GHARDA FOUNDATION

GHARDA INSTITUTE OF TECHNOLOGY, LAVEL

Department of Computer Engineering

Evaluation Sheet

Class: TE-Computer Engineeing Sem: V

Subject: **Computer Networks**

Experiment No: 2

Title of Experiment: Use basic networking commands in Linux (ping, traceroute, nslookup, netstat, hostname, ip, ifconfig, dig)

Name of Student: Sanket Chandrashekhar Harvande Roll No: 19

Sr. No.	Evaluation Criteria	Max Marks	Marks Obtained
1	Practical Performance	8	
2	Oral	5	
3	Timely Submission	2	
	Total	15	

Signature of Subject Teacher
(Mr. S. S. Tathare)

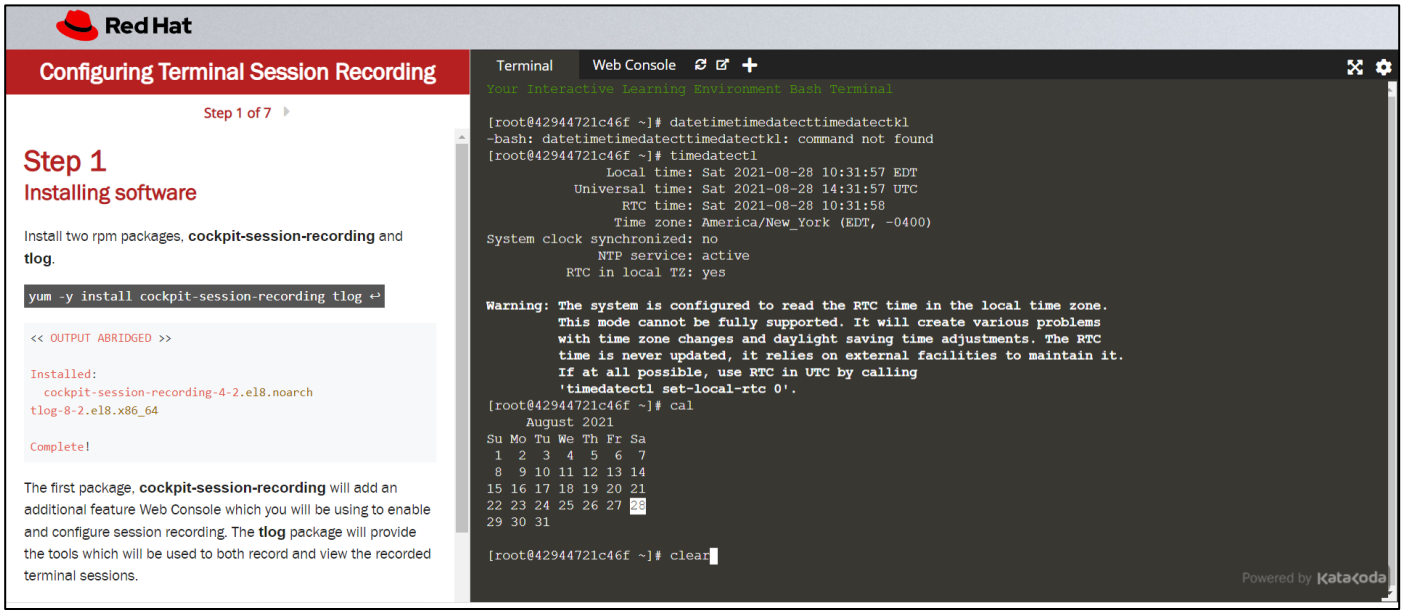
Aim: To study use of basic networking commands in Linux (ping, traceroute, nslookup, netstat, hostname, ip, ifconfig, dig)

