

# LAPORAN JOB SHET 6

## Praktikum Network Security Authentikasi

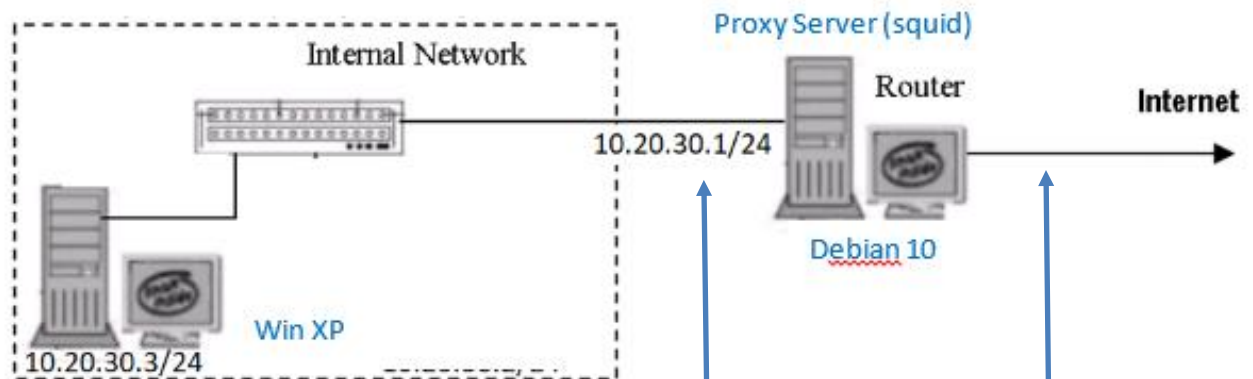
NAMA : Nasta Ainun Apriliani  
ASAL SEKOLAH : SMKN 1 CIMAHI  
KELAS : XII SIJA A

Buat Laporan resmi dari seluruh kegiatan percobaan. Lengkapi dengan :

1. Nama dan Asal Sekolah yang Jelas
2. Lakukan percobaan sesuai urutan seperti percobaan diatas. !

### Topologi :

\*\*\* Berikut ini topologi yang sudah disesuaikan dengan soal dan praktikum yang dilakukan !



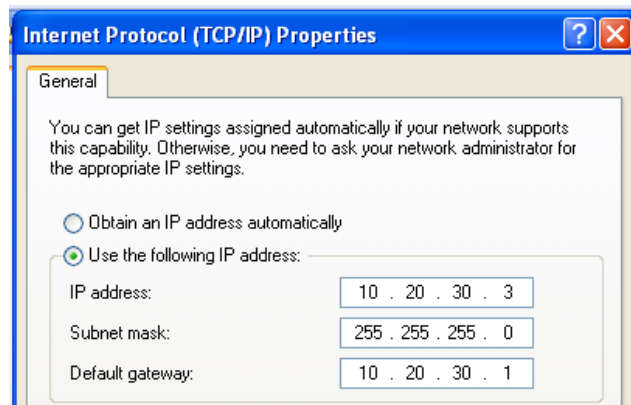
### Device :

Router & Proxy Server Squid : OS Debian 10

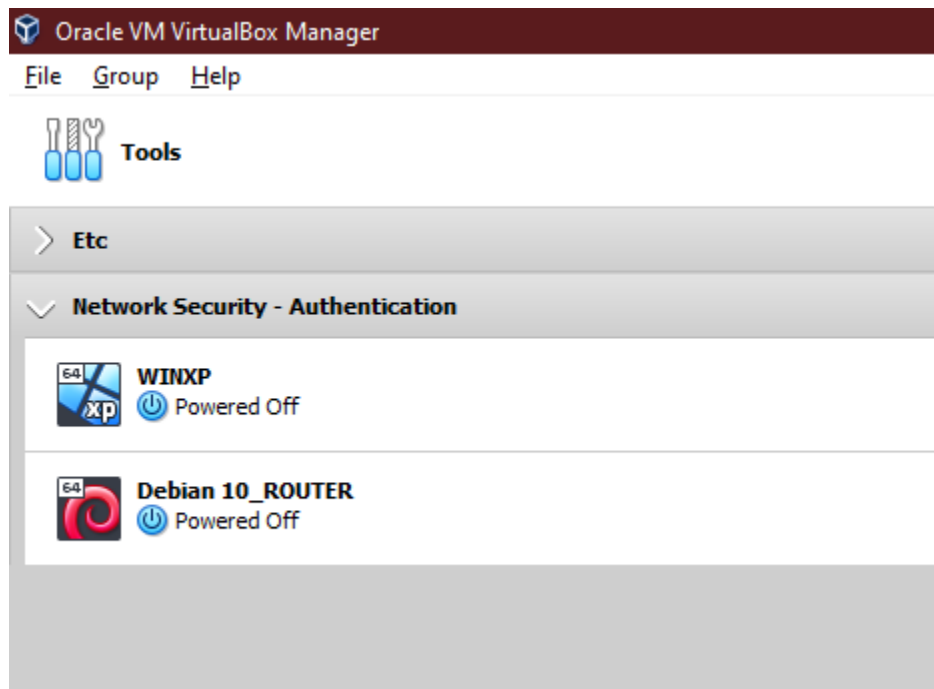
```
iface enp0s3 inet static
    address 192.168.43.150
    netmask 255.255.255.0
    gateway 192.168.43.1
    dns-nameservers 192.168.43.149

auto enp0s8
iface enp0s8 inet static
    address 10.20.30.1
    netmask 255.255.255.0
```

