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CIS245

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SCRIP TO DUMP NETWORK INFO

This assignment requires to write a script to dump network information. First, we need to determine what network information we need to see:

* Host Name
* IP Address
* MAC Address
* Routing Table and Default Gateway
* DNS server
* Port Status and Connection Status

Second, select the network commands to use.

# COMMANDS FOR SCRIPT

GETTING THE HOST NAME

The Host Name is on the HOSTNAME variable of our Linux server. The echo command displays the content of that variable.

$ echo $HOSTNAME

Text

Description automatically generated

IP COMMAND

The ip command is a Linux network tool to show and set up network interfaces. This command displays: IP Address, MAC Address, Routing table and Default Gateway.

$ ip address

This command displays IP Addresses, and MAC addresses for each network interface

Text

Description automatically generated

$ ip route

This command displays the Routing Table and Default Gateway

Text

Description automatically generated

DNS SERVER

To see the configured DNS we only need to look at the /etc/resolv.conf file.

Text

Description automatically generated

NETSTAT COMMAND

This command displays network status.

$ netstat -a -n

This command shows network status and the following additional information:

-a this option adds all the connected and waiting ports information.

-n this option shows the port number instead of the name of the service running on that port.

Text

Description automatically generated

# CHECKING REQUIREMENTS ON CENTOS SERVER

The ip command is included in most Linux distributions. However, to check if it is installed, we need to check if the iproute2 package is on the Linux server

The following briefly list shows the iproute2 is included inside iproute package on the CentOS server

Text

Description automatically generated

The netstat command is included in net-tools package.

Text

Description automatically generated

The CentOS server has installed the necessary packages to run the explained commands.

# CHECKING REQUIREMENTS ON UBUNTU SERVER

Now, let us check if the iproute2 package is installed on the Ubuntu server.

Text

Description automatically generated

The package is installed.

Executing netstat command on the Ubuntu server shows that netstat is not installed.

Text

Description automatically generated

Also, Ubuntu server shows what package we should install to get it. Net-tools package.

Installing net-tools package requires root privileges. Then, after running “su –“ command:

$ apt install net-tools

Text

Description automatically generated

Now, net-tools package is installed on the Ubuntu server.

Running netstat command

$ netsat -a -n

Graphical user interface

Description automatically generated with medium confidence

This command has many lines. Ubuntu server is only a text server and we have lost the beginning of the output. Then, we can add a “ | more” command to make pause to read the output.

$ netstat -a -n | more

Text

Description automatically generated

Press space bar to continue

# WRITING THE SCRIPT

Using the previous commands, the following script write a file with the network information. At the end the file is displayed on the screen with a cat command and a more command to make a pause to read the same.

The commands used by this script do not require root privileges. This script can be run by any user in any folder.

FILE: Netsetup.sh

# netsetup.sh

# 11/06/2021

# Wendy Silvestre

# !/bin/bash

## files ##

DNSCLIENT="/etc/resolv.conf"

## An Output file to write Network Congiguration ##

NETSETUPFILE="network\_setup.$(date +'%m-%d-%y').txt"

# Function to write a title for every command

title(){

echo "-------------------------------------------------------------------------------------" >> $NETSETUPFILE

echo "$@" >> $NETSETUPFILE

echo "-------------------------------------------------------------------------------------" >> $NETSETUPFILE

}

net\_info(){

# Create Network\_Setup File

touch NETSETUPFILE

# Title for report

title "NETWORK CONFIGURATION REPORT"

# Reporting Host Name & Report Date

echo "\* Hostname: $(hostname)" >>$NETSETUPFILE

echo "\* Date: $(date)" >>$NETSETUPFILE

# Reporting Network Interfaces Information : Using ip address command

title "Network Interfaces"

ip address >> $NETSETUPFILE

# Reporting Routing Table : Using ip route command

title "Routing Table"

ip route >> $NETSETUPFILE

# Reporting DNS Configuration: Display /etc/resolv.conf file

title "DNS Client $DNSCLIENT Configuration"

[ -f $DNSCLIENT ] && cat $DNSCLIENT >> $NETSETUPFILE || echo "Error $DNSCLIENT file not found." >> $NETSETUPFILE

# Reporting Ports and Connection Status

title "Ports & Connections Status"

netstat -a -n >> $NETSETUPFILE

# Displaying report

cat $NETSETUPFILE | more

echo "Network Configuration File was created: $NETSETUPFILE"

}

net\_info

# REPORT FOR CENTOS SERVER

$ netsetup.sh

This command runs the script on the CentOS server

Text

Description automatically generated

When the script ends

$ ls -l net\*

This command shows the script and the file created

Graphical user interface, text, application

Description automatically generated

# REPORT FOR UBUNTU SERVER

$ netsetup.sh

This command runs the script on the Ubuntu Server

Text

Description automatically generated

When the script ends

$ ls -l net\*

This command shows the script and the file created

Text

Description automatically generated

# GITHUB LINK TO THIS NETWORKING ASSIGNMENT

<https://github.com/wsilves3/Network-Dump-Script>

# BIBLIOGRAPHY

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