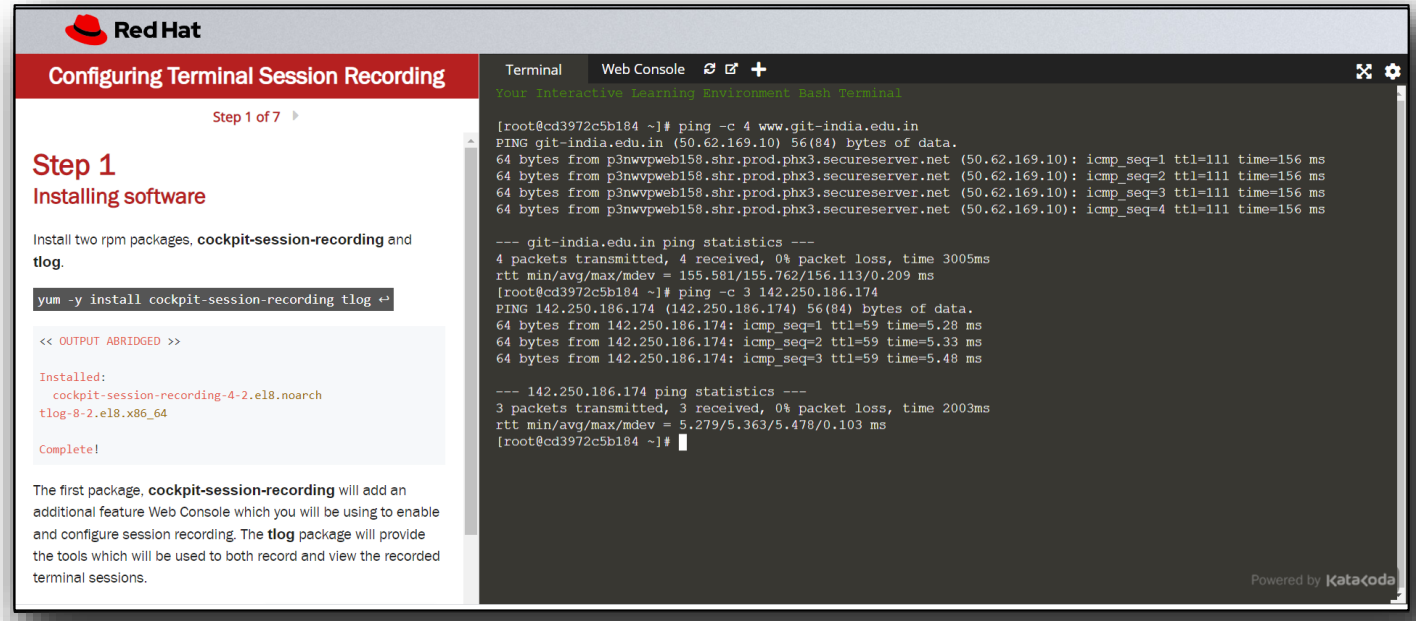
Apparatus: RHEL8 on Virtualbox/Vmware OR Online web virtual environment on Redhat Website.

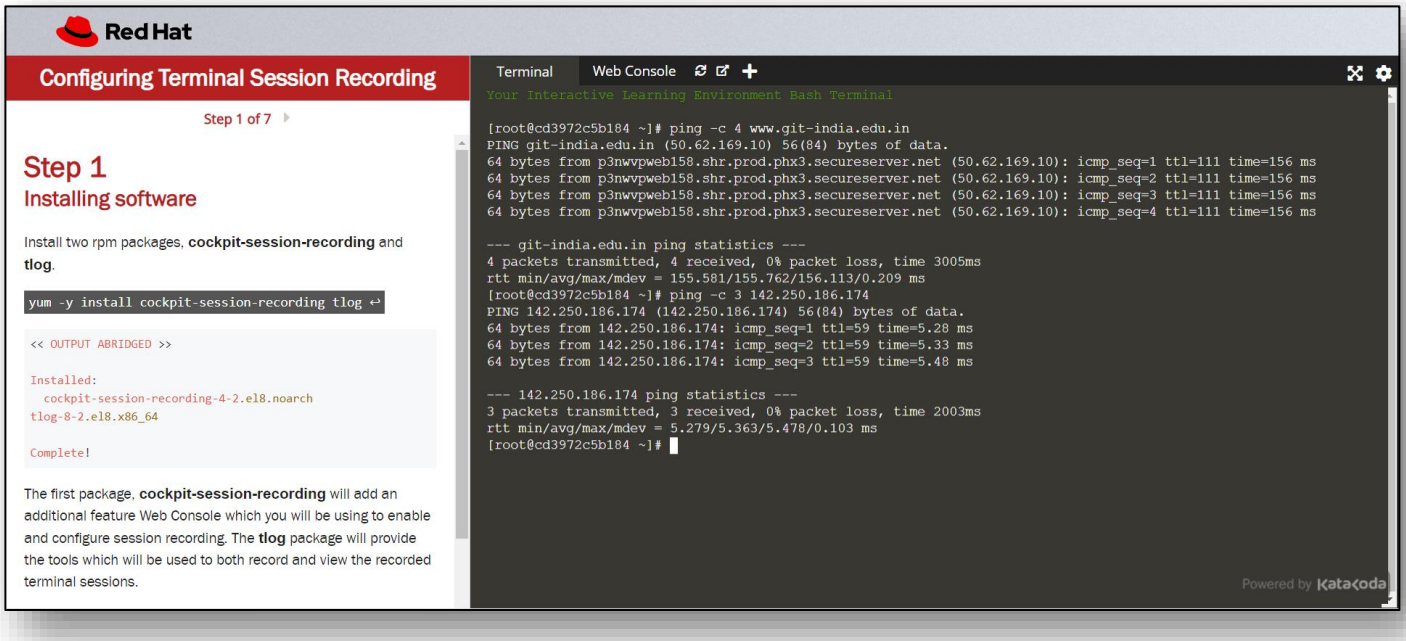
Procedure:

1.Open the RHEL8 on Virtualbox/Vmware OR Online web virtual environment on Redhat Website.
2.Fire the ping command alongwith the host Ip address to see if a host is alive. Ping command sends an ICMP ECHO_REQUEST packet to the target host and waits to see if it replies.
3.If ping shows missing packets, fire the traceroute command to see what route the packets are taking.
4.Fire the nslookup command to a certain website which is a program that helps to query domain name servers and resolving IP of it.
5.Fire the dig (Domain Information Groper) command to interrogate DNS name servers.
6.Check for the netstat command for finding connection to and from the host.
7.Fire the ifconfig command to check the IP address assigned to the system.
8. Check for the hostname command to check the hostname of the system.