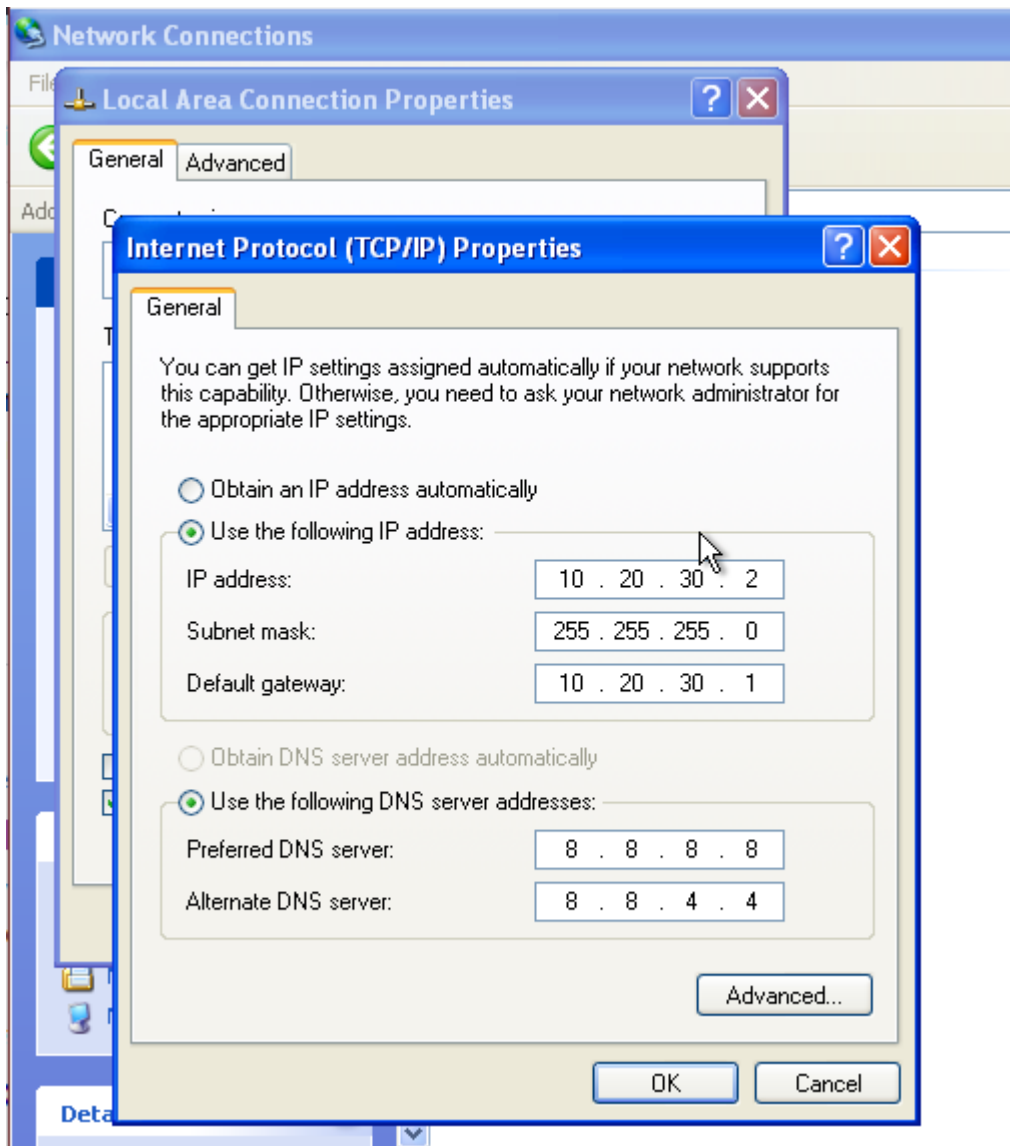
Client : OS Windows XP



Screen capture device yang akan digunakan:



Screen capture hasil konfigurasi IP Win XP:



Instal paket squid Router/Proxy Squid Server

# apt-get install squid

**CAPTURED :**

```
File Edit View Search Terminal Help
root@debian:~# apt-get install squid
Reading package lists... Done
Building dependency tree
Reading state information... Done
squid is already the newest version (4.6-1+deb10u5).
0 upgraded, 0 newly installed, 0 to remove and 77 not upgraded.
root@debian:~#
```

Pastikan **tidak ada Error**, periksa dengan perintah : **# squid -z**

**CAPTURED :**

```
root@debian:~# sudo squid -z
2021/04/21 13:49:37| FATAL: Squid is already running: Found fresh instance PID
file (/var/run/squid.pid) with PID 2073
exception location: Instance.cc(121) ThrowIfAlreadyRunningWith
```

Pastikan **Status Squid sudah aktif ( Hijau )** dengan perintah :

