SRE TRAINING (DAY 12) - ADVANCED LINUX & JENKINS

SOME MORE COMMANDS...

* The free -h command displays the system's memory usage (RAM and swap) in a human-readable format.
* The command ps aux --sort=-%mem lists all running processes and sorts them by memory usage in descending order.
* The ping command checks the network connectivity between the host and a specified IP address or domain by sending ICMP echo requests and measuring the response time.
* The nslookup command queries DNS (Domain Name System) to obtain domain name or IP address mapping information.
* The stat command displays detailed information about a file or directory, including size, permissions, and timestamps.
* The df -h command shows the disk space usage of all mounted file systems in a human-readable format.
* The sudo apt search command searches for available packages in the APT package repository on Debian-based systems like Ubuntu.
* The dpkg -l command lists all installed packages on a Debian-based system along with their details, such as name, version, and description.
* Stress testing is a process used to evaluate a system's stability, performance, and reliability by running it under extreme conditions or heavy workloads to identify potential failures or weaknesses.
* The sudo stress command runs the stress tool with elevated privileges to impose workload on the system for stress testing.
* Adding a user Changing password Creating a new group, adding user and viewing group
* The finger command displays information about system users, including login name, real name, terminal, idle time, login time, and home directory.
* SSH (Secure Shell)
* The ssh (Secure Shell) command is used to securely connect to a remote system over a network, allowing users to execute commands and manage the remote machine.

SSH Key and Agent Concepts

🔑 SSH Key SSH keys are a pair of cryptographic keys used for secure authentication in SSH connections. They provide a more secure alternative to password-based login. The key pair includes a private key or public key.

ssh-keygen -t ed25519 -C "bhoomikaushik@gmail.com"

* RSA is one of the oldest and most widely supported public-key cryptosystems.
* ED25519 is a newer elliptic curve algorithm offering high security with better performance.

🖇 SSH Agent The SSH agent is a program that holds private keys in memory and manages them, allowing users to establish SSH connections without repeatedly entering passphrases. ● It runs in the background and stores unlocked private keys during a session. ● Once a private key is added to the agent, SSH can use it automatically for authentication.

* SSH agent identity refers to the SSH keys (private keys) that the SSH agent currently holds and uses to authenticate you when connecting to remote servers or services like GitHub.

⚡ Jenkins

Jenkins is an open-source automation server used for continuous integration (CI) and continuous delivery (CD) in software development. It helps automate tasks like building, testing, and deploying applications, making the development process faster and more reliable.

How Jenkins Works (CI/CD Flow):

1. Developer Pushes Code: Code is pushed to a version control system (like GitHub).
2. Jenkins Triggers Build: Jenkins detects the code change and triggers a build.
3. Testing: Automated tests run to ensure code quality.
4. Deployment: If tests pass, Jenkins deploys the code to the production or staging environment.

Installation commands

sudo apt install openjdk-11-jdk -y

sudo apt install jenkins -y

wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -

curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key | sudo tee /usr/share/keyrings/jenkins-keyring.asc > /dev/null

echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian-stable binary/" | sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null

sudo apt update

sudo apt install fontconfig openjdk-17-jre -y

sudo apt install jenkins -y

sudo cat /var/lib/jenkins/secrets/initialAdminPassword

sudo usermod -aG docker jenkins

sudo systemctl restart jenkins