Screenshots :




Red Hat
Configuring Terminal Session Recording
Step 1 of 7
Step 1
Installing software
Install two rpm packages, cockpit-session-recording and tlog.
yum -y install cockpit-session-recording tlog ↩
<< OUTPUT ABRIDGED >>
Installed:
cockpit-session-recording-4-2.el8.noarch
tlog-8-2.el8.x86_64
Complete!
The first package, cockpit-session-recording will add an additional feature Web Console which you will be using to enable and configure session recording. The tlog package will provide the tools which will be used to both record and view the recorded terminal sessions.
Terminal
Web Console
Your Interactive Learning Environment Bash Terminal
[root@cd3972c5b184 ~]# ping -c 4 www.git-india.edu.in
PING git-india.edu.in (50.62.169.10) 56(84) bytes of data.
64 bytes from p3nwvpweb158.shr.prod.phx3.secureserver.net (50.62.169.10): icmp_seq=1 ttl=111 time=156 ms
64 bytes from p3nwvpweb158.shr.prod.phx3.secureserver.net (50.62.169.10): icmp_seq=2 ttl=111 time=156 ms
64 bytes from p3nwvpweb158.shr.prod.phx3.secureserver.net (50.62.169.10): icmp_seq=3 ttl=111 time=156 ms
64 bytes from p3nwvpweb158.shr.prod.phx3.secureserver.net (50.62.169.10): icmp_seq=4 ttl=111 time=156 ms
--- git-india.edu.in ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3005ms
rtt min/avg/max/mdev = 155.581/155.762/156.113/0.209 ms
[root@cd3972c5b184 ~]# ping -c 3 142.250.186.174
PING 142.250.186.174 (142.250.186.174) 56(84) bytes of data.
64 bytes from 142.250.186.174: icmp_seq=1 ttl=59 time=5.28 ms
64 bytes from 142.250.186.174: icmp_seq=2 ttl=59 time=5.33 ms
64 bytes from 142.250.186.174: icmp_seq=3 ttl=59 time=5.48 ms
