

Homework 2

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

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#!/bin/bash
#
white="\033[1;32m" # Bright Green
red="\033[0;31m" # Normal Red
reset="\033[0;33m" # Normal Yellow
echo " "
echo -e "${white}-----System
Information-----${reset}"
echo -e "${red}Hostname:${reset}\t\t" hostname -f
echo -e "${red}IP Address:${reset}\t\t" hostname -I
echo -e "${red}Uptime:${reset}\t\t" uptime | awk '{print $3,$4}' | sed 's/,/'
echo -e "${red}Machine Type:${reset}\t\t" vserver=$(lscpu | grep Hypervisor | wc -l); if [ $vserver -gt 0 ];
then echo "VM"; else echo "Physical"; fi
echo -e "${red}Product Name:${reset}\t\t" cat /sys/class/dmi/id/product_name
echo -e "${red}Operating System:${reset}\t\t" cat /etc/redhat-release
echo -e "${red}Kernel:${reset}\t\t" uname -r
echo -e "${red}Architecture:${reset}\t\t" arch
echo -e "${red}Processor Name:${reset}\t\t" awk -F':' '/^model name/ {print $2}' /proc/cpuinfo | uniq | sed
-e 's/^[ \t]*//'
echo -e "${red}CPU Cores:${reset}\t\t" grep -c ^processor /proc/cpuinfo
echo -e "${red}Total RAM:${reset}\t\t" free -h | awk '/^Mem:/{print $2}'
echo -e "${red}Disk Usage:${reset}\t\t"
df -h | grep '^/dev/'
echo -e "${red}Load Average:${reset}\t\t" uptime | awk -F'load average:' '{ print $2 }'
echo " "
echo -e "${white}-----Resource
Usage-----${reset}"
echo -e "${red}CPU Usage:${reset}\t\t" awk '{u=$2+$4; t=$2+$4+$5; if (NR==1){u1=u; t1=t;} else print
($2+$4-u1) * 100 / (t-t1) "%";}' <(grep 'cpu ' /proc/stat) <(sleep 1; grep 'cpu ' /proc/stat)
echo -e "${red}Memory Usage:${reset}\t\t" free | awk '/Mem/{printf("%.2f%"), $3/$2*100}'
echo -e "${red}Swap Usage:${reset}\t\t" free | awk '/Swap/{printf("%.2f%"), $3/$2*100}'
echo -e "${red}Top 5 Processes by CPU Usage:${reset}"
ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%cpu | head -6
echo -e "${red}Top 5 Processes by Memory Usage:${reset}"
ps -eo pid,ppid,cmd,%mem,%cpu --sort=-%mem | head -6
echo -e "${red}Disk I/O:${reset}\t\t"
iostat -x | head -10
echo -e "${red}Network Usage:${reset}\t\t"
netstat -i | grep -vE '^Kernel|Iface|lo'
echo -e "${red}Active Network Connections:${reset}"
netstat -ant | grep 'ESTABLISHED'
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echo -e "${red}Swap Activity:${reset}"
vmstat 1 5
echo -e "${red}Zombie Processes:${reset}\t\t"
ps aux | awk '{ if ($8 == "Z") print $0; }'
echo -e "${red}System Temperature:${reset}\t\t"
sensors | grep 'Core'
echo " "

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Output:

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-----System Information-----
-----
Hostname:      Ashishs-MacBook-Air.local
hostname: illegal option -- I
usage: hostname [-f] [-s | -d] [name-of-host]
IP Address:
Uptime:        6 days
./b.sh: line 11: lscpu: command not found
Machine Type:   Physical
cat: /sys/class/dmi/id/product_name: No such file or directory
Product Name:
cat: /etc/redhat-release: No such file or directory
Operating System:
Kernel:        24.3.0
Architecture:   arm64
awk: can't open file /proc/cpuinfo
source line number 1
Processor Name:
grep: /proc/cpuinfo: No such file or directory
CPU Cores:
./b.sh: line 18: free: command not found
Total RAM:
Disk Usage:
/dev/disk3s1s1  460Gi   10Gi   379Gi    3%   412k   4.0G    0%   /
/dev/disk3s6    460Gi   1.0Gi   379Gi    1%     1   4.0G    0%   /System/Volumes/VM
/dev/disk3s2    460Gi   6.4Gi   379Gi    2%   1.2k   4.0G    0%   /System/Volumes/Preboot
/dev/disk3s4    460Gi   2.7Mi   379Gi    1%    53   4.0G    0%   /System/Volumes/Update
/dev/disk1s2    500Mi   6.0Mi   483Mi    2%     1   4.9M    0%   /System/Volumes/xarts
/dev/disk1s1    500Mi   5.6Mi   483Mi    2%    32   4.9M    0%   /System/Volumes/iSCPreboot
/dev/disk1s3    500Mi   976Ki   483Mi    1%    77   4.9M    0%   /System/Volumes/Hardware
/dev/disk3s5    460Gi   62Gi   379Gi   15%   927k   4.0G    0%   /System/Volumes/Data
/dev/disk3s3    460Gi   988Mi   379Gi    1%    41   4.0G    0%   /Volumes/Recovery
Load Average:

