Linux

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# Develop a Comprehensive System Health Monitor Script

## Script Development

Below is the Bash script that gathers detailed system state information. This script will collect information about the system's hardware, memory, disk usage, network configuration, and running processes.

## Scheduling

To ensure the script can be scheduled to automatically run each day and includes the ability to adjust the run frequency, I use `cron` jobs.

### Setting Up a Cron Job

1. **Edit the Cron Table:** Open the cron tab editor:  
   crontab –e
2. **Add a Cron Job:** To run the script every hour, add the following line:   
   0 \* \* \* \* /path/to/your/system\_info.sh /path/to/output\_directory

#!/bin/bash

OUTPUT\_DIR=${1:-$(pwd)}

mkdir -p "$OUTPUT\_DIR"

FILENAME="system\_info\_$(date +'%Y-%m-%d\_%H-%M-%S').txt"

FILEPATH="$OUTPUT\_DIR/$FILENAME"

# System information

echo "Gathering system information..."

# OS details

echo "Operating System:" > "$FILEPATH"

uname -a >> "$FILEPATH"

echo "" >> "$FILEPATH"

# CPU information

echo "CPU Information:" >> "$FILEPATH"

lscpu >> "$FILEPATH"

echo "" >> "$FILEPATH"

# Memory information

echo "Memory Information:" >> "$FILEPATH"

free -h >> "$FILEPATH"

echo "" >> "$FILEPATH"

# Disk usage

echo "Disk Usage:" >> "$FILEPATH"

df -h >> "$FILEPATH"

echo "" >> "$FILEPATH"

# Mounted filesystems

echo "Mounted Filesystems:" >> "$FILEPATH"

mount | column -t >> "$FILEPATH"

echo "" >> "$FILEPATH"

# Network configuration

echo "Network Configuration:" >> "$FILEPATH"

ip a >> "$FILEPATH"

echo "" >> "$FILEPATH"

# Routing table

echo "Routing Table:" >> "$FILEPATH"

ip route >> "$FILEPATH"

echo "" >> "$FILEPATH"

# Installed packages

if command -v dpkg &> /dev/null; then

echo "Installed Packages:" >> "$FILEPATH"

dpkg -l >> "$FILEPATH"

echo "" >> "$FILEPATH"

fi

# Running processes

echo "Running Processes:" >> "$FILEPATH"

ps aux >> "$FILEPATH"

echo "" >> "$FILEPATH"

# Firewall status

if command -v ufw &> /dev/null; then

echo "Firewall Status:" >> "$FILEPATH"

sudo ufw status verbose >> "$FILEPATH"

echo "" >> "$FILEPATH"

fi

echo "System information has been gathered in $FILEPATH"











