SQUID

Experiment: 5

Aim:

To create and configure Squid -proxy server

Description:

SQUID – PROXY SERVER

Squid is a full-featured web proxy cache server application which provides proxy and cache services for HyperText Transport Protocol (HTTP), File Transfer Protocol (FTP),and other popular network protocols. Squid can implement caching and proxying of Secure Sockets Layer (SSL) requests and caching of Domain Name Server (DNS) lookups, and perform transparent caching. Squid also supports a wide variety of caching protocols, such as Internet Cache Protocol (ICP), the HyperText Caching Protocol (HTCP), the Cache Array Routing Protocol (CARP), and the Web Cache Coordination Protocol (WCCP).
The Squid proxy cache server is an excellent solution to various proxy and caching server needs, and scales from the branch office to enterprise-level networks while providing extensive, granular access control mechanisms, and monitoring of critical parameters via the Simple Network Management Protocol (SNMP). When selecting a computer system for use as a dedicated Squid caching proxy server for many users ensure it is configured with a large amount of physical memory as Squid maintains an in-memory cache for increased performance.

Port No: 3128
Package name: squid
Configuration file: /etc/squid/squid.conf

Procedure:

1. At a terminal prompt, enter the following command to install the Squid server:

   $sudo apt install squid

2. Squid is configured by editing the directives contained within the /etc/squid/squid.conf configuration file.
3. Change the access as shown below:

acl localnet src 192.168.234.139(your ip address)

acl blocksite dstdomain "/etc/squid/blocksite"

http_access deny blocksite

http_access allow localnet

#http_access deny all

http_access allow all

4. To block access to the website we must configure using "/etc/squid/blocksite”

   we edit the file by running:

   $cd /etc/squid

   $sudo gedit blocksite

5. Add the websites to block:

   in this case, I am blocking youtube, facebook, google

6. To check the actual functioning of the proxy server go to the browser and click settings, search proxy in connection settings.

