Experiment No: 10

Aim: To explain continuous monitoring and installation and configuration of Nagios Core, Nagios Plugins and NRPE (Nagios Remote Plugin Executor) on Linux machine.

LO1: To explain DevOps practices and cloud native environments to achieve continuous software delivery pipelines and automated operations that address the gap between IT resources and growing cloud complexity.

LO5: To describe various troubleshooting techniques by monitoring your entire infrastructure and business processes.

Theory:

Continuous monitoring is a crucial process in IT infrastructure management, ensuring that systems, networks, and applications are continuously evaluated for performance, availability, and security issues. Nagios Core is a powerful, open-source monitoring tool used to track the status of various services, devices, and systems. It alerts administrators when a problem arises and notifies them when the issue is resolved. This helps in maintaining a healthy and optimized IT environment, preventing downtime, and ensuring smooth operations.

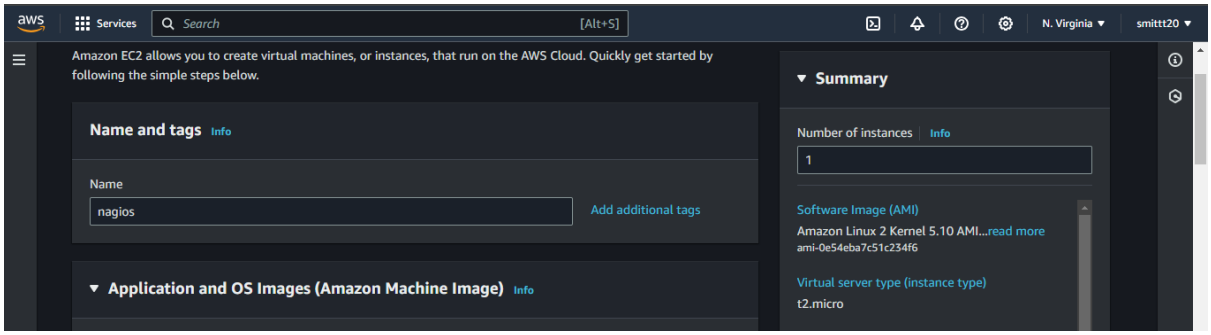
Nagios operates by running a series of checks on system resources and services like disk usage, CPU load, and memory usage. These checks are executed periodically, and the results are displayed on the Nagios web interface, where the system's overall health can be viewed in real-time.

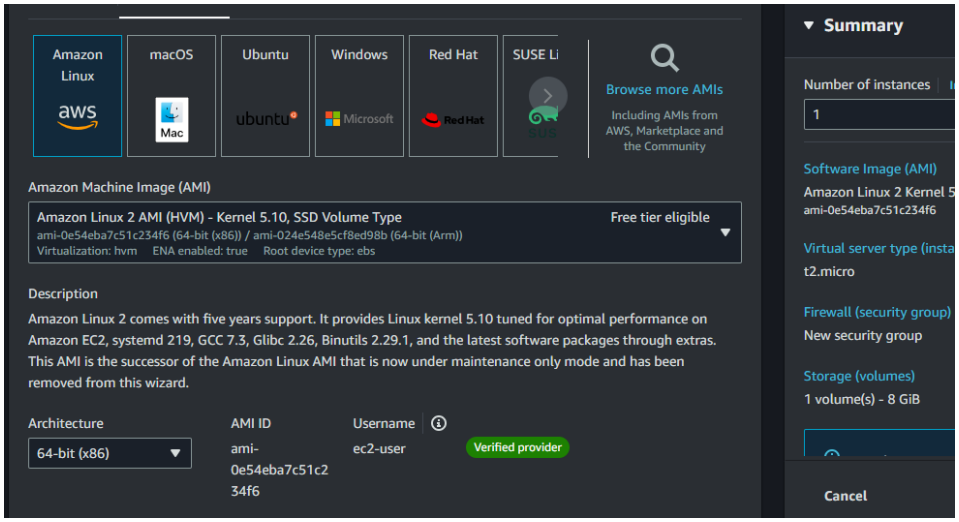
Nagios Components:

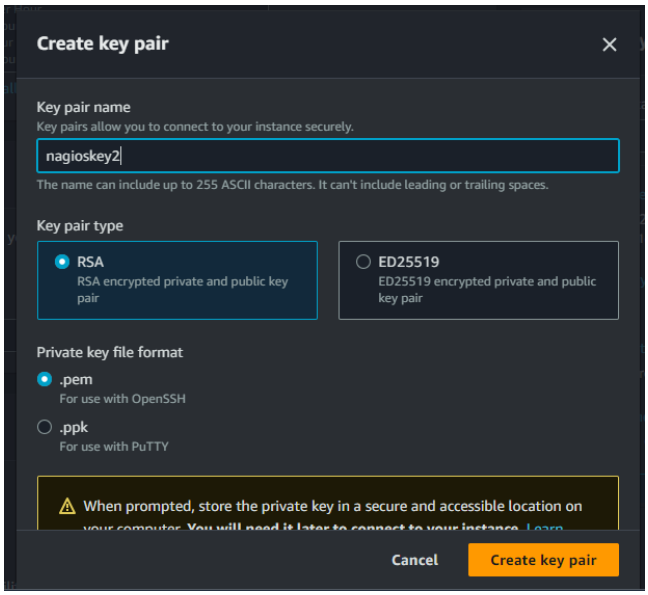
1. **Nagios Core:** The central engine responsible for processing checks, sending notifications, and managing monitoring.
2. **Nagios Plugins:** These are essential for performing actual checks. Each plugin monitors a specific service or resource, like disk space or CPU load, and returns the status to Nagios Core.
3. **NRPE (Nagios Remote Plugin Executor):** A tool that allows Nagios to remotely execute plugins on Linux/Unix machines, making it possible to monitor remote systems from a centralized Nagios server.

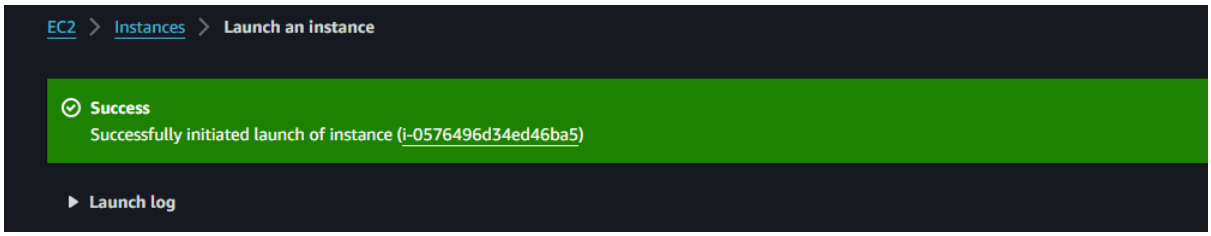
The experiment involves installing Nagios Core, Plugins, and NRPE on a Linux machine. The steps include setting up a monitoring server (Nagios Core), configuring the web interface for viewing the monitoring data, and adding remote hosts using NRPE for comprehensive infrastructure monitoring. Once configured, Nagios sends alerts via email or notifications whenever an issue, such as high CPU usage or insufficient disk space, arises. This allows for proactive response, helping administrators prevent potential system failures or outages.

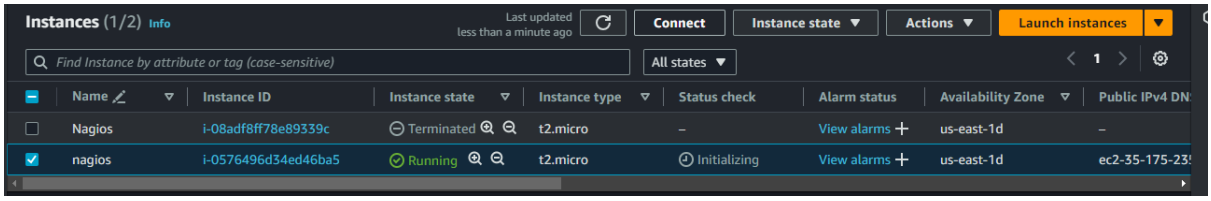
Steps:

