Placement Empowerment Program

Cloud Computing and DevOps Centre

Day 15 – Simple System Summary Report

Create a script to display basic system details like OS, uptime, disk space, memory usage, and current users.

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Introduction

System administrators and developers often need a quick overview of their system's health and configuration. Instead of running multiple

commands individually every time, a simple shell script can automate the process and generate a neat report.

This Proof of Concept (PoC) focuses on building a **Simple System Summary Report** using a bash script. It gathers essential system information such as **operating system details**, **uptime, disk usage, memory stats, and active users**, and presents it in a human-readable format.

This script is especially useful for beginners learning Linux and shell scripting, as it introduces key system commands and their usage in automation.

Overview

The **Simple System Summary Report** is a lightweight bash script designed to provide an at-a-glance view of a Linux system's current status. It consolidates key information from various system utilities into one clean, readable report.

This script captures the following:
Operating System Info: Displays the OS name and version from system files.
Uptime: Shows how long the system has been running without a reboot.
Disk Usage: Summarizes total disk space used and available.
Memory Usage: Reports available and used RAM and swap memory.
Logged-in Users: Lists all current active users.

This PoC helps automate routine health checks, aiding both system monitoring and educational understanding of Linux resource management tools.

Key steps in this PoC:

✓ **Open Terminal**

Launch the terminal on your Linux system to create and execute the script.

✅ **Create a Bash Script File**
Use a text editor like nano to create a script file named **system_summary.sh.**

✅ **Write the Script** Add commands to display:

- OS information using **cat /etc/os-release**
- System uptime using **uptime -p**
- Disk usage using **df -h --total**
- Memory status using **free -h**
- Current users using **who**

✅ **Make the Script Executable**
Use **chmod +x system_summary.sh** to grant execute permission.

✅ **Run the Script**
Execute the script with **./system_summary.sh** to display the system report.

✅ **Save Output to Log File**
Redirect output to a .log file for record-keeping using:
./system_summary.sh > system_report.log

Objectives :

The main objectives of this PoC are:

✅ **Automate System Health Checks**
Create a reusable script to automatically display key system information.

✅ **Learn Core Linux Commands**
Use essential commands like **uptime, df, free**, and **who** to gather system stats.

✓ **Improve Shell Scripting Skills**
Practice writing and executing bash scripts with formatted outputs.

✓ **Enhance System Monitoring**
Provide a quick and clear overview of system status for users or administrators.

✓ **Generate a Readable Report**
Format the output neatly to be easily interpreted or saved as a log file.

Importance:

✓**Quick Diagnostics**
Provides a fast way to check system health without running multiple commands manually.

✓ **System Maintenance Support**
Helps identify performance issues early by regularly monitoring disk, memory, and uptime.

✓ **Foundation for Advanced Monitoring**
Serves as a stepping stone to more advanced tools like **top, htop, Nagios,** or custom monitoring dashboards.

✓**Boosts Scripting Confidence**
Builds confidence in writing shell scripts and automating tasks.

✓**Useful for Reports and Audits**
The generated report can be saved and shared for auditing or troubleshooting purposes.

Step-by-Step Overview

Step 1:Open Terminal

Launch a terminal window on your Linux system.

Step 2:Createa ShellScriptFile

Use the nano editor to create a new file

Step 3:Write the Monitoring Script

In the nano editor,Paste the following code:

```
  GNU nano 7.2                                                    s
#!/bin/bash

# System Summary Report Script

echo "=============================================="
echo "        Simple System Summary Report"
echo "        Generated on: $(date)"
echo "=============================================="

# OS Info
echo -e "\n# Operating System Info:"
cat /etc/os-release | grep -E 'NAME|VERSION' | head -n 2

# System Uptime
echo -e "\n# Uptime:"
uptime

# Disk Usage
echo -e "\n# Disk Usage:"
df -h --total | grep total

# Memory Usage
echo -e "\n# Memory Usage:"
free -h

# Current Logged-in Users
echo -e "\n# Current Users:"
who
```

Step 4:Save and Exit

Press Ctrl + O → Enter (to save)

Press Ctrl + X (to exit)

Step 5: Make the Script Executable

Back in the terminal:

```
subashini_t@DESKTOP-8V1HGP1:~$ chmod +x system_summary.s
```

This gives the script permission to run as a program.

Step 6: Run the Script

Run the script to see the system summary:

```
subashini_t@DESKTOP-8V1HGP1:~$ ./system_summary.sh
=============================================
        Simple System Summary Report
        Generated on: Wed Jul  9 14:04:00 UTC 2025
=============================================

# Operating System Info:
PRETTY_NAME="Ubuntu 24.04.2 LTS"
NAME="Ubuntu"

# Uptime:
 14:04:00 up 41 min,  1 user,  load average: 0.03, 0.02, 0.00

# Disk Usage:
total           2.0T  183G  1.8T  10% -

# Memory Usage:
               total        used        free      shared  buff/cache   available
Mem:           7.6Gi       499Mi       7.2Gi       3.6Mi       141Mi       7.1Gi
Swap:          2.0Gi          0B       2.0Gi

# Current Users:
subashini_t pts/1        2025-07-09 13:19
=============================================
```

Step 7 : Save Output to Log File

If you want to store the output:

```
subashini_t@DESKTOP-8V1HGP1:~$ ./system_summary.sh > system_report.log
```

You can then view it later using:

```
subashini_t@DESKTOP-8V1HGP1:~$ cat system_report.log
=============================================
        Simple System Summary Report
        Generated on: Wed Jul  9 14:04:41 UTC 2025
=============================================

# Operating System Info:
PRETTY_NAME="Ubuntu 24.04.2 LTS"
NAME="Ubuntu"

# Uptime:
 14:04:41 up 42 min,  1 user,  load average: 0.01, 0.01, 0.00

# Disk Usage:
total           2.0T  183G  1.8T  10% -

# Memory Usage:
               total        used        free      shared  buff/cache   available
Mem:           7.6Gi       509Mi       7.1Gi       3.6Mi       141Mi       7.1Gi
Swap:          2.0Gi          0B       2.0Gi

# Current Users:
subashini_t pts/1        2025-07-09 13:19
=============================================
```

Outcomes:

✓ **Understood Key System Commands**

Learned how to use uptime, df, free, who, and cat /etc/os-release.

✅ **Created a Reusable Bash Script**
Built a shell script to automate system status checks.

✅ **Improved Shell Scripting Skills**
Practiced script writing, file permissions, and output formatting.

✅ **Generated a Readable System Report**
Produced clear and organized output summarizing system information.

✅ **Captured Output to a Log File**
Learned how to redirect command output to a file for future reference.

✅ **Strengthened Linux CLI Confidence**
Boosted hands-on experience with Linux command-line operations.

✅ **Prepared for Basic Sysadmin Tasks**
Gained practical knowledge useful for system monitoring and troubleshooting.