7. To configure Proxy access to the internet
8. Select Manual Proxy configuration

9. Type your HTTP Proxy(IP Address) and Port number as 3128.

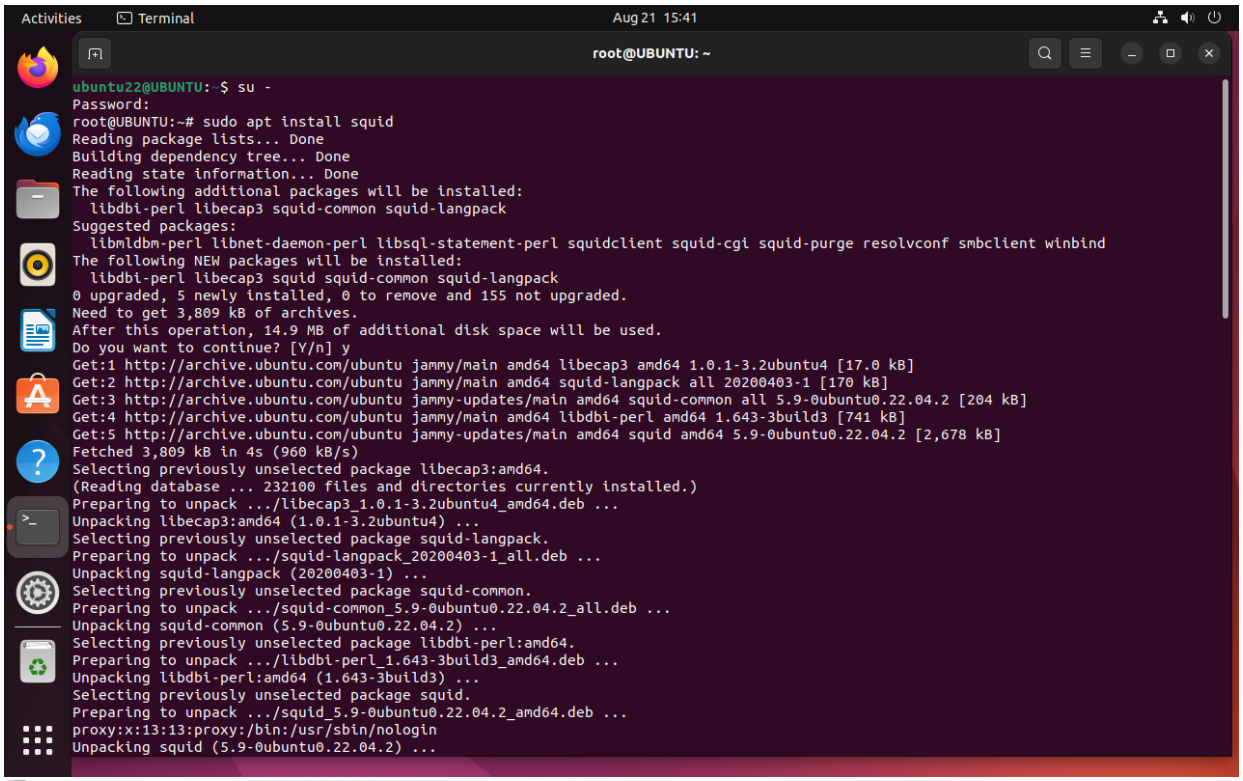
10. Select SOCKS v5

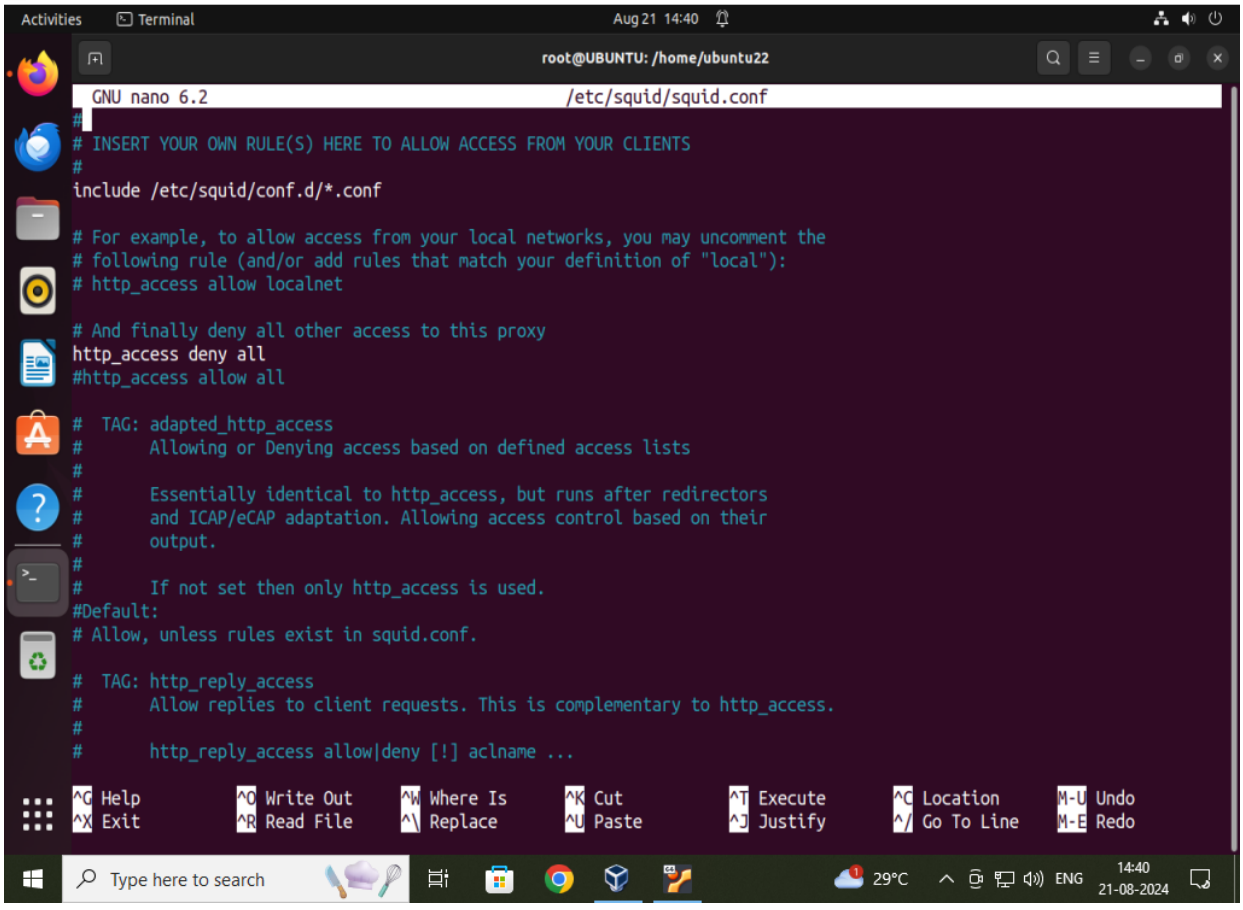
CONNECTING TO WEBSITE

