MAWLANA BHASHANI SCIENCE AND TECHNOLOY UNIVERSITY

Santosh,Tangail – 1902

Course Title: Computer Networks

Lab report name: Linux networking tools.

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Submitted by,

Name: Pritom Saha

ID: IT – 17010

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Dept. of ICT, MBSTU

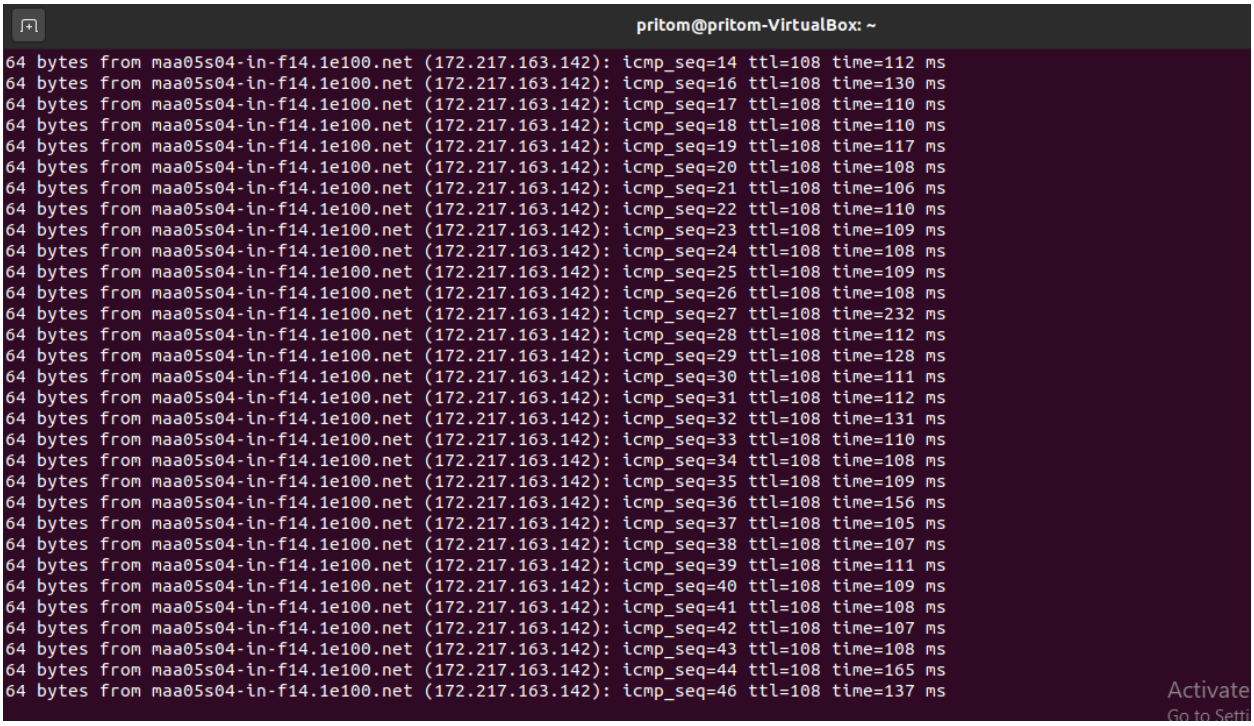
Submitted to,

Nazrul Islam

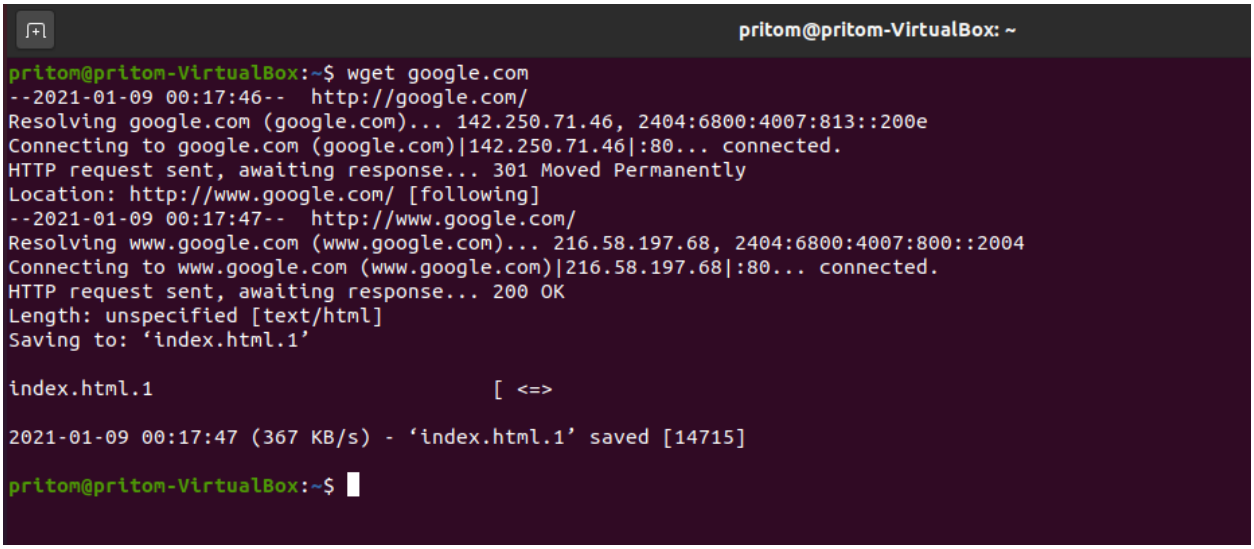
