SLL Question Bank Answers for April 2024

MAKE SURE TO DO THIS!!

First super user by typing 'su' then enter password as sll731

1. Configure Apache Web Server.

yum install httpd

y then enter if package not installed

systemctl start httpd

gedit /var/www/html/index.html

Do some basic html coding:

```
<!DOCTYPE html>
<html>
<head>
<title> Page Title</title>
</head>
<body>
<h1> This is H1 Heading</h1>
This is a paragraph
```

Make sure to save the file.

Then open firefox and type 127.0.0.5000 in the address bar.

If that doesn't work, go to terminal and type

ір а

</body>

and enter the ip you got from the command:

It usually starts with 192.168.100.////

2. a) Create a text file. Infer the file permissions.

touch file.txt Is -I file.txt

b) Using the Octal mode change the permission on a particular file as rw-rw-r-

chmod 664 file.txt Is -I file.txt

c) Using the Symbolic mode change the permission on a particular file as rw-rw-r

chmod u=rw,g=rw,o=r file.txt ls -l file.txt

3. Configure SSH server.

Run the following commands on Server and Client. (Server is where you will access the files and Client is from where you will connect to the server to access the files)

Server:

yum install openssh-server systemctl start sshd systemctl status sshd systemctl stop firewalld

You can create a file or folder that the client can access in the server using touch

Get ip of the server pc by doing ip a It usually starts with 192.168.100.///

Client:

ssh sfit@IP sll731

Now you can run various commands and check the directory with Is and cd

4. a) Create a user by assigning the primary group explicitly.

groupadd mygroup useradd -g username mygroup

If the above doesn't work for you

useradd username username username

b) Demonstrate the account status using the password aging settings and infer on the various account status.

passwd -S username

c) Demonstrate locking and unlocking of the user password

passwd -l username passwd -u username

5. Configure NFS server-client.

Run the following commands on Server and Client.

(Server is where you will access the files and Client is from where you will connect to the server to access the files)

yum install nfs-utils libnfsidmap systemctl enable rpcbind nfs-server systemctl start rpcbind rpc-statd nfs-server nfs-idmapd systemctl stop firewalld

Server:

Create a directory for demonstration:

mkdir foldername chmod a+rwx foldername Is

gedit /etc/exports

write following line in file:

/foldername client_ip(rw,sync,no_root_squash)

Save the file

exportfs -rv

Client:

mkdir /mnt/directory_name

mount server_ip:/foldername /mnt/directory_name

Make sure to enter the **foldername** same as you created in the server

df -h

To unmount the directory

umount /mnt/directory_name

6. a) Write a shell script to reverse the word order in a list of strings. For example, if the input is Hello World, output should be World Hello.

gedit 6a.sh

```
#!/bin/bash
read -p "Enter a list of strings separated by space: " input_string
reversed_string=""
for word in $input_string; do
    reversed_string="$word $reversed_string"
done
echo "Reversed word order: $reversed_string"
```

bash 6a.sh

b) Write a shell script to convert the user-given temperature in Celsius to Fahrenheit using a bash calculator

gedit 6b.sh

```
#! /bin/bash

read -p "Enter temperature in Celcius: " celsius

farheneit=$(echo "scale=2; ($celsius *9/5) + 32" | bc)

echo "$celsius in Farheneit is $farheneit."
```

bash 6b.sh

7. Establish Telnet communication on port 43897.

Run the following commands on Server and Client. (Server is where you will access the files and Client is from where you will connect to the server to access the files)

yum install telnet telnet-server systemctl start telnet.socket systemctl status telnet.socket systemctl stop firewalld

On server side edit the following file gedit usr/lib/systemd/system/telnet.socket

Change the ListenStream value to number **43897**

Find **IP** with **ip a**It usually starts with **192.168.100.**///

On client side: telnet IP 43897

8. Perform the following operations using yum package manager and interpret the output of command used: a) List all installed packages

yum list installed

- b) Describe the info of a package yum info package_name
- c) Find out which package installed a particular file

yum deplist package_name

9. Demonstrate fdisk and df commands and interpret it's output

FDISK:-

1. View all Disk Partitions in Linux

fdisk -l

2. View Specific Disk Partition in Linux

fdisk -l /dev/sda

3. Check all Available fdisk Commands

fdisk /dev/sda

DF:-

1. Display all the file system

df -a

2. Show the file system type

df -T

3. Show the disc space usage in a readable format

df -h

10. Configure Telnet server-client.

Run the following commands on Server and Client.