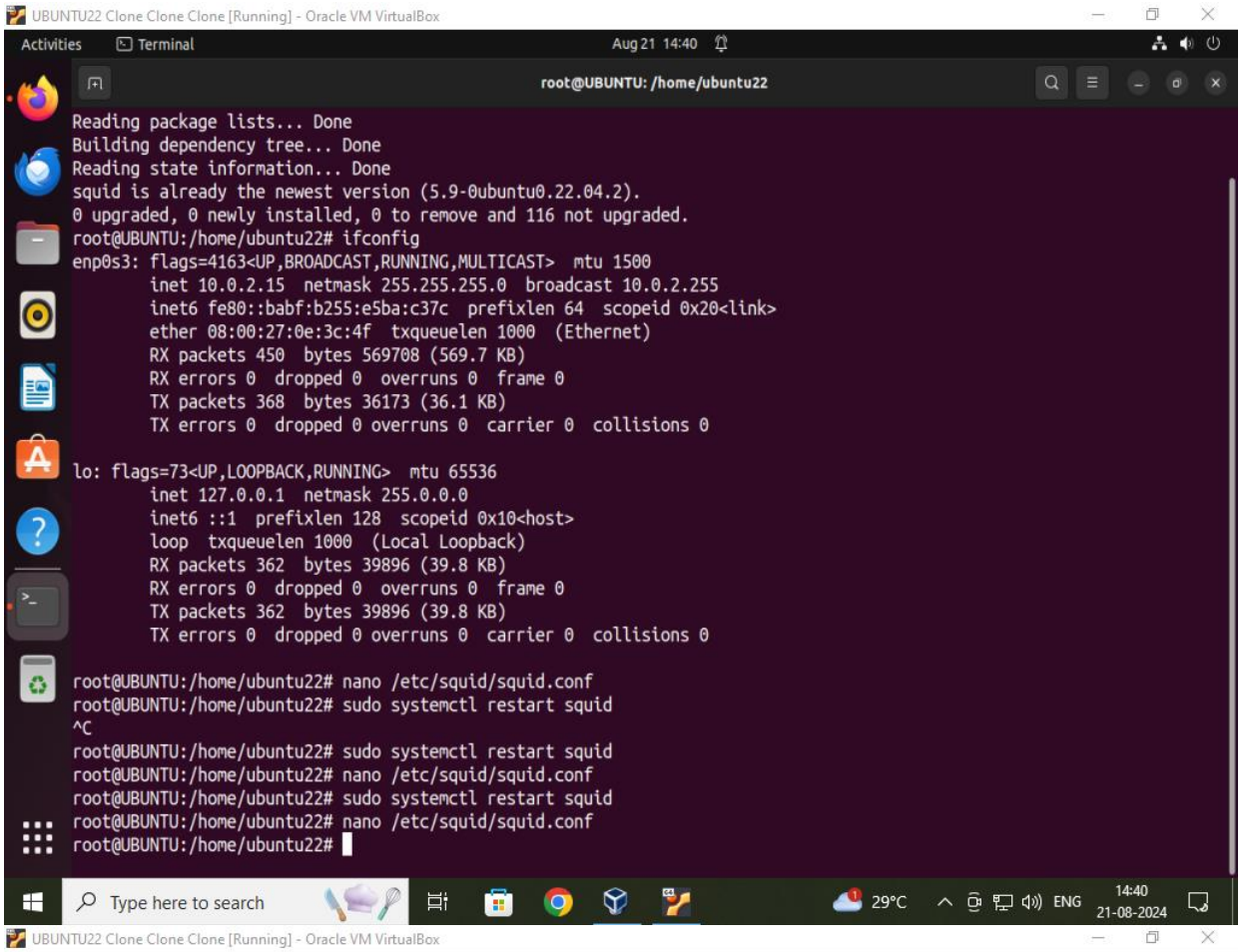
11. Search for the blocked websites

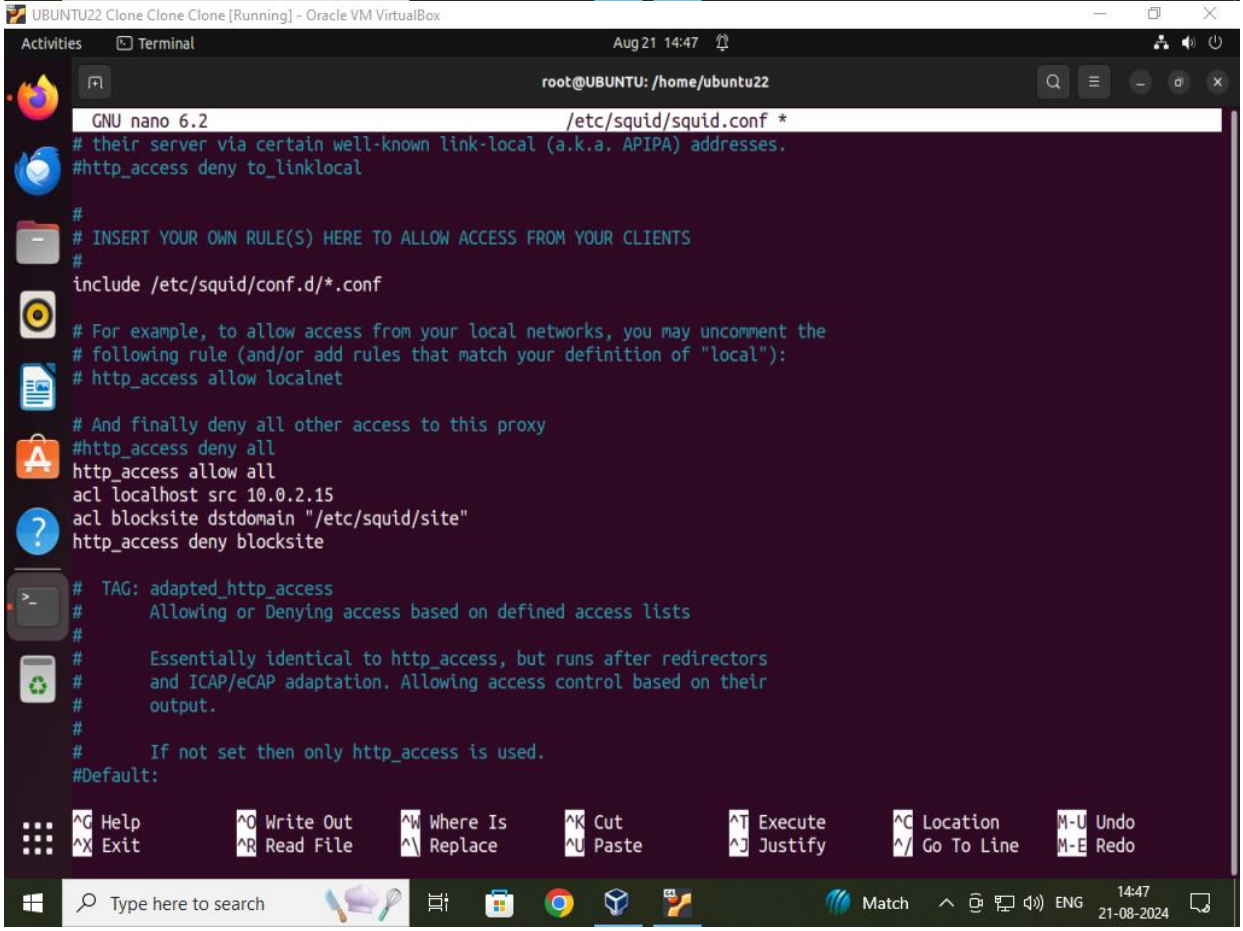
12. Access is denied to the above websites

