Experiment – 10

**Aim:** To understand continuous monitoring and installation and configuration of Nagios Core. Nagios Plugins and NRPE (Nagios Remote Plugin Executor) on Linux Machine.

**Theory:**

**Understanding Continuous Monitoring**

**1. Definition:**

Continuous monitoring is the process of regularly assessing systems, applications, and infrastructure to ensure they are functioning optimally and securely. It involves collecting data on system performance, availability, and security threats.

**2. Importance of Continuous Monitoring:**

- **Proactive Issue Resolution:** Identifying and addressing problems before they affect users or operations.

- **Performance Optimization:** Ensuring systems operate within defined parameters and are performing efficiently.

- **Compliance and Security:** Monitoring for security threats and ensuring compliance with regulatory requirements.

- **Resource Management:** Tracking resource usage to optimize costs and planning for future needs.

**3. Key Components:**

- **Metrics Collection:** Gathering data from various sources such as servers, applications, and networks.

- **Alerting Mechanisms:** Notifying administrators of any issues through alerts or notifications.

- **Reporting and Visualization:** Providing dashboards and reports for easy analysis of performance trends.

**Overview of Nagios Core**

**1. What is Nagios Core?**

Nagios Core is an open-source monitoring system that allows organizations to monitor systems, networks, and infrastructure. It is highly configurable and extensible, making it a popular choice for continuous monitoring.

**2. Key Features:**

- **Monitoring of Hosts and Services:** Ability to monitor networked devices, services, and applications.

- **Alerting:** Customizable notifications for failures and performance issues.

- **Plugins Support:** Extensible via a wide range of community and custom plugins.

- **Web Interface:** Provides a web-based dashboard for monitoring status and historical data.

**Installation and Configuration of Nagios Core**

**Prerequisites**

1. Linux Environment: A Linux server (e.g., Ubuntu, CentOS).

2. Packages: Ensure packages like `wget`, `gcc`, `make`, and `unzip` are installed.

**Step-by-Step Installation**

**1. Install Required Packages:**

*sudo apt update*

*sudo apt install -y autoconf gcc libgd-dev make apache2 libapache2-mod-php php php-gd*

**2. Download and Install Nagios Core:**

**Navigate to /tmp**

*cd /tmp*

**Download Nagios Core**

*wget https://github.com/NagiosEnterprises/nagioscore/archive/refs/tags/latest.tar.gz*

**Extract the downloaded file**

*tar -xzf latest.tar.gz*

*cd nagioscore-latest*

**Compile and install Nagios**

*./configure --with-command-group=nagios*

*make all*

*sudo make install*

*sudo make install-init*

*sudo make install-config*

*sudo make install-commandmode*

**3. Create a Nagios User:**

*sudo useradd nagios*

*sudo usermod -aG nagios www-data*

**4. Configure Apache:**

**Create a configuration file for Nagios**

*sudo nano /etc/apache2/conf-enabled/nagios.conf*

Add the following lines:

**Nagios configuration**

*Alias /nagios /usr/local/nagios/share*

*<Directory "/usr/local/nagios/share">*

*Options None*

*AllowOverride None*

*Require all granted*

*</Directory>*

Then enable the configuration and restart Apache:

*sudo systemctl restart apache2*

**5. Set Up Nagios Admin User:**

*sudo htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin*

**Step 6: Start Nagios**

*bash*

*sudo systemctl start nagios*

*sudo systemctl enable nagios*

**Monitoring with Nagios Plugins**

**1. What are Nagios Plugins?**

Nagios plugins are scripts or binaries that Nagios uses to check the status of various services and hosts. They provide the actual checks for various metrics such as CPU usage, disk space, network connectivity, etc.

**2. Installing Nagios Plugins:**

**Download Nagios Plugins**

*cd /tmp*

*wget https://github.com/NagiosEnterprises/nagios-plugins/archive/refs/tags/latest.tar.gz*

*tar -xzf latest.tar.gz*

*cd nagios-plugins-latest*

**Compile and install**

*./configure*

*make*

*sudo make install*

**Configuring NRPE (Nagios Remote Plugin Executor)**

**1. What is NRPE?**

NRPE allows Nagios to execute plugins on remote Linux/Unix machines. This is crucial for monitoring remote systems where local Nagios instances cannot access system metrics directly.

**2. Installing NRPE:**

*sudo apt install -y nagios-nrpe-server nagios-nrpe-plugin*

**Edit NRPE configuration**

*sudo nano /etc/nagios/nrpe.cfg*

**3. Configuration of NRPE:**

In **nrpe.cfg**, define which commands Nagios can execute remotely and specify allowed hosts:

*bash*

*allowed\_hosts=127.0.0.1, your\_nagios\_server\_ip*

**4. Restart NRPE Service:**

*bash*

*sudo systemctl restart nagios-nrpe-server*

**Step 4: Configuring Nagios to Monitor NRPE**

**1. Add Host Definitions:**

In Nagios configuration files (usually found in `/usr/local/nagios/etc/objects/`), add host definitions for the remote systems you wish to monitor.

*bash*

*define host {*

*use linux-server*

*host\_name remote-server*

*alias Remote Linux Server*

*address your\_remote\_server\_ip*

*}*

**2. Add Service Definitions:**

Add service checks to monitor the NRPE plugin commands you set earlier.

*bash*

*define service {*

*use generic-service*

*host\_name remote-server*

*service\_description Disk Space*

*check\_command check\_nrpe!check\_disk*

*}*

**3. Restart Nagios:**

*bash*

*sudo systemctl restart nagios*

**Experiment:**