Assistant Professor

Dept. of ICT, MBSTU

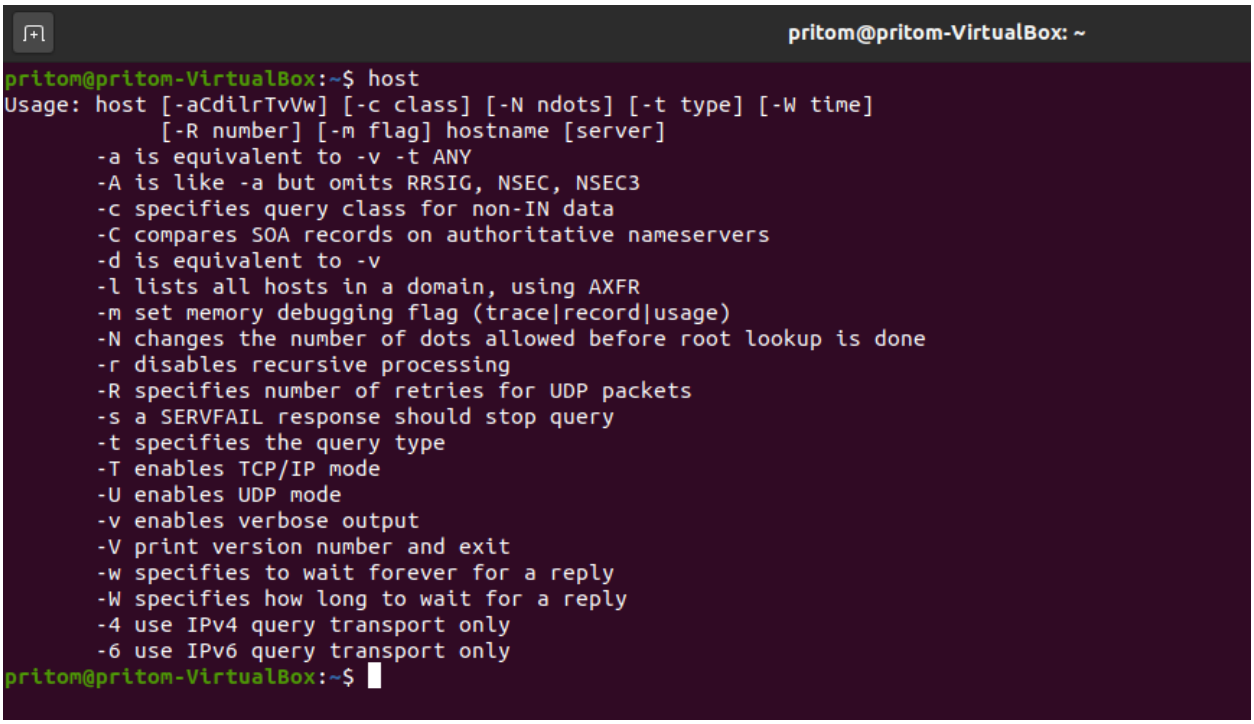
Ping: this command is used in checking whether the remote system is running or not. Ping command is used to detect a system is connected to system or not. If network firework don't grant the access then ping command will not work. Ping command sends an ICMP ECHO_REQUEST packet to the target host and waits to see if it replies. Ping runs in an infinite loop.