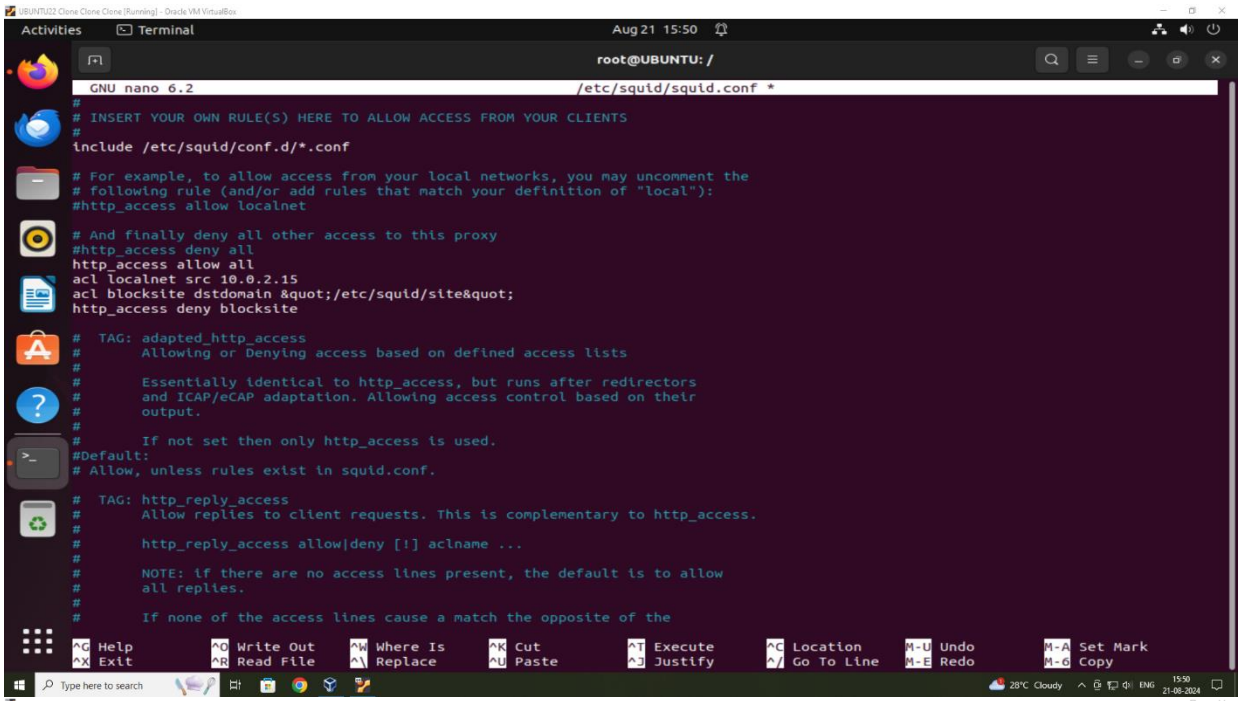
Result:

