/s to be monitored, configuring host checks to verify the availability of Fedora clients using ping and configuring service checks to monitor critical services such as HTTP, SSH, and disk usage on Fedora client/s.
3. Implement checks for CPU usage, memory usage, disk space, network connectivity, and any other relevant metrics on Fedora client/s.

Part 2: DNS Caching Setup with CentOS Server and Fedora Clients

1. Set Up CentOS Server as a DNS Caching Server
2. Configure Fedora client machines to use the DNS caching server set up on the CentOS server for DNS resolution, ensuring faster and more efficient DNS lookups for network traffic.
3. Perform DNS resolution tests on Fedora clients to verify that they are correctly utilizing the DNS caching server.

Assignment Information:

*This is an individual Assignment

- You need to compile a detailed report on the steps concepts involved in the process including troubleshooting or debugging mechanisms. Make sure that you include screenshots of all the steps or configuration involved.
- Use the "Cover page" uploaded to the CoursWeb as the first page and change your details in correct placeholders before uploading your report to the link provided.
- In your demo setup, it should at least contain 1 CentOS server and 1 or 2 clients. Preferred to use virtual machines (VMware) to install your servers and client machines.
- Your installation and configuration can be done at your home.
- You can follow any material to install and configure the Nagios monitoring server and DNS Cache.
- A viva session will be carried out to evaluate the configurations that have being done and should be stick to the time allocated to you.
- You have to bring all your virtual machines to the viva, and you have to setup those machines in your allocated lab session before the viva session.
- All scenarios and configuration flows will be questioning during the time of viva.

In the viva session you have to demonstrate the following

- Demonstrate Nagios monitoring the Fedora clients and their services.
- Demonstrate that the Fedora client is utilizing the DNS caching server.

Important:

- You should aware regarding the important theory concepts of Nagios and DNS caching
- You should remember the important configuration directives that you have used.
- Plagiarism is strictly prohibited. Plagiarized submissions will get zero marks for the
- assignment.
- No late submissions are accepted.

Mark Allocation:

Installation and Configuration of Nagios Core	20
Adding Hosts and Services	10
Monitoring client metrics such as CPU usage, memory usage, disk space, network connectivity, critical services, etc.	20
Installation and Configuration of DNS Caching Server	20
Utilization of DNS cache by the client	15
Q & A	15
Total	**100**

Deadline for Report Submission: 21st April 2024