Virtual Machine Resource Monitoring

Title: Virtual Machine Resource Monitoring

Subtitle: A Simple Bash Script for Monitoring VM Resources

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Project Overview

Objective:

To create a bash script that monitors CPU, memory, and disk usage of a virtual machine.

Significance:

- Helps in tracking resource utilization efficiently.
- Assists in diagnosing performance issues in real time.

Features:

- Displays CPU usage, showing the current load in percentage.
- Reports memory usage, including total, used, and free memory.
- Shows disk usage, detailing partition size, used space, and available space.

Prerequisites

- Ubuntu or any Linux-based virtual machine.
- Bash shell (default on most Linux systems).
- Basic familiarity with Linux terminal commands.

Implementation:

Step 1:

Script Creation

Created a bash script named monitor_vm.sh.

Utilized commands like top, free, and df to extract system resource information.

Step 2:

Making It Executable

Used chmod +x monitor_vm.sh to grant execute permissions.

Step 3:

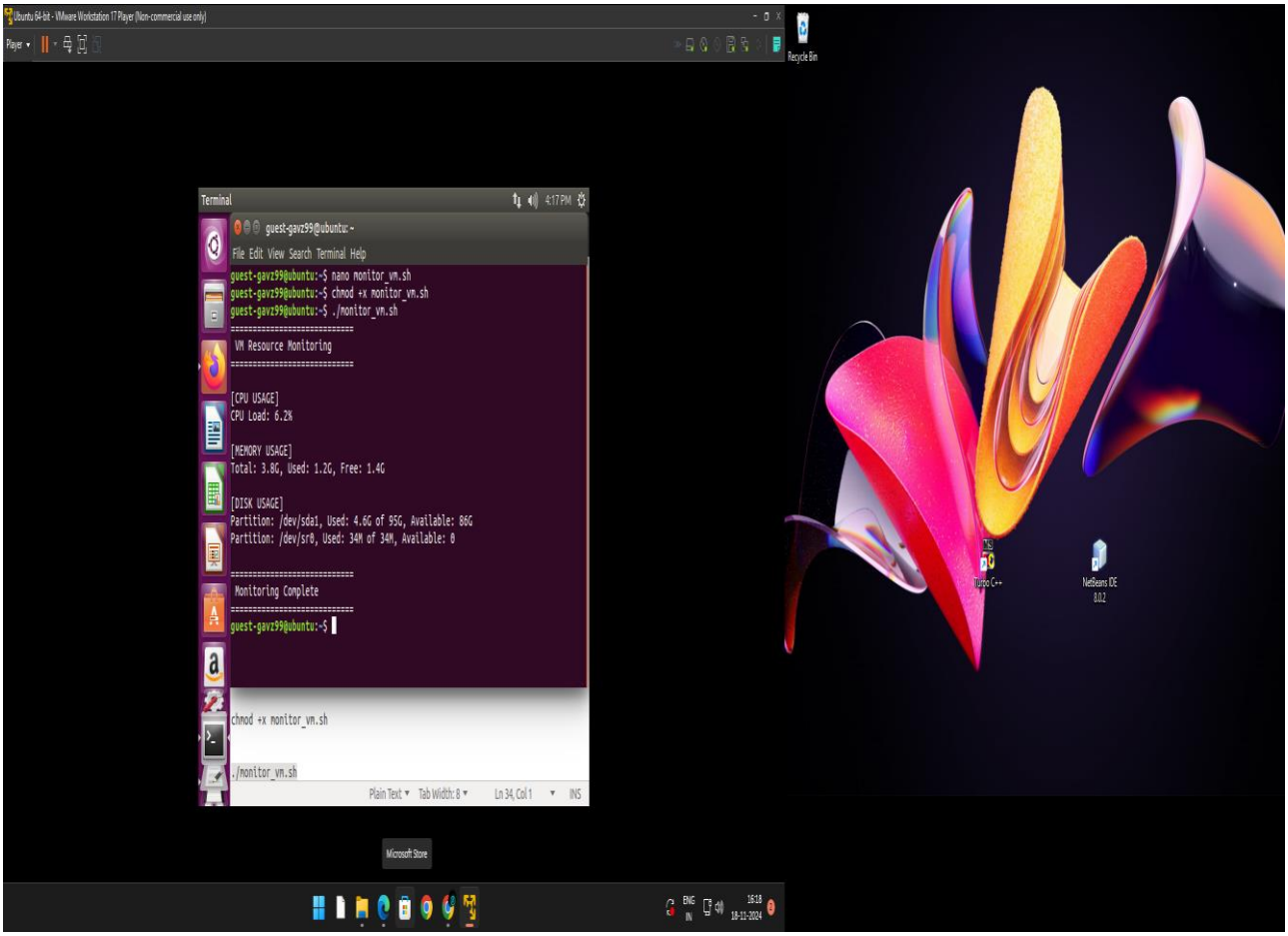
Running the Script

Executed the script using ./monitor_vm.sh.

Script Code:

```
#!/bin/bash

echo "============================"
echo " VM Resource Monitoring "
echo "============================"

# Display CPU usage
echo -e "\n[CPU USAGE]"
top -bn1 | grep "Cpu(s)" | awk '{print "CPU Load: " $2 "%"}'

# Display memory usage
echo -e "\n[MEMORY USAGE]"
free -h | awk '/^Mem/ {print "Total: " $2 ", Used: " $3 ", Free: " $4}'

# Display disk usage
echo -e "\n[DISK USAGE]"
df -h | grep "^/dev/" | awk '{print "Partition: " $1 ", Used: " $3 " of " $2 ", Available: " $4}'

echo -e "\n============================"
echo " Monitoring Complete "
echo "============================"
```

output:


Terminal
guest-gavz99@ubuntu: ~
File Edit View Search Terminal Help
guest-gavz99@ubuntu:~$ nano monitor_vm.sh
guest-gavz99@ubuntu:~$ chmod +x monitor_vm.sh
guest-gavz99@ubuntu:~$ ./monitor_vm.sh
VM Resource Monitoring
[CPU USAGE]
CPU Load: 6.2%
[MEMORY USAGE]
Total: 3.8G, Used: 1.2G, Free: 1.4G
[DISK USAGE]
Partition: /dev/sda1, Used: 4.6G of 95G, Available: 86G
Partition: /dev/sr0, Used: 34M of 34M, Available: 0
Monitoring Complete
guest-gavz99@ubuntu:~$
chmod +x monitor_vm.sh
./monitor_vm.sh
Recycle Bin
Turbo C++
NetBeans IDE 8.0.2
Microsoft Store