wget: It is a free utility which is used in non – interactive download from the world wide web. It supports HTTP, HTTPS, FTP protocols etc.



host: host command is used in getting address about system connected the network.It contains IP address, domain name address etc.



tc: tc is used to figure out traffic control in linux kernel.

<u>hostname</u>: this command is used to see the hostname of the computer. Host name is changeable but after changing the host we have to reboot the computer.

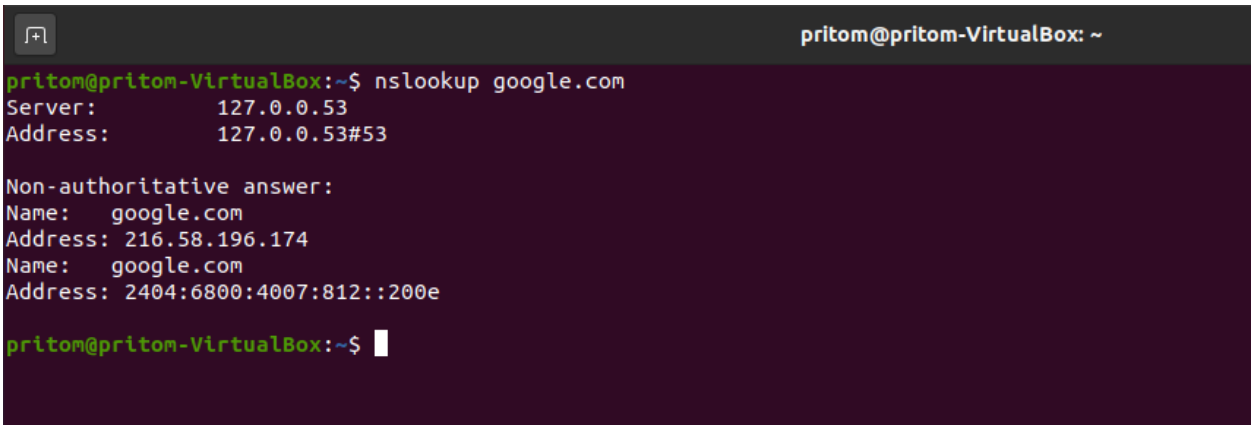
<u>dig</u>: Domain Information Groper or dig is a query DNS related information like a record, mx record etc. it is used to troubleshot DNS related query.

```
pritom@pritom-VirtualBox: ~
pritom@pritom-VirtualBox:~$ dig

; <<>> DiG 9.16.1-Ubuntu <<>>
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 4278
;; flags: qr rd ra; QUERY: 1, ANSWER: 13, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;.                              IN      NS

;; ANSWER SECTION:
.                       168206  IN      NS      a.root-servers.net.
.                       168206  IN      NS      j.root-servers.net.
.                       168206  IN      NS      k.root-servers.net.
.                       168206  IN      NS      f.root-servers.net.
.                       168206  IN      NS      d.root-servers.net.
.                       168206  IN      NS      m.root-servers.net.
.                       168206  IN      NS      g.root-servers.net.
.                       168206  IN      NS      e.root-servers.net.
.                       168206  IN      NS      i.root-servers.net.
.                       168206  IN      NS      c.root-servers.net.
.                       168206  IN      NS      h.root-servers.net.
.                       168206  IN      NS      b.root-servers.net.
.                       168206  IN      NS      l.root-servers.net.

;; Query time: 288 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: শনি জানু 09 20:51:58 +06 2021
;; MSG SIZE  rcvd: 239
```