--- 142.250.186.174 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 5.279/5.363/5.478/0.103 ms
[root@cd3972c5b184 ~]#
Powered by Katacoda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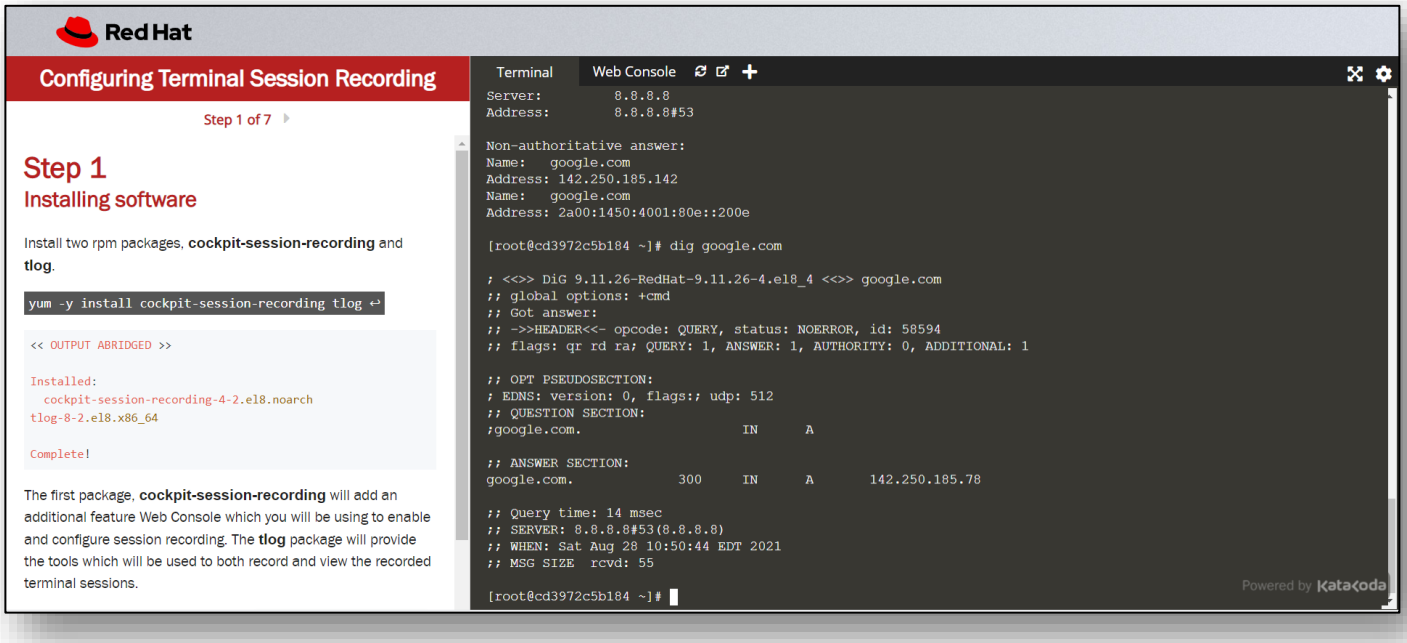
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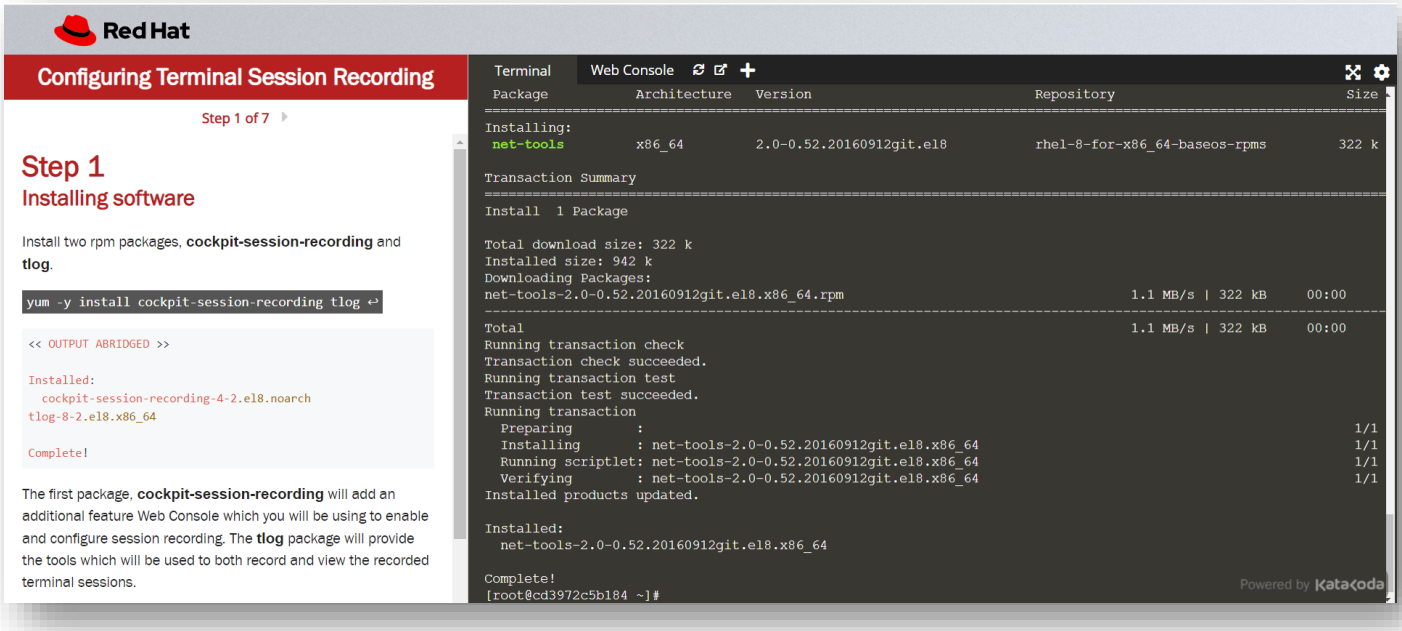
Terminal
Web Console
Server: 8.8.8.8
Address: 8.8.8.8#53
Non-authoritative answer:
Name: google.com
Address: 142.250.185.142
Name: google.com
Address: 2a00:1450:4001:80e::200e
[root@cd3972c5b184 ~]# dig google.com
; <<>> DiG 9.11.26-RedHat-9.11.26-4.el8_4 <<>> google.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 58594
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; QUESTION SECTION:
;google.com. IN A
;; ANSWER SECTION:
google.com. 300 IN A 142.250.185.78
;; Query time: 14 msec
;; SERVER: 8.8.8.8#53(8.8.8.8)
;; WHEN: Sat Aug 28 10:50:44 EDT 2021
;; MSG SIZE rcvd: 55
[root@cd3972c5b184 ~]#
Powered by Katacoda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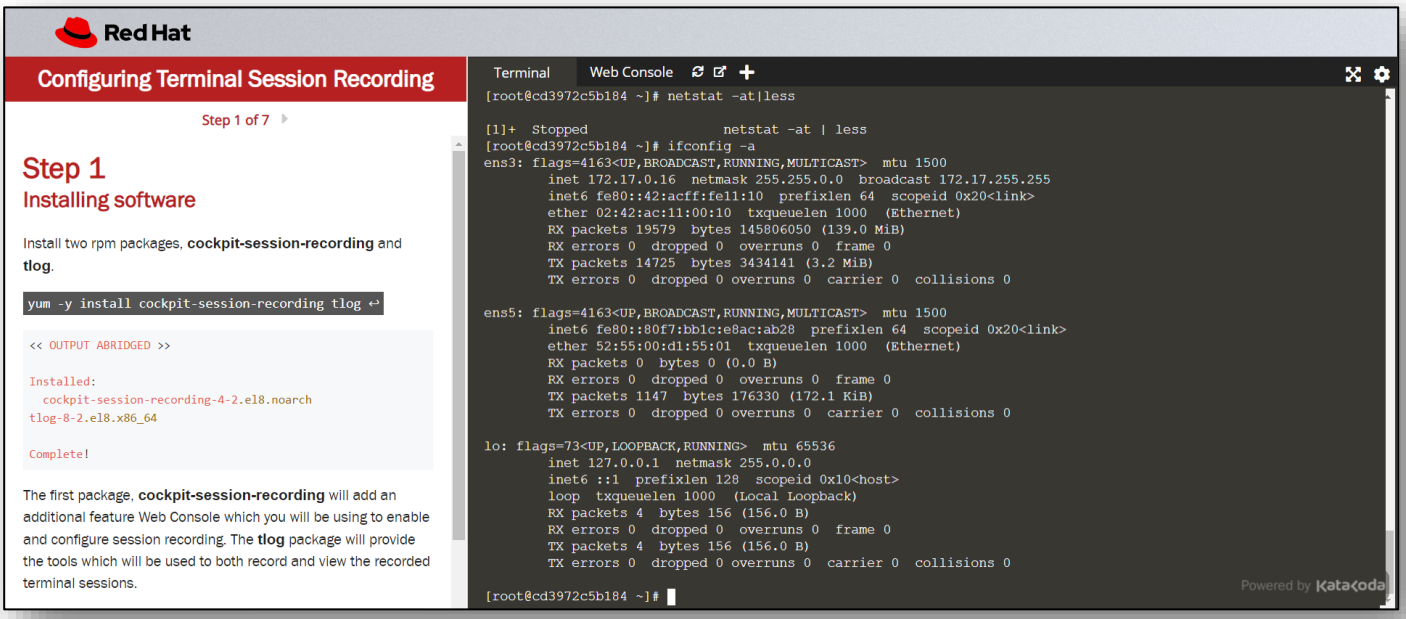
Terminal
Web Console
Package Architecture Version Repository Size
Installing:
net-tools x86_64 2.0-0.52.20160912git.el8 rhel-8-for-x86_64-baseos-rpms 322 k
Transaction Summary
Install 1 Package
Total download size: 322 k
Installed size: 942 k
Downloading Packages:
net-tools-2.0-0.52.20160912git.el8.x86_64.rpm 1.1 MB/s | 322 kB 00:00
Total 1.1 MB/s | 322 kB 00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing : 1/1
Installing : net-tools-2.0-0.52.20160912git.el8.x86_64 1/1
Running scriptlet: net-tools-2.0-0.52.20160912git.el8.x86_64 1/1