**CAPTURED :**

```
File Edit View Search Terminal Help
● squid.service - Squid Web Proxy Server
   Loaded: loaded (/lib/systemd/system/squid.service; enabled; vendor pr
   Active: active (running) since Wed 2021-04-21 13:38:54 WIB; 9min ago
     Docs: man:squid(8)
  Main PID: 2073 (squid)
    Tasks: 4 (limit: 1138)
   Memory: 10.8M
    CGroup: /system.slice/squid.service
            └─2073 /usr/sbin/squid -sYC
              └─2075 (squid-1) --kid squid-1 -sYC
                └─2096 (logfile-daemon) /var/log/squid/access.log
                  └─2102 (pinger)

Apr 21 13:38:56 debian squid[2075]: Finished loading MIME types and icon
Apr 21 13:38:56 debian squid[2075]: HTCP Disabled.
Apr 21 13:38:56 debian squid[2075]: Pinger socket opened on FD 14
Apr 21 13:38:56 debian squid[2075]: Squid plugin modules loaded: 0
Apr 21 13:38:56 debian squid[2075]: Adaptation support is off.
Apr 21 13:38:56 debian squid[2075]: Accepting HTTP Socket connections at
Apr 21 13:38:57 debian squid[2075]: storeLateRelease: released 0 objects
Apr 21 13:48:06 debian systemd[1]: /lib/systemd/system/squid.service:7:
Apr 21 13:48:07 debian systemd[1]: /lib/systemd/system/squid.service:7:
Apr 21 13:48:08 debian systemd[1]: /lib/systemd/system/squid.service:7:
lines 1-23
```

Konfigurasi **AUTENTIKASI** pada script squid dengan perintah :

**# nano /etc/squid/squid.conf**

**CAPTURED :**

```
File Edit View Search Terminal Help
GNU nano 3.2 squid.conf

# WELCOME TO SQUID 4.6
# -----
#
# This is the documentation for the Squid configuration file.
# This documentation can also be found online at:
#   http://www.squid-cache.org/Doc/config/
#
# You may wish to look at the Squid home page and wiki for the
# FAQ and other documentation:
#   http://www.squid-cache.org/
#   http://wiki.squid-cache.org/SquidFaq
#   http://wiki.squid-cache.org/ConfigExamples
#
# This documentation shows what the defaults for various directives
# happen to be. If you don't need to change the default, you should
# leave the line out of your squid.conf in most cases.
#
# In some cases "none" refers to no default setting at all,
# while in other cases it refers to the value of the option

^G Get Help  ^O Write Out ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos
^X Exit      ^R Read File ^\ Replace   ^U Uncut Text ^T To Spell  ^_ Go To Line
```

Lakukan Tuning (penyesuaian) Script pada Squid

Hilangkan tanda # dan Script menjadi seperti ini :

**CAPTURED :**

```
File Edit View Search Terminal Help
GNU nano 3.2 squid.conf

##auth_param digest realm Squid proxy-caching web server
##auth_param digest nonce_garbage_interval 5 minutes
##auth_param digest nonce_max_duration 30 minutes
##auth_param digest nonce_max_count 50
##
##auth_param ntlm program <uncomment and complete this line to activate>
##auth_param ntlm children 20 startup=0 idle=1
##auth_param ntlm keep_alive on
##
auth_param basic program /usr/lib/squid3/ncsa_auth /etc/squid/squid_passwd
auth_param basic children 5 startup=5 idle=1
auth_param basic realm Squid proxy-caching web server
auth_param basic credentialsttl 2 hours
#Default:
# none

# TAG: authenticate_cache_garbage_interval
#   The time period between garbage collection across the username cache.
#   This is a trade-off between memory utilization (long intervals - say
```

Tambahkan Script seperti ini :

**CAPTURED :**

```
File Edit View Search Terminal Help
GNU nano 3.2 squid.conf

acl Safe_ports port 21      # ftp
acl Safe_ports port 443     # https
acl Safe_ports port 70      # gopher
acl Safe_ports port 210     # wais
acl Safe_ports port 1025-65535 # unregistered ports
acl Safe_ports port 280     # http-mgmt
acl Safe_ports port 488     # gss-http
acl Safe_ports port 591     # filemaker
acl Safe_ports port 777     # multiling http
acl CONNECT method CONNECT
acl autentikasi proxy_auth REQUIRED "/etc/squid/squid_passwd"
http_access allow autentikasi

# TAG: proxy_protocol_access
# Determine which client proxies can be trusted to provide correct
# information regarding real client IP address using PROXY protocol.
#
# Requests may pass through a chain of several other proxies
# before reaching us. The original source details may be sent in:

^G Get Help  ^O Write Out ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos
^X Exit      ^R Read File ^\ Replace   ^U Uncut Text ^T To Spell  ^ Go To Line
```

Konfigurasi Script Visible Hostname seperti ini :

**CAPTURED :**

```
File Edit View Search Terminal Help
GNU nano 3.2 squid.conf

# user account for squid with UID/GID matching system policies.
#Default:
# Use system group memberships of the cache_effective_user account

# TAG: httpd_suppress_version_string on|off
# Suppress Squid version string info in HTTP headers and HTML error pages.
#Default:
# httpd_suppress_version_string off

# TAG: visible_hostname
# If you want to present a special hostname in error messages, etc,
# define this. Otherwise, the return value of gethostname()
# will be used. If you have multiple caches in a cluster and
# get errors about IP-forwarding you must set them to have individual
# names with this setting.
#Default:
# Automatically detect the system host name
visible_hostname localhost
# TAG: unique_hostname

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

Konfigurasi Script Port tetap 3128 :

**CAPTURED :**

```
File Edit View Search Terminal Help
GNU nano 3.2 squid.conf

# timeout the time before giving up.
#
# require-proxy-header
# Require PROXY protocol version 1 or 2 connections.
# The proxy_protocol_access is required to whitelist
# downstream proxies which can be trusted.
#
# If you run Squid on a dual-homed machine with an internal
# and an external interface we recommend you to specify the
# internal address:port in http_port. This way Squid will only be
# visible on the internal address.
#
# Squid normally listens to port 3128
http_port 3128
# TAG: https_port
# Usage: [ip:]port [mode] tls-cert=certificate.pem [options]