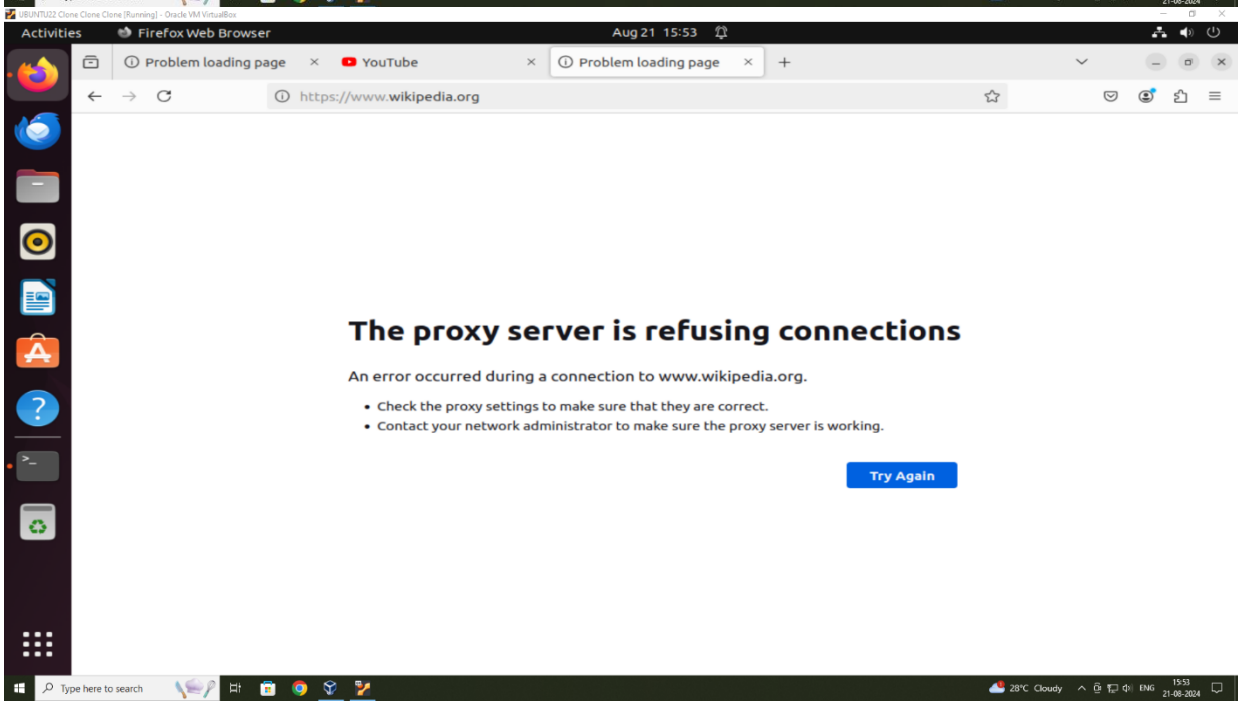

Activities
Terminal
Aug 21 15:41
root@UBUNTU: ~
ubuntu22@UBUNTU:~$ su -
Password:
root@UBUNTU:~# sudo apt install squid
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
libdbi-perl libecap3 squid-common squid-langpack
Suggested packages:
libmldbm-perl libnet-daemon-perl libsql-statement-perl squidclient squid-cgi squid-purge resolvconf smbclient winbind
The following NEW packages will be installed:
libdbi-perl libecap3 squid squid-common squid-langpack
0 upgraded, 5 newly installed, 0 to remove and 155 not upgraded.
Need to get 3,809 kB of archives.
After this operation, 14.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 libecap3 amd64 1.0.1-3.2ubuntu4 [17.0 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 squid-langpack all 20200403-1 [170 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 squid-common all 5.9-0ubuntu0.22.04.2 [204 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy/main amd64 libdbi-perl amd64 1.643-3build3 [741 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 squid amd64 5.9-0ubuntu0.22.04.2 [2,678 kB]
Fetched 3,809 kB in 4s (960 kB/s)
Selecting previously unselected package libecap3:amd64.
(Reading database ... 232100 files and directories currently installed.)
Preparing to unpack .../libecap3_1.0.1-3.2ubuntu4_amd64.deb ...
Unpacking libecap3:amd64 (1.0.1-3.2ubuntu4) ...
Selecting previously unselected package squid-langpack.
Preparing to unpack .../squid-langpack_20200403-1_all.deb ...
Unpacking squid-langpack (20200403-1) ...
Selecting previously unselected package squid-common.
Preparing to unpack .../squid-common_5.9-0ubuntu0.22.04.2_all.deb ...
Unpacking squid-common (5.9-0ubuntu0.22.04.2) ...
Selecting previously unselected package libdbi-perl:amd64.
Preparing to unpack .../libdbi-perl_1.643-3build3_amd64.deb ...
Unpacking libdbi-perl:amd64 (1.643-3build3) ...
Selecting previously unselected package squid.
Preparing to unpack .../squid_5.9-0ubuntu0.22.04.2_amd64.deb ...
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
Unpacking squid (5.9-0ubuntu0.22.04.2) ...