Verifying : net-tools-2.0-0.52.20160912git.el8.x86_64 1/1
Installed products updated.
Installed:
net-tools-2.0-0.52.20160912git.el8.x86_64
Complete!
[root@cd3972c5b184 ~]#
Powered by Katacoda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Install two rpm packages, cockpit-session-recording and tlog.
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Installed:
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Complete!
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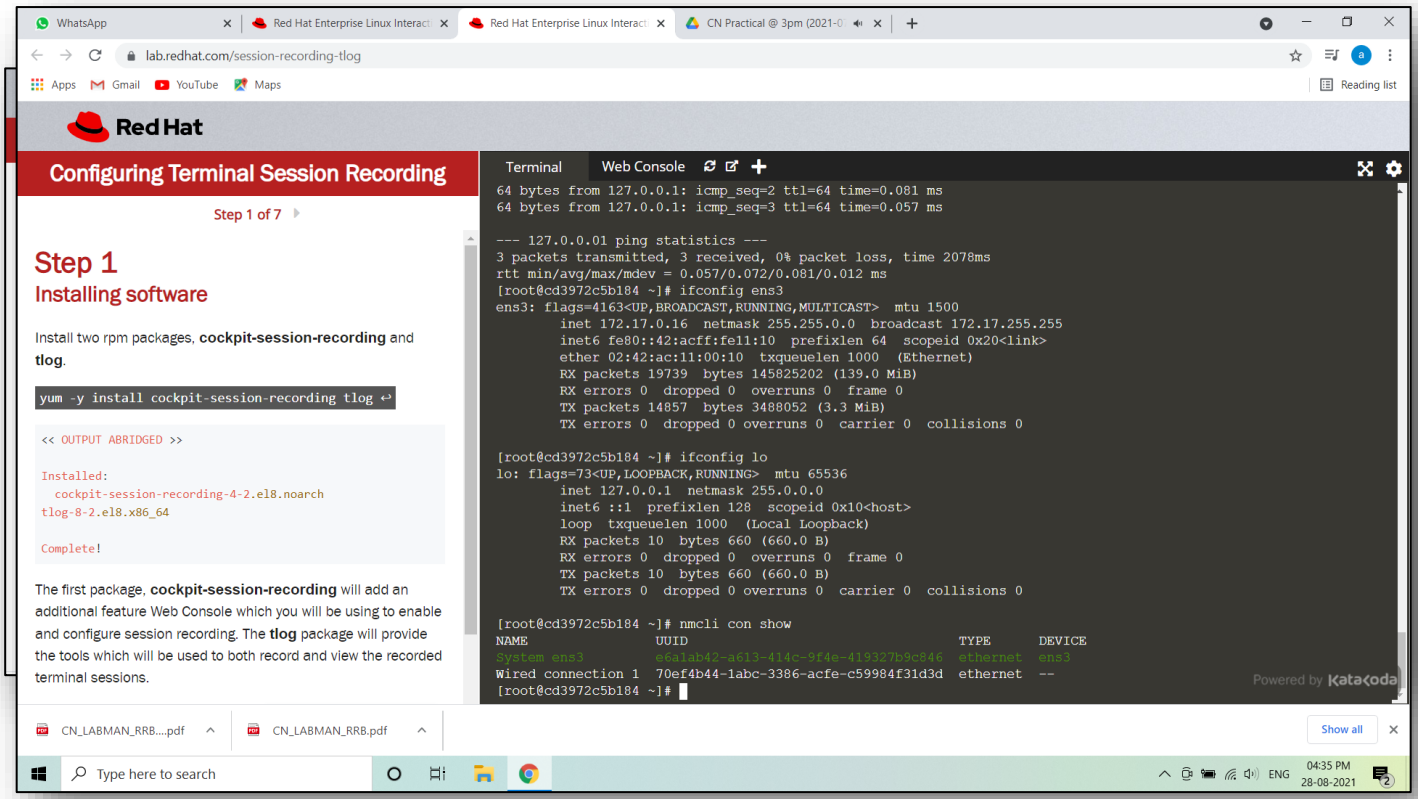
Terminal
Web Console
[root@cd3972c5b184 ~]# netstat -at|less
[1]+ Stopped netstat -at | less
[root@cd3972c5b184 ~]# ifconfig -a
ens3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 172.17.0.16 netmask 255.255.0.0 broadcast 172.17.255.255
inet6 fe80::42:acff:fe11:10 prefixlen 64 scopeid 0x20<link>
ether 02:42:ac:11:00:10 txqueuelen 1000 (Ethernet)
RX packets 19579 bytes 145806050 (139.0 MiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 14725 bytes 3434141 (3.2 MiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
ens5: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet6 fe80::80f7:bb1c:e8ac:ab28 prefixlen 64 scopeid 0x20<link>
ether 52:55:00:d1:55:01 txqueuelen 1000 (Ethernet)
RX packets 0 bytes 0 (0.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 1147 bytes 176330 (172.1 KiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 4 bytes 156 (156.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 4 bytes 156 (156.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
[root@cd3972c5b184 ~]#
Powered by Katacoda