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line
```

SAVE dengan perintah ^X Save : yes

#### CAPTURED :

```
Save modified buffer? (Answering "No" will DISCARD changes.)
Y Yes
N No      ^C Cancel
```

RESTART Squid dengan perintah: # service squid restart

#### CAPTURED :

```
root@debian:/etc/squid# sudo systemctl restart squid
root@debian:/etc/squid# sudo systemctl status squid
● squid.service - Squid Web Proxy Server
   Loaded: loaded (/lib/systemd/system/squid.service; enabled; vendor preset: enable
d
   Active: active (running) since Wed 2021-04-21 14:14:38 WIB; 2s ago
     Docs: man:squid(8)
   Process: 3768 ExecStartPre=/usr/sbin/squid --foreground -z (code=exited, status=0/S
S
   Process: 3771 ExecStart=/usr/sbin/squid -sYC (code=exited, status=0/SUCCESS)
  Main PID: 3772 (squid)
    Tasks: 9 (limit: 1138)
   Memory: 17.8M
    CGroup: /system.slice/squid.service
            └─3772 /usr/sbin/squid -sYC
              └─3774 (squid-1) --kid squid-1 -sYC
                ├─3775 (ncsa_auth) /etc/squid/squid_passwd
                ├─3776 (ncsa_auth) /etc/squid/squid_passwd
                ├─3777 (ncsa_auth) /etc/squid/squid_passwd
                ├─3778 (ncsa_auth) /etc/squid/squid_passwd
                ├─3779 (ncsa_auth) /etc/squid/squid_passwd
                └─3780 (logfile-daemon) /var/log/squid/access.log
                  └─3781 (pinger)

Apr 21 14:14:38 debian squid[3774]: Max Swap size: 0 KB
```

Jika ingin memastikan, periksa kembali Squid apakah ada Error dan tetap aktif tidanya.

**Konfigurasi untuk membuat Username dan Password untuk keperluan AUTENTIKASI**

#### CAPTURED :

```
root@debian:/etc/squid# touch /etc/squid/squid_passwd
root@debian:/etc/squid# htpasswd /etc/squid/squid_passwd nizen
New password:
Re-type new password:
Adding password for user nizen
root@debian:/etc/squid# sudo systemctl restart squid
root@debian:/etc/squid# sudo systemctl status squid
```



Install apache2 pada Router/Proxy Squid Server

# apt-get install apache2-utils

**CAPTURED :**

```
root@debian:/etc/squid# sudo apt-get install apache2 apache2-utils
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.38-3+deb10u4).
apache2-utils is already the newest version (2.4.38-3+deb10u4).
0 upgraded, 0 newly installed, 0 to remove and 77 not upgraded.
root@debian:/etc/squid#
```

Buat Username untuk nanti masuk melalui autentikasi dengan perintah :

# htpasswd /etc/squid/squid\_passwd antoni

Username : nama anda

Password : kelas anda

**CAPTURED :**

```
root@debian:/etc/squid# htpasswd /etc/squid/squid_passwd nasta
New password:
Re-type new password:
Adding password for user nasta
```

Dilanjutkan perintah :

# touch /etc/squid/squid\_passwd

```
root@debian:/etc/squid# touch /etc/squid/squid_passwd
```

# chown proxy /etc/squid/squid\_passwd