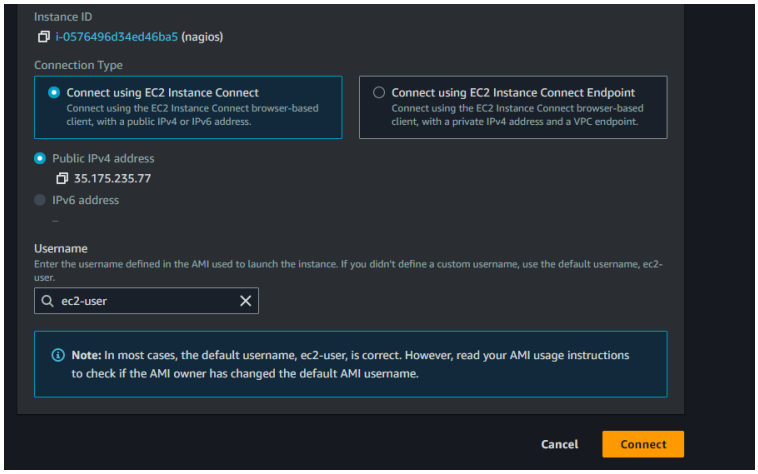

Services
Search
[Alt+S]
N. Virginia
smittt20
Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.
Name and tags Info
Name
nagios
Add additional tags
Application and OS Images (Amazon Machine Image) Info
Summary
Number of instances Info
1
Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI...read more
ami-0e54eba7c51c234f6
Virtual server type (instance type)
t2.micro


Amazon Linux
macOS
Ubuntu
Windows
Red Hat
SUSE Li
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community
Amazon Machine Image (AMI)
Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type
Free tier eligible
ami-0e54eba7c51c234f6 (64-bit (x86)) / ami-024e548e5cf8ed98b (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs
Description
Amazon Linux 2 comes with five years support. It provides Linux kernel 5.10 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is now under maintenance only mode and has been removed from this wizard.
Architecture
64-bit (x86)
AMI ID
ami-0e54eba7c51c234f6
Username
ec2-user
Verified provider
Summary
Number of instances
1
Software Image (AMI)
Amazon Linux 2 Kernel 5
ami-0e54eba7c51c234f6
Virtual server type (insta
t2.micro
Firewall (security group)
New security group
Storage (volumes)
1 volume(s) - 8 GiB
Cancel

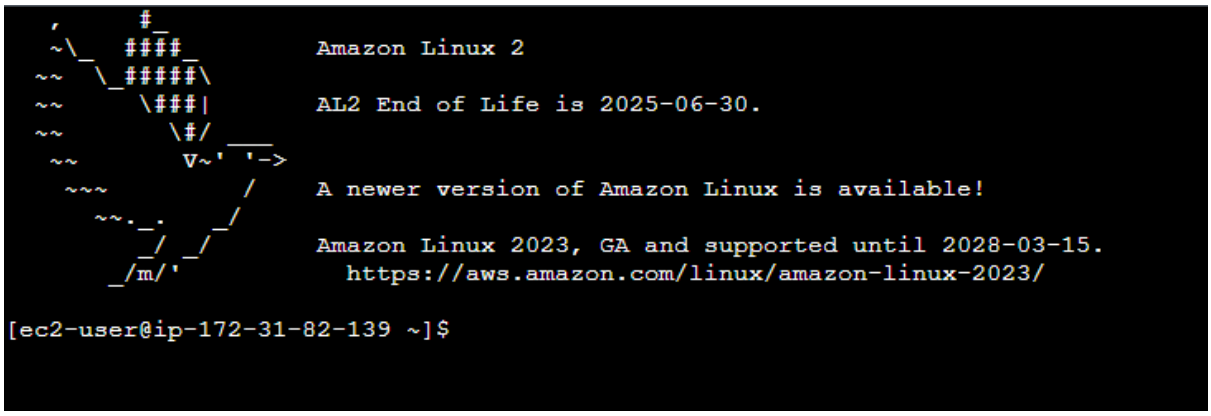

Create key pair
Key pair name
Key pairs allow you to connect to your instance securely.
nagioskey2
The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.
Key pair type
RSA
RSA encrypted private and public key pair
ED25519
ED25519 encrypted private and public key pair
Private key file format
.pem
For use with OpenSSH
.ppk
For use with PuTTY
When prompted, store the private key in a secure and accessible location on
Cancel
Create key pair


EC2
Instances
Launch an instance
Success
Successfully initiated launch of instance (i-0576496d34ed46ba5)
Launch log





Select the instance and click connect to go to below pic



Conclusion: From this experiment we have learned, how to set up continuous monitoring using Nagios Core, along with the Nagios Plugins and NRPE on a Linux machine. You can now expand this by adding more services or hosts as per your monitoring needs.

LO's achieved: LO1, LO5

PO's achieved: PO1, PO2, PO3, PO5, PO8, PO10, PO12