WhatsApp
Red Hat Enterprise Linux Interact
Red Hat Enterprise Linux Interact
CN Practical @ 3pm (2021-0
lab.redhat.com/session-recording-tlog
Apps
Gmail
YouTube
Maps
Reading list
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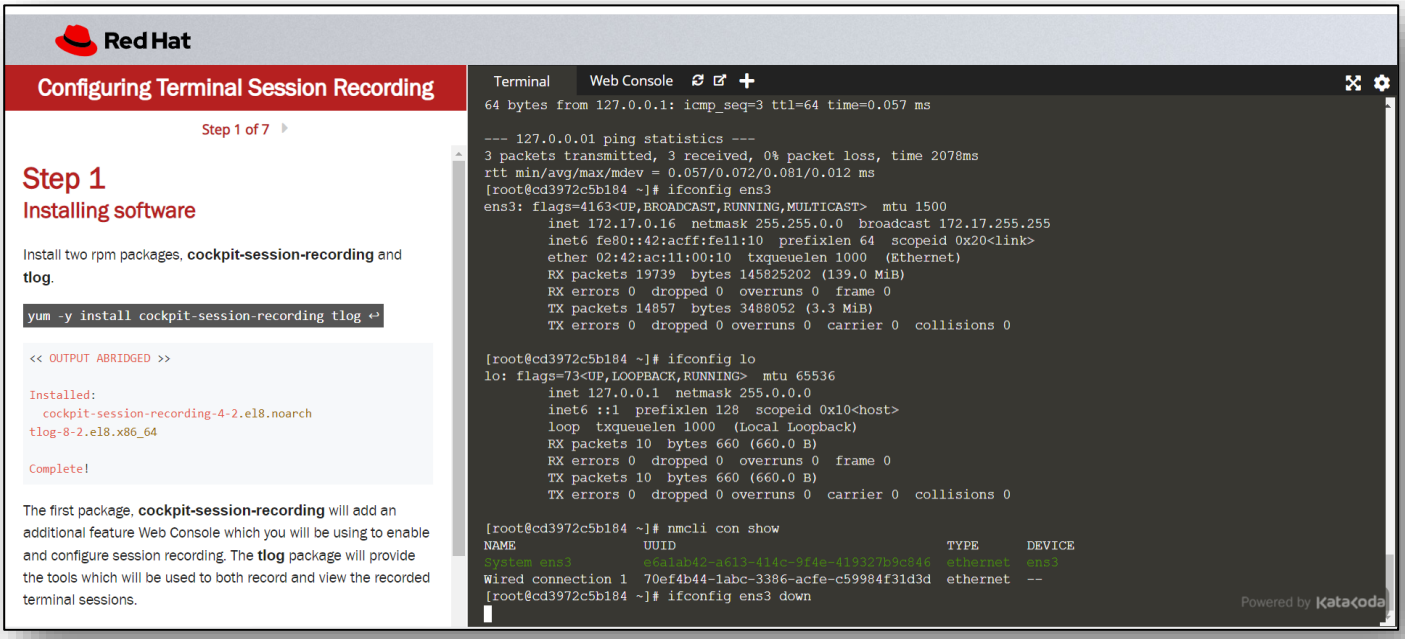
Terminal
Web Console
64 bytes from 127.0.0.1: icmp_seq=2 ttl=64 time=0.081 ms
64 bytes from 127.0.0.1: icmp_seq=3 ttl=64 time=0.057 ms
--- 127.0.0.01 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2078ms
rtt min/avg/max/mdev = 0.057/0.072/0.081/0.012 ms
[root@cd3972c5b184 ~]# ifconfig ens3
ens3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 172.17.0.16 netmask 255.255.0.0 broadcast 172.17.255.255
inet6 fe80::42:acff:fe11:10 prefixlen 64 scopeid 0x20<link>
ether 02:42:ac:11:00:10 txqueuelen 1000 (Ethernet)
RX packets 19739 bytes 145825202 (139.0 MiB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 14857 bytes 3488052 (3.3 MiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
[root@cd3972c5b184 ~]# ifconfig lo
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 10 bytes 660 (660.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 10 bytes 660 (660.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