```
root@debian:/etc/squid# chown proxy /etc/squid/squid_passwd
```

RESTART Squid : # service squid restart

**CAPTURED :**

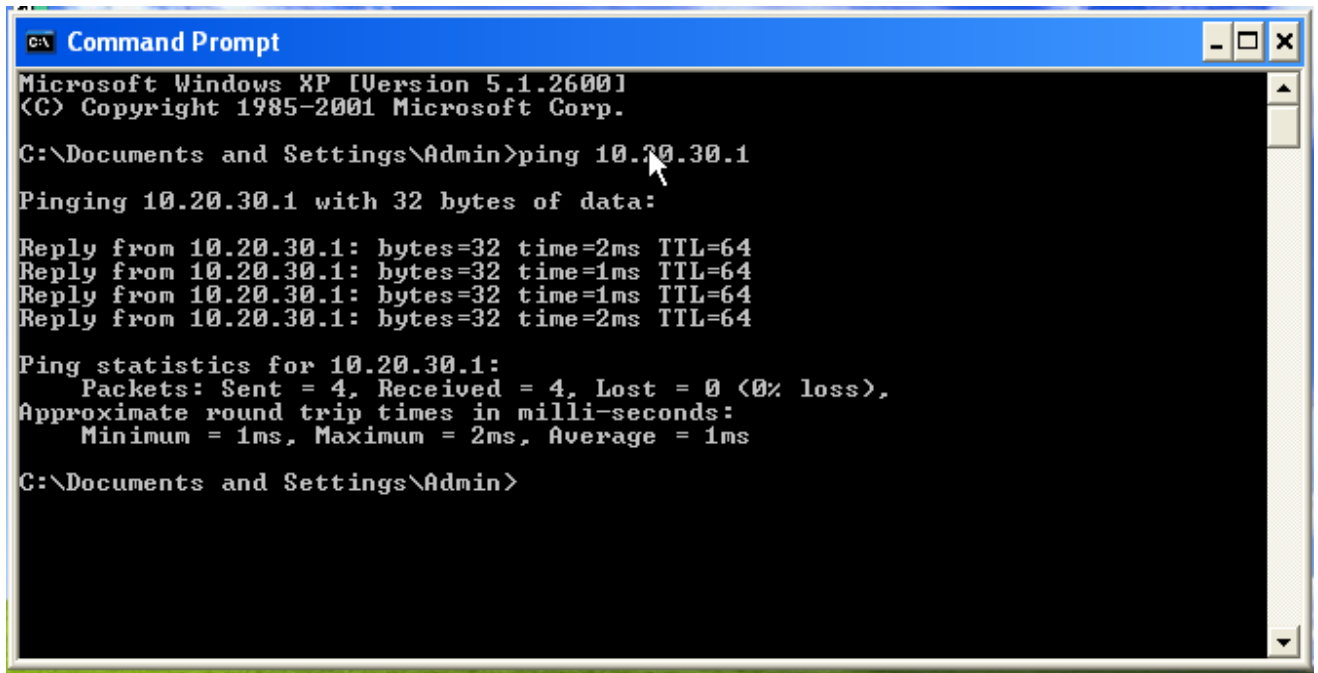
```
root@debian:/etc/squid# sudo systemctl restart squid
root@debian:/etc/squid# sudo systemctl status squid
● squid.service - Squid Web Proxy Server
   Loaded: loaded (/lib/systemd/system/squid.service; enabled; vendor preset: enable
d
   Active: active (running) since Wed 2021-04-21 14:15:51 WIB; 10s ago
     Docs: man:squid(8)
   Process: 3791 ExecStartPre=/usr/sbin/squid --foreground -z (code=exited, status=0/
S
   Process: 3794 ExecStart=/usr/sbin/squid -sYC (code=exited, status=0/SUCCESS)
  Main PID: 3795 (squid)
    Tasks: 9 (limit: 1138)
   Memory: 17.7M
    CGroup: /system.slice/squid.service
            └─3795 /usr/sbin/squid -sYC
              └─3797 (squid-1) --kid squid-1 -sYC
                ├─3798 (ncsa_auth) /etc/squid/squid_passwd
                ├─3799 (ncsa_auth) /etc/squid/squid_passwd
                ├─3800 (ncsa_auth) /etc/squid/squid_passwd
                ├─3801 (ncsa_auth) /etc/squid/squid_passwd
                ├─3802 (ncsa_auth) /etc/squid/squid_passwd
                ├─3803 (logfile-daemon) /var/log/squid/access.log
                └─3804 (pinger)
```

3. Lakukan percobaan autentikasi di atas, buatlah penjelasan dan print screen dari kegiatan percobaan !

**PENJELASAN :**

Sebelum dilakukan pengujian AUTENTIKASI, diantara kedua computer yakni Router/proxy Server (Debian 10) dengan Client (Win XP) dilakukan uji koneksi terlebih dahulu :

**CAPTURED :**



```
C:\> Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Admin>ping 10.20.30.1
Pinging 10.20.30.1 with 32 bytes of data:

Reply from 10.20.30.1: bytes=32 time=2ms TTL=64
Reply from 10.20.30.1: bytes=32 time=1ms TTL=64
Reply from 10.20.30.1: bytes=32 time=1ms TTL=64
Reply from 10.20.30.1: bytes=32 time=2ms TTL=64