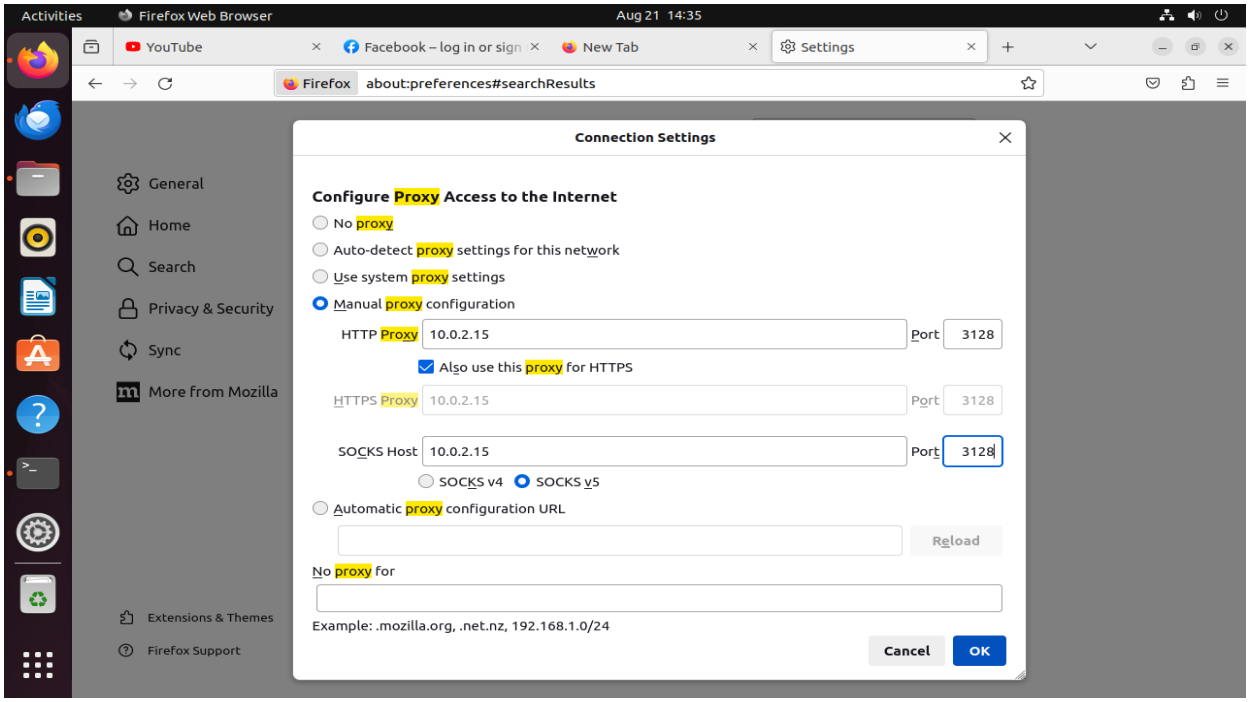

UBUNTU22 Clone Clone Clone [Running] - Oracle VM VirtualBox
Activities
Terminal
Aug 21 14:40
root@UBUNTU: /home/ubuntu22
GNU nano 6.2
/etc/squid/squid.conf
#
INSERT YOUR OWN RULE(S) HERE TO ALLOW ACCESS FROM YOUR CLIENTS
#
include /etc/squid/conf.d/*.conf
For example, to allow access from your local networks, you may uncomment the
following rule (and/or add rules that match your definition of "local"):
http_access allow localnet
And finally deny all other access to this proxy
http_access deny all
#http_access allow all
TAG: adapted_http_access
Allowing or Denying access based on defined access lists
#
Essentially identical to http_access, but runs after redirectors
and ICAP/eCAP adaptation. Allowing access control based on their
output.
#
If not set then only http_access is used.
#Default:
Allow, unless rules exist in squid.conf.
TAG: http_reply_access
Allow replies to client requests. This is complementary to http_access.
#
http_reply_access allow|deny [!] aclname ...
^G Help
^X Exit
^O Write Out
^R Read File
^W Where Is
^\ Replace
^K Cut
^U Paste
^T Execute
^J Justify
^C Location
^/ Go To Line
M-U Undo
M-E Redo
Type here to search
29°C
ENG
14:40
21-08-2024


