Shell Scripting Basics

Create a shell script file and add shebang line.

```
ubuntu@ip-172-31-46-122:~$ hostname
ip-172-31-46-122
ubuntu@ip-172-31-46-122:~$ nano myscript.sh
ubuntu@ip-172-31-46-122:~$ chmod +x myscript.sh
ubuntu@ip-172-31-46-122:~$ ./myscript.sh
Hello, Ubuntu Machine
total 4
-rwxrwxr-x 1 ubuntu ubuntu 48 Jan 20 15:44 myscript.sh
ubuntu@ip-172-31-46-122:~$
```

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Write scripts for printing system information.

```
        Version: 02.00-09, Script Date: 2023.11.28

-------------------------------------------------------------
Main Complaint:
Problem Description:
--------- General Computer Specifications:

  --- Computer/CPU Information from 'lshw -C cpu' ---
*-Cpu
    Description: CPU
    Product: Intel(R) Xeon(R) Platinum 8259CL CPU @ 2.50GHz
    Vendor: Intel Corp.
    Physical id: 4
    Bus info: cpu@0
    Version: 6.85.7
    Slot: CPU 0
    Size: 2500MHz
    Capacity: 3500MHz
    Width: 64 bits
    Clock: 100MHz
    Capabilities: lm fpu fpu_exception wp vme de pse tsc msr pae mce cx8
:
```

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```
        threads=2
ip-172-31-46-122
    Description: Computer
    Product: t3.micro
    Vendor: Amazon EC2
    Serial: ec251eda-1383-58c7-dc67-4cf83fba105c
    Width: 64 bits
    Capabilities: smbios-2.7 dmi-2.7 smp vsyscall32
    Configuration:
        uuid=ec251eda-1383-58c7-dc67-4cf83fba105c

------------------ SMBIOS Information from '/sys/class/dmi/id/'
Bios Vendor:          Amazon EC2
Bios Version:         1.0
Bios Release:         1.0
Board Vendor:         Amazon EC2
Board Name:
Board Version:
Board Serial:
Board Asset Tag:      i-084723fa88ac71934
:
```

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```
Board Asset Tag:      i-084723fa88ac71934

Current boot mode:    UEFI Firmware mode
   --- SecureBoot Status from 'mokutil':
SecureBoot disabled
Platform is in Setup Mode


---------- Memory Information:
              total        used        free      shared  buff/cache   available
Mem:            914         354         353           2         364         560
Swap:             0           0           0
---------- Swap Information:
  --- Info from 'fstab'


  --- Info from '/proc/swaps'
Filename                          Type         Size         Used         Priority
:
```

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```
---------- Storage Controller Information From 'lspci':
00:04.0 Non-Volatile memory controller: Amazon.com, Inc. NVMe EBS Controller (prog-if 02 [NVM Express])
        Subsystem: Amazon.com, Inc. NVMe EBS Controller
        Physical Slot: 4
        Flags: bus master, fast devsel, latency 0, IRQ 11
        Memory at 80404000 (32-bit, non-prefetchable) [size=16K]
        Capabilities: [70] Express Endpoint, MSI 00
        Capabilities: [b0] MSI-X: Enable+ Count=3 Masked-
        Kernel driver in use: nvme


---------- File system specs from 'df -h':
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/root       ext4      6.8G  1.8G  5.0G  27% /
efivarfs        efivarfs  128K  3.6K  120K   3% /sys/firmware/efi/efivars
/dev/nvme0n1p16 ext4      881M   89M  730M  11% /boot
/dev/nvme0n1p15 vfat      105M  6.2M   99M   6% /boot/efi
:
```

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```
---------- Disk/Partition Information From 'fdisk':

Disk /dev/nvme0n1: 8 GiB, 8589934592 bytes, 16777216 sectors
Disk model: Amazon Elastic Block Store
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disklabel type: gpt
Disk identifier: B801982F-6AD4-451D-8934-AF60DA3FBFE5


Device             Start       End   Sectors   Size Type
/dev/nvme0n1p1   2099200  16777182  14677983    7G Linux filesystem
/dev/nvme0n1p14     2048     10239      8192    4M BIOS boot
/dev/nvme0n1p15    10240    227327    217088  106M EFI System
/dev/nvme0n1p16   227328   2097152   1869825  913M Linux extended boot

Partition table entries are not in disk order.
:
```

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```
Currently logged in User(s):
NAME     LINE         TIME         COMMENT
ubuntu   pts/0        Jan 20 15:49 (13.233.177.3)

The User running this script was: ubuntu
uid=1000(ubuntu)
gid=1000(ubuntu)
groups=1000(ubuntu),4(adm),24(cdrom),27(sudo),30(dip),105(lxd)

The 'system-info' script was booted from an installed system

The 'system-info' script seems to be running via ssh

The Linux Kernel Command Line use to boot was:
BOOT_IMAGE=/vmlinuz-6.14.0-1015-aws root=PARTUUID=cd553419-794d-4da4-9ba5-c355f5f9f74d ro console=tty1 console=ttyS0 nvme_core.io_timeout=4294967295
anic=-1