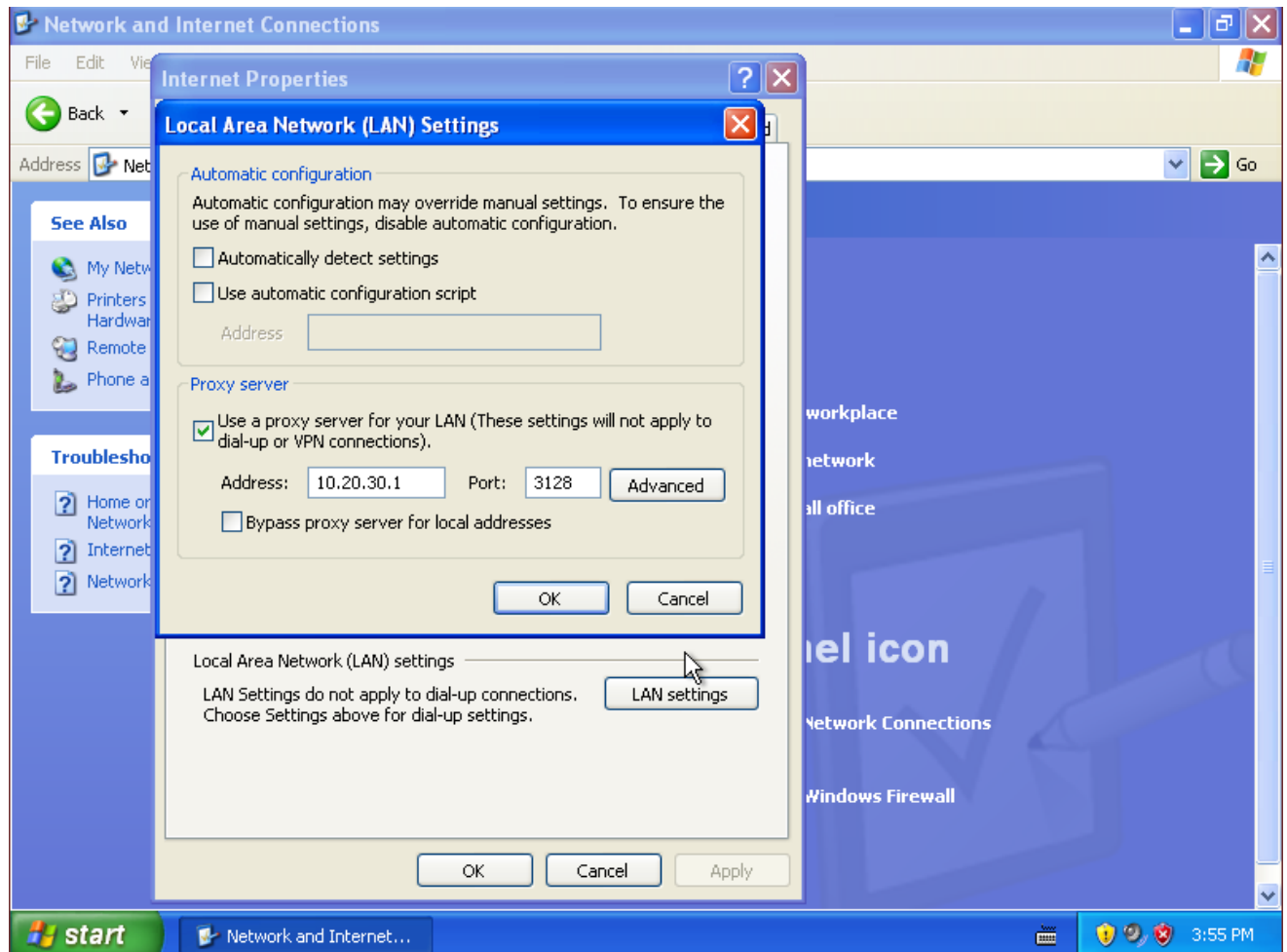
Ping statistics for 10.20.30.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\Documents and Settings\Admin>
```

Lakukan konfigurasi Proxy pada Browser dari computer Client (Win XP) seperti berikut :

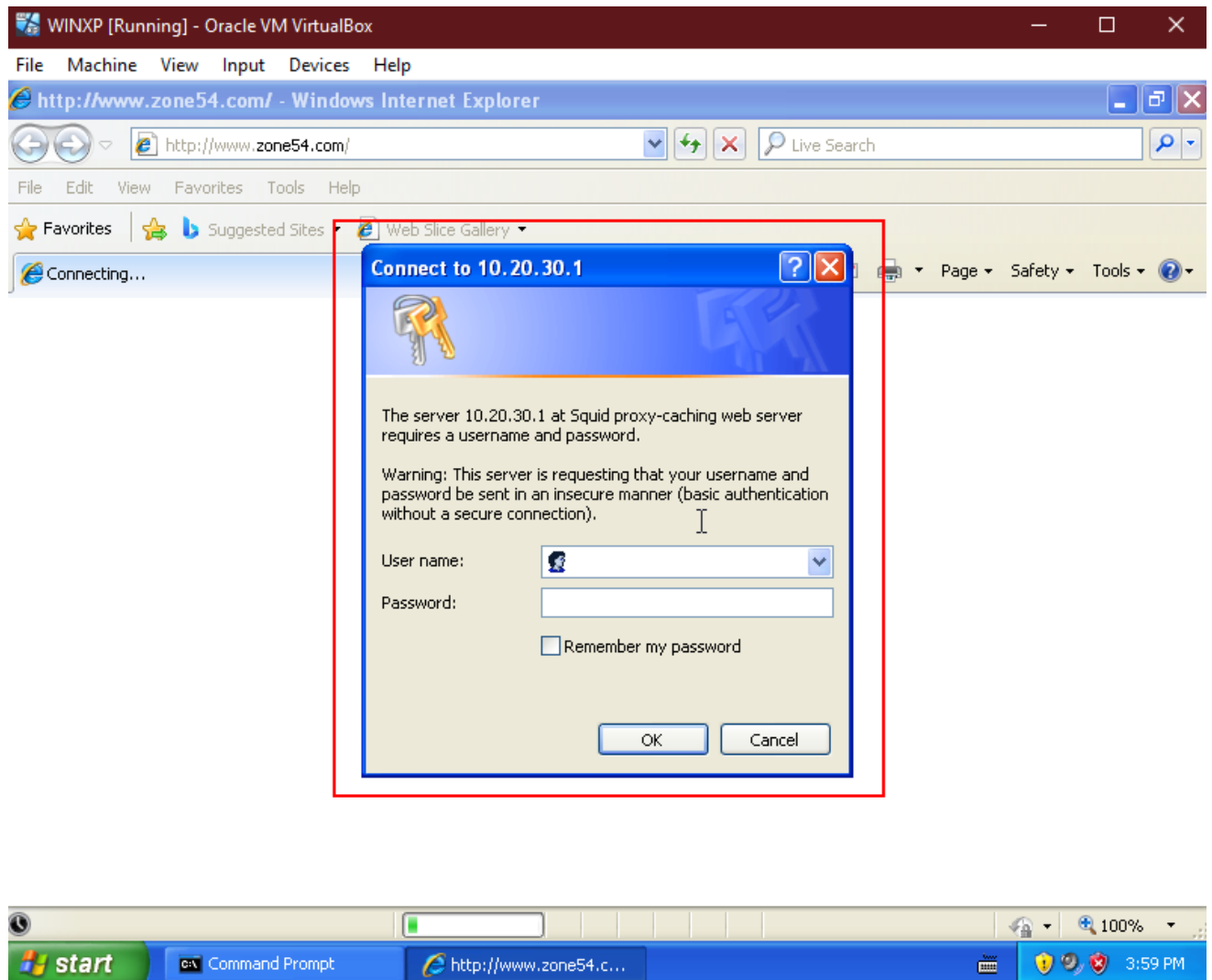