UBUNTU22 Clone Clone Clone [Running] - Oracle VM VirtualBox
Activities
Terminal
Aug 21 14:40
root@UBUNTU: /home/ubuntu22
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
squid is already the newest version (5.9-0ubuntu0.22.04.2).
0 upgraded, 0 newly installed, 0 to remove and 116 not upgraded.
root@UBUNTU:/home/ubuntu22# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
inet6 fe80::babf:b255:e5ba:c37c prefixlen 64 scopeid 0x20<link>
ether 08:00:27:0e:3c:4f txqueuelen 1000 (Ethernet)
RX packets 450 bytes 569708 (569.7 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 368 bytes 36173 (36.1 KB)
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 362 bytes 39896 (39.8 KB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 362 bytes 39896 (39.8 KB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
root@UBUNTU:/home/ubuntu22# nano /etc/squid/squid.conf
root@UBUNTU:/home/ubuntu22# sudo systemctl restart squid
^C
root@UBUNTU:/home/ubuntu22# sudo systemctl restart squid
root@UBUNTU:/home/ubuntu22# nano /etc/squid/squid.conf
root@UBUNTU:/home/ubuntu22# sudo systemctl restart squid
root@UBUNTU:/home/ubuntu22# nano /etc/squid/squid.conf
root@UBUNTU:/home/ubuntu22#
Type here to search
29°C
ENG
14:40
21-08-2024


UBUNTU22 Clone Clone Clone [Running] - Oracle VM VirtualBox
Activities
Terminal
Aug 21 14:47
root@UBUNTU: /home/ubuntu22
GNU nano 6.2 /etc/squid/squid.conf *
their server via certain well-known link-local (a.k.a. APIPA) addresses.
#http_access deny to_linklocal
#
INSERT YOUR OWN RULE(S) HERE TO ALLOW ACCESS FROM YOUR CLIENTS
#
include /etc/squid/conf.d/*.conf
For example, to allow access from your local networks, you may uncomment the
following rule (and/or add rules that match your definition of "local"):
http_access allow localnet
And finally deny all other access to this proxy
#http_access deny all
http_access allow all
acl localhost src 10.0.2.15
acl blocksite dstdomain "/etc/squid/site"
http_access deny blocksite
TAG: adapted_http_access
Allowing or Denying access based on defined access lists
#
Essentially identical to http_access, but runs after redirectors
and ICAP/eCAP adaptation. Allowing access control based on their
output.
#
If not set then only http_access is used.
#Default:
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo
Type here to search
Match
ENG
14:47
21-08-2024


Activities
Terminal
Aug 21 15:50
root@UBUNTU: /
GNU nano 6.2 /etc/squid/squid.conf *
INSERT YOUR OWN RULE(S) HERE TO ALLOW ACCESS FROM YOUR CLIENTS
include /etc/squid/conf.d/*.conf
For example, to allow access from your local networks, you may uncomment the
following rule (and/or add rules that match your definition of "local"):
#http_access allow localnet
And finally deny all other access to this proxy
#http_access deny all
http_access allow all
acl localnet src 10.0.2.15
acl blocksite dstdomain "/etc/squid/site"
http_access deny blocksite
TAG: adapted_http_access
Allowing or Denying access based on defined access lists
Essentially identical to http_access, but runs after redirectors
and ICAP/eCAP adaptation. Allowing access control based on their
output.
If not set then only http_access is used.
#Default:
Allow, unless rules exist in squid.conf.
TAG: http_reply_access
Allow replies to client requests. This is complementary to http_access.
http_reply_access allow|deny [!] aclname ...
NOTE: if there are no access lines present, the default is to allow
all replies.
If none of the access lines cause a match the opposite of the
^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo M-A Set Mark
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo M-6 Copy
Type here to search
28°C Cloudy
ENG
15:50
21-08-2024


Activities
Firefox Web Browser
Aug 21 15:53
Problem loading page
YouTube
Problem loading page
https://www.wikipedia.org
The proxy server is refusing connections
An error occurred during a connection to www.wikipedia.org.
Check the proxy settings to make sure that they are correct.
Contact your network administrator to make sure the proxy server is working.
Try Again
Type here to search
28°C Cloudy
ENG
15:53
21-08-2024



All the commands have been executed and the output has been obtained successfully.