*** End Of Report ***
---------- INSTRUCTIONS FOR THE VIEWER 'LESS' ----------
You are using the viewer 'less'.
Advance to a next page with the SpaceBar key.
:
```

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```
---------- Other Details from 'Various':
The current kernel version is:    6.14.0-1015-aws
    --- Operating System Release Description ---
The current release description is:    Ubuntu 24.04.3 LTS

Estimated Installation Date:    2024-02-26
Original Installation Media: Cannot determine which ISO this was installed from (yet).
The Installer Log Directory does not exist.
Do-Release-Upgrade Date: This system may have not had a 'Release Upgrade' through 'do-release-upgrade'

    --- Hardware Enablement Stack (HWE) Informationt:
These are the current kernel ranges for HWE kernels for this release.
    --- HWE Kernel Reference from 'apt-cache show':
For HWE Package: linux-image-generic-hwe-24.04, Kernel Version: 6.14.0-33.33
For HWE Package: linux-image-generic-hwe-24.04, Kernel Version: 6.8.0-31.31

    --- HWE Package Status from 'dpkg':
HWE package linux-generic-hwe-24.04 was not detected. Please check
:
```
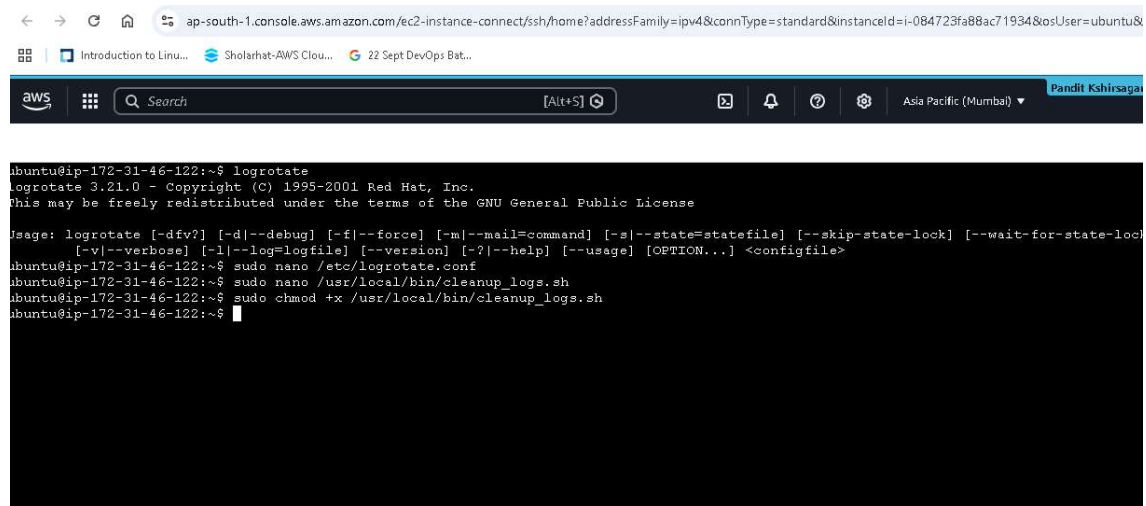
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Automate log cleanup or backup tasks.

← → C ⌂   ⛊ ap-south-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?addressFamily=ipv4&connType=standard&instanceId=i-084723fa88ac71934&osUser=ubuntu&

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```
ubuntu@ip-172-31-46-122:~$ logrotate
logrotate 3.21.0 - Copyright (C) 1995-2001 Red Hat, Inc.
This may be freely redistributed under the terms of the GNU General Public License

Usage: logrotate [-dfv?] [-d|--debug] [-f|--force] [-m|--mail=command] [-s|--state=statefile] [--skip-state-lock] [--wait-for-state-loc
        [-v|--verbose] [-l|--log=logfile] [--version] [-?|--help] [--usage] [OPTION...] <configfile>
ubuntu@ip-172-31-46-122:~$ sudo nano /etc/logrotate.conf
ubuntu@ip-172-31-46-122:~$ sudo nano /usr/local/bin/cleanup_logs.sh
ubuntu@ip-172-31-46-122:~$ sudo chmod +x /usr/local/bin/cleanup_logs.sh
ubuntu@ip-172-31-46-122:~$
```

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Use variables, conditionals, loops in scripts

```
# C-style for loop (Bash specific)
for (( i = 0; i < 5; i++ )); do
  echo "Number: $i"
done
Item: 1
Item: 2
Item: 3
Item: 4
Item: 5
Number: 0
Number: 1
Number: 2
Number: 3
Number: 4
ubuntu@ip-172-31-46-122:~$ #!/bin/bash
COUNT=0
while [ "$COUNT" -lt 5 ]; do
  echo "Count: $COUNT"
  COUNT=$((COUNT + 1)) # Arithmetic operation
done
Count: 0
Count: 1
```

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