[root@cd3972c5b184 ~]# nmcli con show
NAME UUID TYPE DEVICE
System ens3 e6a1ab42-a613-414c-9f4e-419327b9c846 ethernet ens3
Wired connection 1 70ef4b44-1abc-3386-acfe-c59984f31d3d ethernet --
[root@cd3972c5b184 ~]#
Powered by Katacoda
CN_LABMAN_RRB....pdf
CN_LABMAN_RRB.pdf
Show all
Type here to search
ENG
04:35 PM
28-08-2021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Terminal
Web Console
64 bytes from 127.0.0.1: icmp_seq=3 ttl=64 time=0.057 ms
--- 127.0.0.01 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2078ms
rtt min/avg/max/mdev = 0.057/0.072/0.081/0.012 ms
[root@cd3972c5b184 ~]# ifconfig ens3
ens3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 172.17.0.16 netmask 255.255.0.0 broadcast 172.17.255.255
inet6 fe80::42:acff:fe11:10 prefixlen 64 scopeid 0x20<link>
ether 02:42:ac:11:00:10 txqueuelen 1000 (Ethernet)
RX packets 19739 bytes 145825202 (139.0 MiB)
RX errors 0 dropped 0 overruns 0 frame 0
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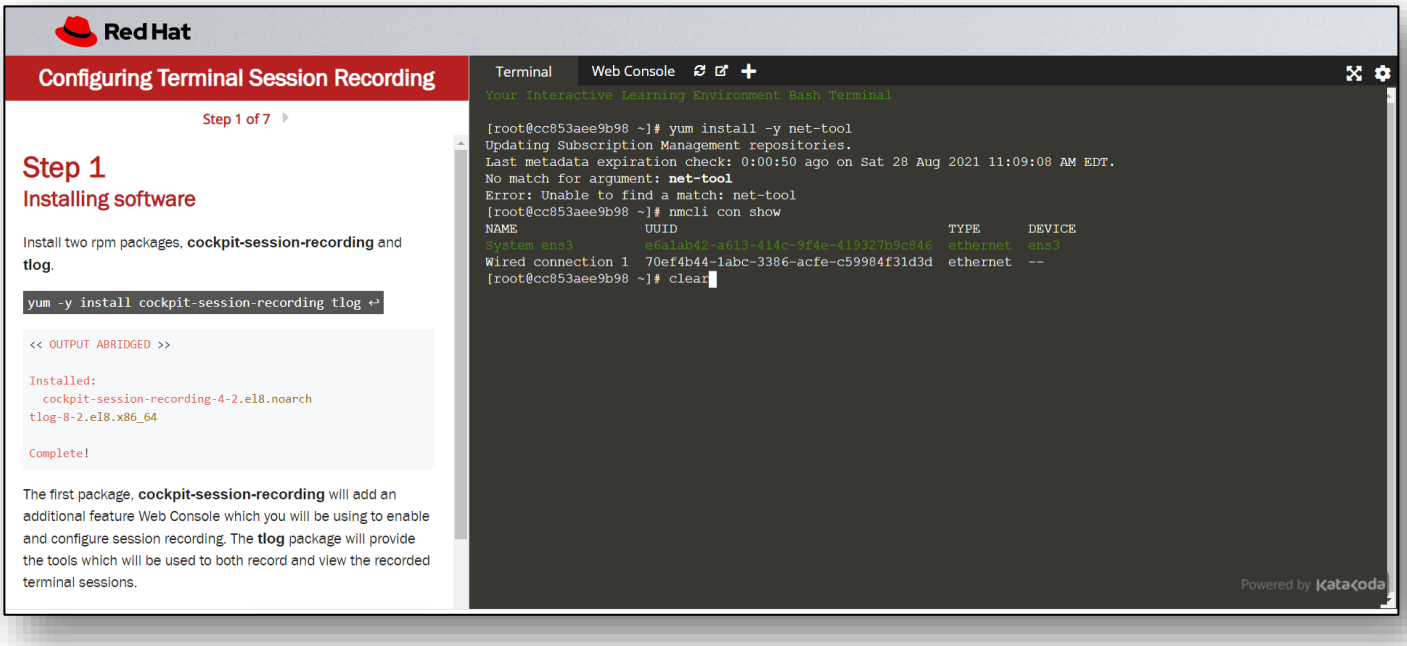
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
[root@cd3972c5b184 ~]# ifconfig lo
