

CA6C1 – DevOps National Institute of Technology, Trichy

Homework 2

Effort Estimation and Observability

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Q1) Write a HEARTBEAT job using BASH using the system log of your choice on your desired operating system.

HEARTBEAT job

```
#!/bin/bash
echo " "
echo "----- Heartbeat Check -----"
echo "Timestamp: $(date)"
echo "Hostname: $(hostname -f)"
echo "Uptime: $(uptime -p)"
echo "Load Average: $(uptime | awk -F'load average:' '{print $2}')"
echo "Operating System: $(cat /etc/os-release | grep PRETTY_NAME= | cut -d '=' -f2 | tr -d ' ')"
echo "Kernel Version: $(uname -r)"
echo "Architecture: $(uname -m)"
echo "CPU Model: $(awk -F':' '/model name/ {print $2}' /proc/cpuinfo | uniq | sed -e 's/^[ \t]*//')"
echo "CPU Cores: $(nproc)"
echo "Total RAM: $(free -h | awk '/Mem:/ {print $2}')"

CPU_USAGE=$(top -bn1 | grep 'Cpu(s)' | awk '{print 100 - $8"%"}')
echo "CPU Usage: $CPU_USAGE"

MEMORY_USAGE=$(free | awk '/Mem/ {printf("%.2f%", $3/$2*100)}')
echo "Memory Usage: $MEMORY_USAGE"

echo "Disk Usage:"
df -h | awk '$1 ~ /\dev\/\| {print $0}'

if ping -c 1 8.8.8.8 >/dev/null 2>&1; then
    echo "Network Status: Online"
else
    echo "Network Status: Offline"
fi

echo "-----"
```

Figure 1: Bash Script for Heartbeat Job

Output

```
----- Heartbeat Check -----  
Timestamp: Mon Mar 24 23:10:35 IST 2025  
Hostname: DESKTOP-A0DAQJ3.  
Uptime: up 26 minutes  
Load Average: 0.00, 0.00, 0.00  
Operating System: Ubuntu 22.04.1 LTS  
Kernel Version: 5.15.167.4-microsoft-standard-WSL2  
Architecture: x86_64  
CPU Model: AMD Ryzen 5 3550H with Radeon Vega Mobile Gfx  
CPU Cores: 8  
Total RAM: 2.9Gi  
CPU Usage: 100%  
Memory Usage: 11.19%  
Disk Usage:  
/dev/sdc      251G  5.4G  233G   3% /  
Network Status: Online  
-----
```

Figure 2: Output of the Heartbeat Job