(Server is where you will access the files and Client is from where you will connect to the server to access the files)

yum install telnet telnet-server systemctl start telnet.socket systemctl status telnet.socket systemctl stop firewalld

On server side edit the following file gedit usr/lib/systemd/system/telnet.socket

Change the ListenStream value to number 4000

Find **IP** with **ip a**It usually starts with **192.168.100.**///

On client side: telnet IP 4000

11. a) Write a shell script that consists of a function that displays the number of files in the present working directory. Name this function "file_count" and call it in your script.

gedit 11a.sh

```
#!/bin/bash

file_count() {
    local count=$(ls -1 | wc -l)
    echo "Number of files in the current directory: $count"
}
file_count
```

bash 11a.sh

b) Write a shell script to terminate the script if invoked by non-root user using function and appropriate exit codes.

gedit 11b.sh

```
#!/bin/bash

check_root() {
   if [ "$(id -u)" != "0" ]; then
       echo "Error: This script must be run as root."
       exit 1
    fi
}

check_root
echo "Script executed successfully by root user."
```

bash 11b.sh

12. Write a shell script to check the system status.

gedit 12.sh

```
#!/bin/bash
machine()
{
      echo -e "\e[29;44m***** HOSTNAME INFORMATION *****\e[0m"
      hostnamectl
      echo " "
    echo -e "\e[29;44m***** FILE SYSTEM DISK SPACE USAGE *****\e[0m" \,
      echo " "
    echo -e "\e[29;44m***** FREE & USED MEMORY *****\e[0m"
      free
      echo " "
    echo -e "\e[1;32m***** SYSTEM UPTIME $ LOAD *****\e[0m"
      uptime
      echo " "
    echo -e "\e[29;44m***** CURRENTLY LOGGED-IN USERS *****\e[0m"
      who
      echo " "
    echo -e "\e[29;44m***** TOP 5 MEMORY-CONSUMING PROCESSES *****\e[0m"
      ps -eo %mem,%cpu,comm --sort=-%mem | head -n 6
      echo " "
      echo -e "\e[1;32Done.\e[0m"
}
machine
```

bash 12.sh

13. Configure FTP server.

yum install vsftpd systemctl start vsftpd systemctl status vsftpd

gedit /etc/vsftpd/vsftpd.conf

Make following changes in file:

Change

anonymous_enable=YES to anonymous_enable=NO

uncomment

ascii_upload_enable=YES & ascii_Ddownload_enable=YES

uncomment

Welcome to blah ftp service

add at the end of file

use_localtime=YES

systemctl start vsftpd systemctl enable vsftpd systemctl stop firewalld

To connect to server from client side:

yum install ftp

Find **IP** with **ip a**It usually starts with **192.168.100.**///

ftp IP

b) Changing the group of the user

gedit 14.sh

```
#!/bin/bash
add user() {
  read -p "Enter username: " username
  read -p "Enter fullname: " userfullname
  echo ""
  read -p "Enter group name: " groupname
  groupadd $groupname
  useradd -g $groupname -c "$userfullname" $username
  echo "User $username added successfully to group $groupname."
}
change group() {
  read -p "Enter username: " username
  read -p "Enter new group name: " new_groupname
  sudo usermod -g $new groupname $username
  echo "Group of user $username changed to $new groupname."
}
echo "Select an option:"
echo "1. Add a user"
echo "2. Change group of a user"
read -p "Enter your choice: " choice
case $choice in
  1) add user ;;
  2) change_group ;;
  *) echo "Invalid choice. Please select 1 or 2." ;;
esac
```

15. Establish SSH communication on port 41101.

Run the following commands on Server and Client.

(Server is where you will access the files and Client is from where you will connect to the server to access the files)

Server:

yum install openssh-server systemctl start sshd systemctl status sshd systemctl stop firewalld

Create a file or folder that the client can access in the server using **touch** Get ip of the server pc by doing **ip a** It usually starts with **192.168.100**.///

To configure port to 41101 type gedit /etc/ssh/sshd_config

And uncomment the Port and type 41101.

Client:

ssh sfit@IP sll731

Now you can run various commands and check the directory with Is and cd

For 41101 port: ssh sfit@IP -p 41101

16. Write a shell script to automate the following

- a. Installing a package using yum
- b. Checking package info using yum

gedit 16.sh

```
#!/bin/bash
install package() {
  read -p "Enter the name of the package to install: " package_name
  sudo yum install $package name -y
  echo "Package $package name installed successfully."
}
check package info() {
  read -p "Enter the name of the package to check info: " package name
  sudo yum info $package_name
}
echo "Select an option:"
echo "1. Install a package using yum"
echo "2. Check package info using yum"
read -p "Enter your choice: " choice
case $choice in
  1) install package ;;
  2) check package info ;;
  *) echo "Invalid choice. Please select 1 or 2.";;
esac
```

bash 16.sh

17. Configure NFS server-client.

Run the following commands on Server and Client.

(Server is where you will access the files and Client is from where you will connect to the server to access the files)

yum install nfs-utils libnfsidmap systemctl enable rpcbind nfs-server systemctl start rpcbind rpc-statd nfs-server nfs-idmapd systemctl stop firewalld

Server:

Create a directory for demonstration:

mkdir foldername chmod a+rwx foldername Is

gedit /etc/exports

write following line in file:

/foldername client ip(rw,sync,no root squash)

Save the file

exportfs -rv

Client:

mkdir/mnt/directory name

mount server_ip:/foldername /mnt/directory_name

Make sure to enter the **foldername** same as you created in the server

df -h

To unmount the directory

umount /mnt/directory_name

18. Write a shell script to check if the user is root.

gedit 18.sh

```
#!/bin/bash
```

```
# Check if the user is root
if [ "$(id -u)" = "0" ]; then
    echo "User is root."
else
    echo "User is not root."
fi
```

bash 18.sh