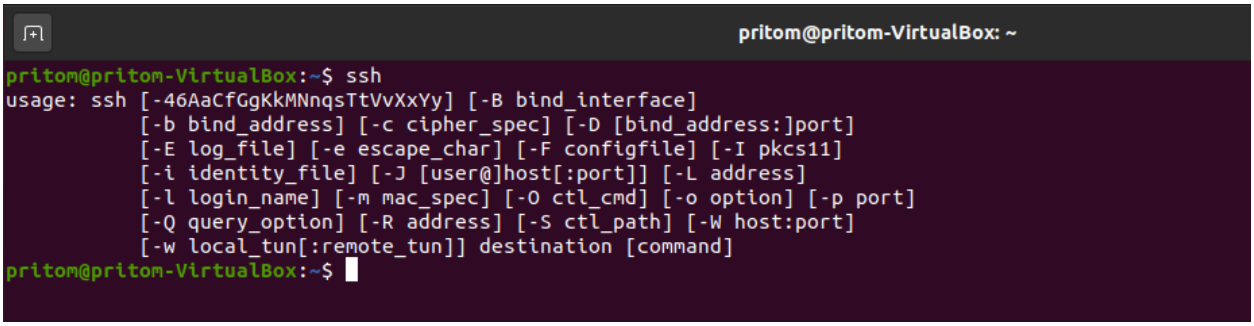
ip: The ip command is a powerful tool for configuring network interfaces that any Linux system administrator should know. It is used to bring interfaces up or down, assign and remove addresses and routes, manage ARP cache etc.

```
pritom@pritom-VirtualBox: ~
pritom@pritom-VirtualBox:~$ ip
Usage: ip [ OPTIONS ] OBJECT { COMMAND | help }
       ip [ -force ] -batch filename
where  OBJECT := { link | address | addrlabel | route | rule | neigh | ntable |
                   tunnel | tuntap | maddress | mroute | mrule | monitor | xfrm |
                   netns | l2tp | fou | macsec | tcp_metrics | token | netconf | ila |
                   vrf | sr | nexthop }
       OPTIONS := { -V[ersion] | -s[tatistics] | -d[etails] | -r[esolve] |
                    -h[uman-readable] | -iec | -j[son] | -p[retty] |
                    -f[amily] { inet | inet6 | mpls | bridge | link } |
                    -4 | -6 | -I | -D | -M | -B | -0 |
                    -l[oops] { maximum-addr-flush-attempts } | -br[ief] |
                    -o[neline] | -t[imestamp] | -ts[hort] | -b[atch] [filename] |
                    -rc[vbuf] [size] | -n[etns] name | -N[umeric] | -a[ll] |
                    -c[olor]}
pritom@pritom-VirtualBox:~$
```