-----Resource Usage-----
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grep: /proc/stat: No such file or directory
grep: /proc/stat: No such file or directory
CPU Usage:

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CPU Usage:
./b.sh: line 25: free: command not found
Memory Usage:
./b.sh: line 26: free: command not found
Swap Usage:
Top 5 Processes by CPU Usage:
ps: cmd: keyword not found
ps: illegal option -- -
usage: ps [-AaCcEefhjLMmrSTvwXx] [-O fmt | -o fmt] [-G gid[,gid...]]
      [-g grp[,grp...]] [-u [uid,uid...]]
      [-p pid[,pid...]] [-t tty[,tty...]] [-U user[,user...]]
      ps [-L]
Top 5 Processes by Memory Usage:
ps: cmd: keyword not found
ps: illegal option -- -
usage: ps [-AaCcEefhjLMmrSTvwXx] [-O fmt | -o fmt] [-G gid[,gid...]]
      [-g grp[,grp...]] [-u [uid,uid...]]
      [-p pid[,pid...]] [-t tty[,tty...]] [-U user[,user...]]
      ps [-L]
Disk I/O:
iostat: illegal option -- x
usage: iostat [-CUdIKoT?] [-c count] [-n devs]
      [-w wait] [drives]
Network Usage:

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Name	Mtu	Network	Address	Ipkts	Ierrs	Opkts	Oerrs	Coll
gif0*	1280	<Link#2>		0	0	0	0	0
stf0*	1280	<Link#3>		0	0	0	0	0
anpi1	1500	<Link#4>	8a:ae:ae:be:5d:20	0	0	0	0	0
anpi0	1500	<Link#5>	8a:ae:ae:be:5d:1f	0	0	0	0	0
en3	1500	<Link#6>	8a:ae:ae:be:5d:ff	0	0	0	0	0
en4	1500	<Link#7>	8a:ae:ae:be:5d:00	0	0	0	0	0
en1	1500	<Link#8>	36:5e:6f:03:af:40	0	0	0	0	0
en2	1500	<Link#9>	36:5e:6f:03:af:44	0	0	0	0	0
bridge0	1500	<Link#12>	36:5e:6f:03:af:40	0	0	0	0	0
api	1500	<Link#10>	66:3f:82:aa:cc:14	0	0	0	0	0
en0	1500	<Link#11>	2a:1c:fe:e6:e3:7c	4993057	0	1472835	0	0
en0	1500	ashishs-mac	fe80:b::c87:49cc:	4993057	-	1472835	-	-
en0	1500	192.168.1	192.168.1.33	4993057	-	1472835	-	-
awd10	1500	<Link#13>	02:2b:e8:ae:f2:c2	0	0	31	0	0

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llw0      1500  fe80::2b:e8 fe80:e::2b:e8ff:f  0  -  0  -  -
utun0     1380  <Link#15>      0  0  23  0  0
utun0     1380  ashishs-mac fe80:f::58af:2ed:  0  -  23  -  -
utun1     2000  <Link#16>      0  0  22  0  0
utun1     2000  ashishs-mac fe80:10::7cbc:96d  0  -  22  -  -
utun2     1000  <Link#17>      0  0  24  0  0
utun2     1000  ashishs-mac fe80:11::ce81:b1c  0  -  24  -  -
utun3     1500  <Link#18>      0  0  1  0  0
utun3     1500  ashishs-mac fe80:12::f4ca:ced  0  -  1  -  -
Active Network Connections:
tcp4      0  0  192.168.1.33.56069  69.26.183.11.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56067  170.72.245.151.443 ESTABLISHED
tcp4      0  0  192.168.1.33.56066  162.159.192.1.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56056  3.233.158.26.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56051  216.58.196.170.443 ESTABLISHED
tcp4      0  0  192.168.1.33.56050  74.125.130.84.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56046  104.18.39.85.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56044  104.18.39.85.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56043  34.120.195.249.443 ESTABLISHED
tcp4      0  0  192.168.1.33.56041  104.18.32.47.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56039  142.250.207.74.443 ESTABLISHED
tcp4      0  0  192.168.1.33.56037  104.18.39.85.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56017  170.72.245.92.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56011  44.236.180.21.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56010  142.250.196.3.443  ESTABLISHED
tcp4      0  0  192.168.1.33.56009  172.217.160.138.443 ESTABLISHED
tcp4      0  0  192.168.1.33.55905  17.242.13.6.5223  ESTABLISHED
tcp4      0  0  192.168.1.33.55899  57.144.125.33.443  ESTABLISHED
tcp4      0  0  192.168.1.33.55881  142.251.12.108.993 ESTABLISHED
tcp4      0  0  192.168.1.33.55556  74.125.68.108.993  ESTABLISHED
tcp4      0  0  192.168.1.33.55503  170.72.245.193.443 ESTABLISHED
tcp4      0  0  192.168.1.33.50860  64.233.170.108.993 ESTABLISHED
Swap Activity:
./b.sh: line 38: vmstat: command not found
Zombie Processes:
System Temperature:
./b.sh: line 42: sensors: command not found
ashishpandey@Ashishs-MacBook-Air ~ %

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