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 10 bytes 660 (660.0 B)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 10 bytes 660 (660.0 B)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
[root@cd3972c5b184 ~]# nmcli con show
NAME UUID TYPE DEVICE
System ens3 e6a1ab42-a613-414c-9f4e-419327b9c846 ethernet ens3
Wired connection 1 70ef4b44-1abc-3386-acfe-c59984f31d3d ethernet --
[root@cd3972c5b184 ~]# ifconfig ens3 down
Powered by Katacoda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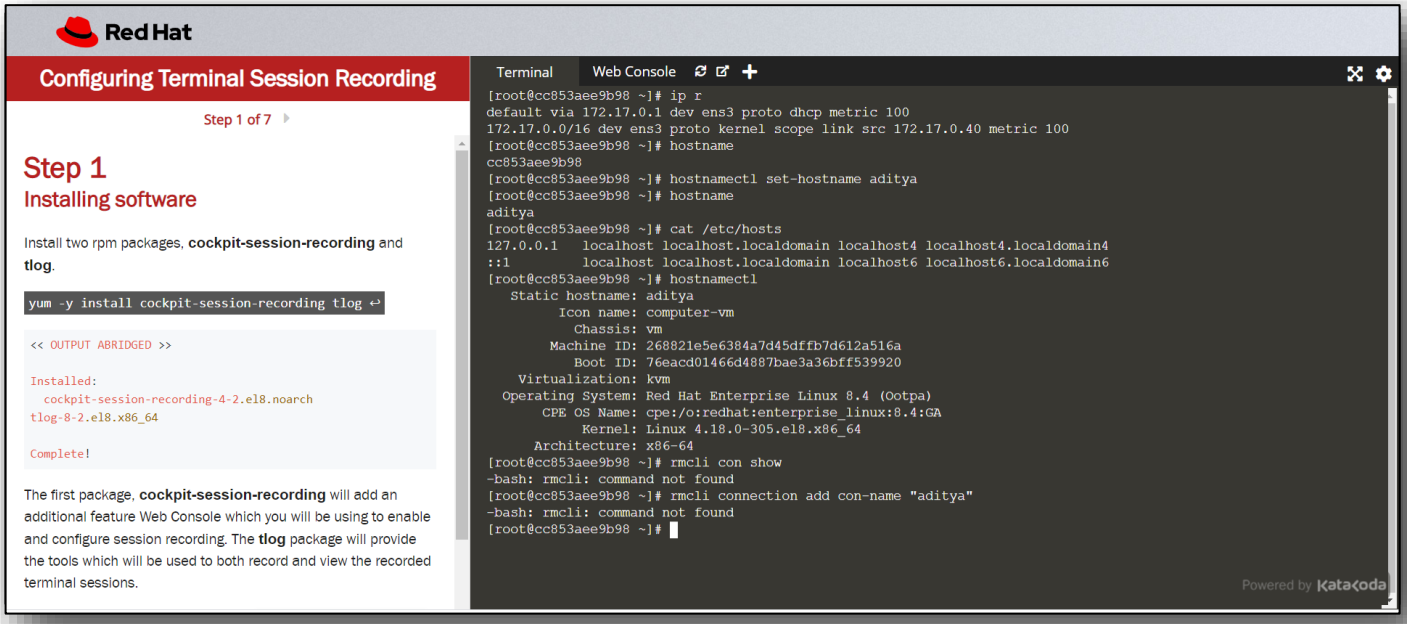
[root@cc853aee9b98 ~]# yum install -y net-tool
Updating Subscription Management repositories.
Last metadata expiration check: 0:00:50 ago on Sat 28 Aug 2021 11:09:08 AM EDT.
No match for argument: net-tool
Error: Unable to find a match: net-tool
[root@cc853aee9b98 ~]# nmcli con show
NAME UUID TYPE DEVICE
System ens3 e6a1ab42-a613-414c-9f4e-419327b9c846 ethernet ens3
Wired connection 1 70ef4b44-1abc-3386-acfe-c59984f31d3d ethernet --
[root@cc853aee9b98 ~]# clear
Powered by Katacoda



Conclusion: Thus the study use of basic networking commands in Linux (ping, traceroute, nslookup, netstat, hostname, ip, ifconfig, dig) is done using RHEL8 on Virtualbox/Vmware OR Online web virtual environment on Redhat Website.