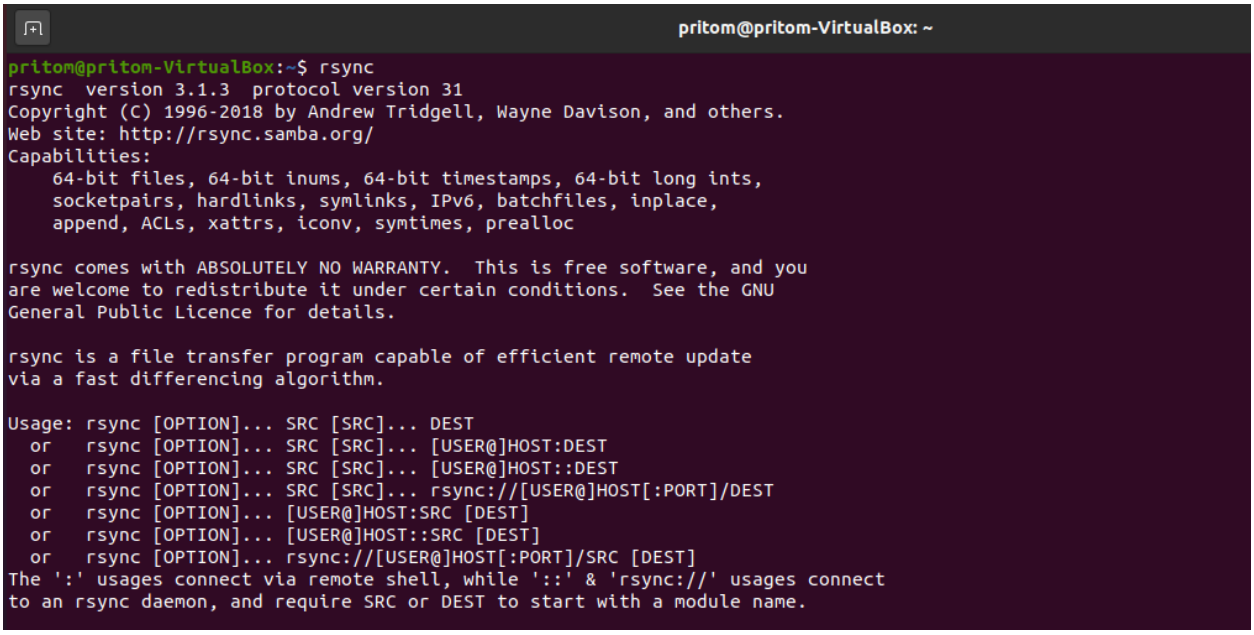
nslookup: nslookup command is used to find out DNS related query or testing and troubleshooting DNS server.



ssh: ssh or Secure Socket Shell command is used to connect with a remote computer or server by using text base interface. When we have to manage a computer remotely then ssh command is used frequently.



rsync: this command is used for synchronizing files and directories between two locations over a remote shell. It provides fast incremental file transfer by transferring only the differences between the source and the destination.


pritom@pritom-VirtualBox: ~
pritom@pritom-VirtualBox:~$ rsync
rsync version 3.1.3 protocol version 31
Copyright (C) 1996-2018 by Andrew Tridgell, Wayne Davison, and others.
Web site: http://rsync.samba.org/
Capabilities:
    64-bit files, 64-bit inums, 64-bit timestamps, 64-bit long ints,
    socketpairs, hardlinks, symlinks, IPv6, batchfiles, inplace,
    append, ACLs, xattrs, iconv, symtimes, prealloc
rsync comes with ABSOLUTELY NO WARRANTY. This is free software, and you
are welcome to redistribute it under certain conditions. See the GNU
General Public Licence for details.
rsync is a file transfer program capable of efficient remote update
via a fast differencing algorithm.
Usage: rsync [OPTION]... SRC [SRC]... DEST
  or   rsync [OPTION]... SRC [SRC]... [USER@]HOST:DEST
  or   rsync [OPTION]... SRC [SRC]... [USER@]HOST::DEST
  or   rsync [OPTION]... SRC [SRC]... rsync://[USER@]HOST[:PORT]/DEST
  or   rsync [OPTION]... [USER@]HOST:SRC [DEST]
  or   rsync [OPTION]... [USER@]HOST::SRC [DEST]
  or   rsync [OPTION]... rsync://[USER@]HOST[:PORT]/SRC [DEST]
The ':' usages connect via remote shell, while '::' & 'rsync://' usages connect
to an rsync daemon, and require SRC or DEST to start with a module name.