Misal Browser menggunakan “ Internet Explorer “

**CAPTURED :**



## Hasil Tampilan AUTENTIKASI

**CAPTURED :**



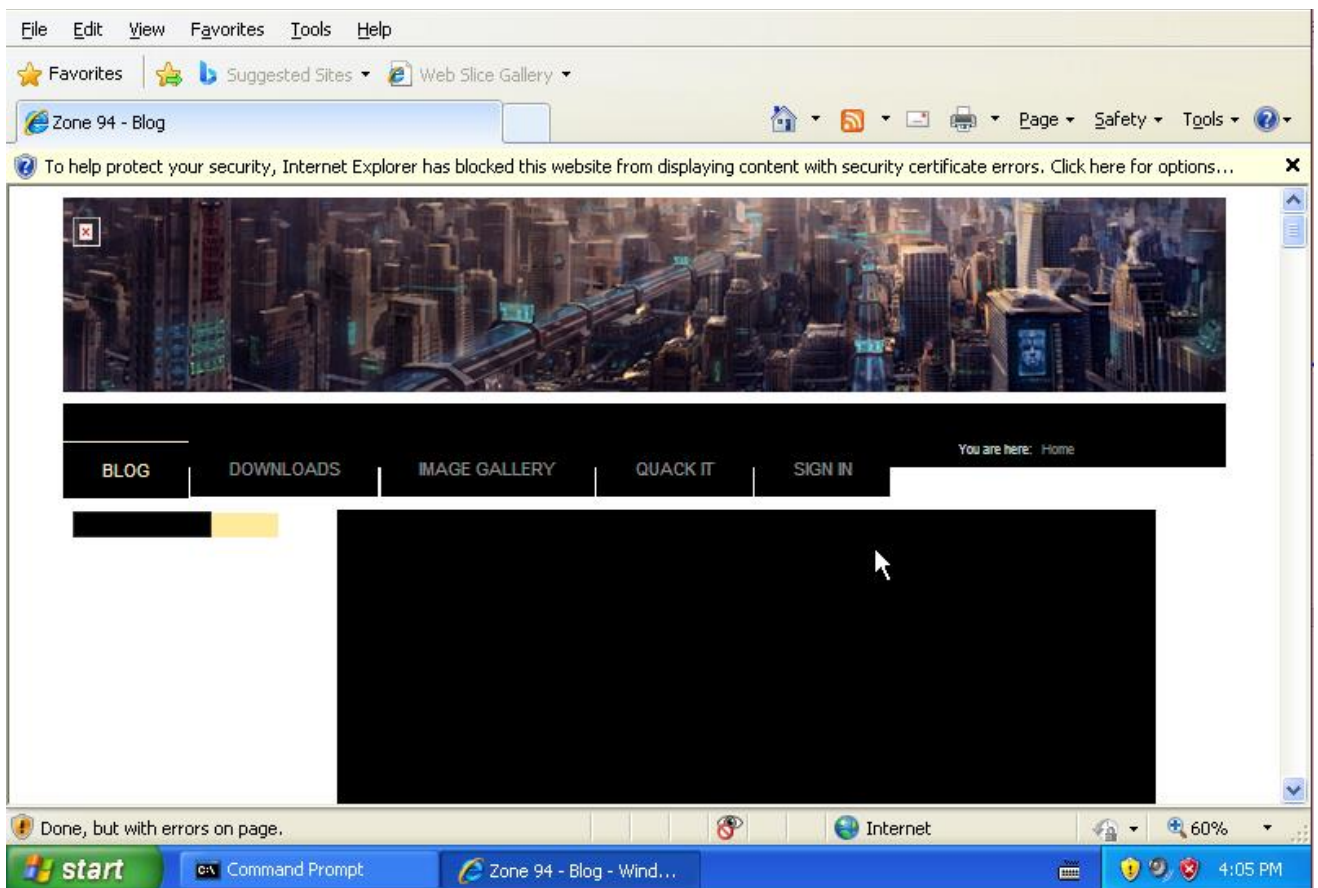
Memasukkan Username dan Password yang benar

**CAPTURED :**



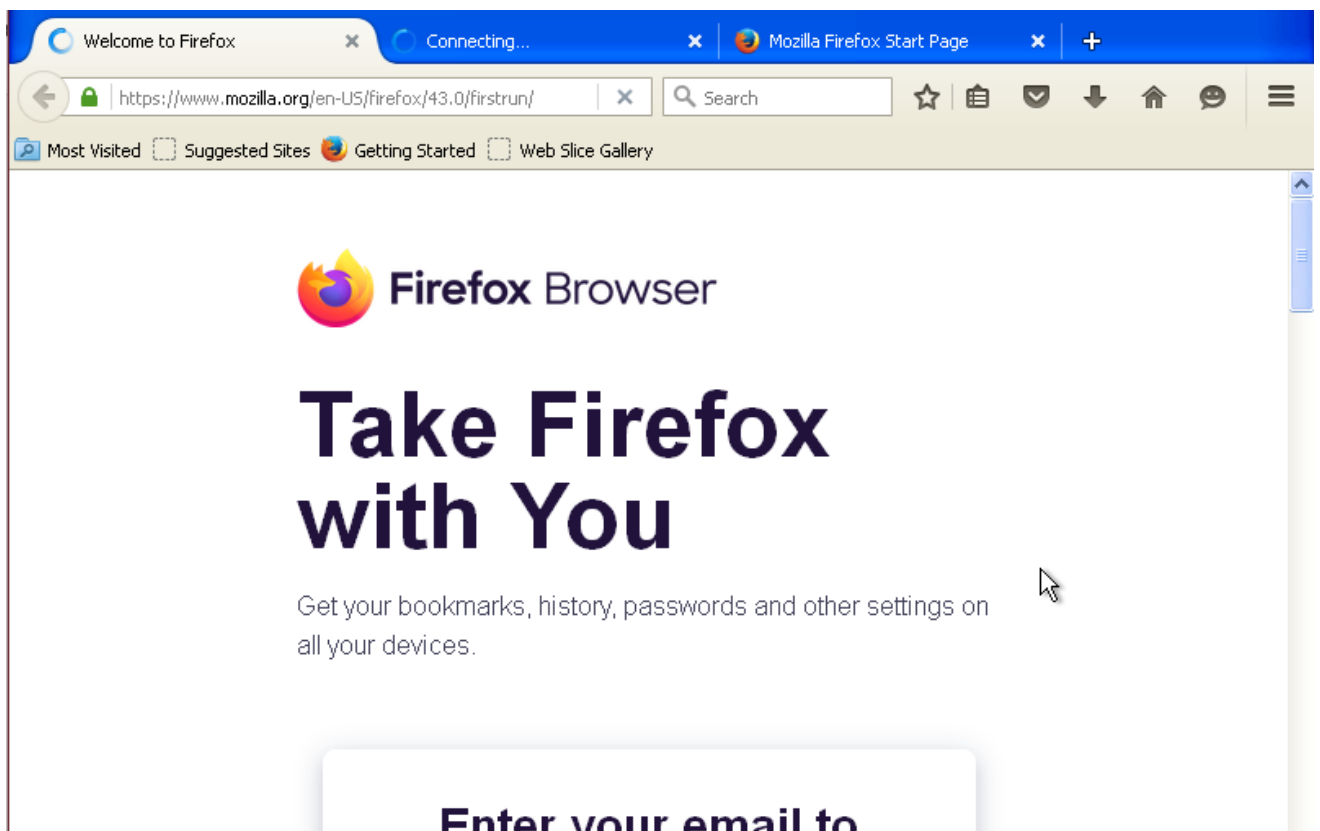
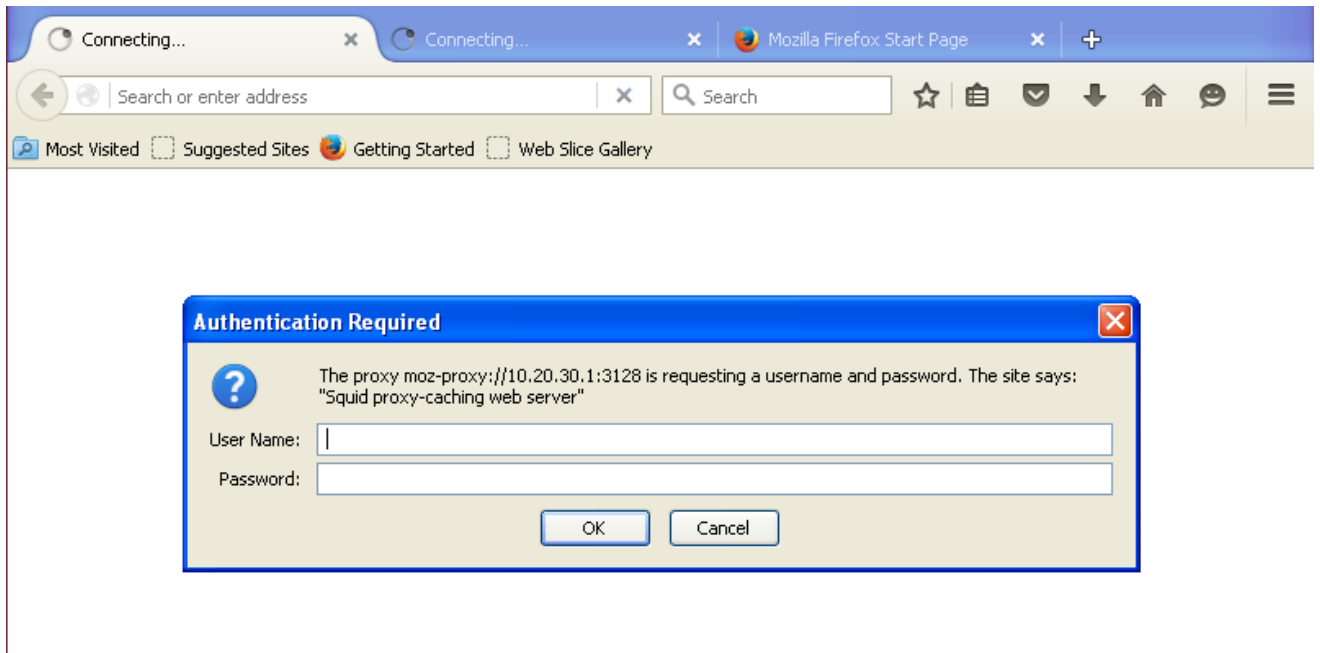
Hasil Tampilan setelah proses AUTENTIKASI

**CAPTURED :**



Pada Browser misalnya Mozilla :

**CAPTURED :**



4. Berikan kesimpulan dari percobaan tersebut !

### **KESIMPULAN :**

Proxy Squid menyediakan tiga pilihan otentikasi, yaitu :

- otentikasi dasar (Authentication Basic),
- otentikasi intisari (Authentication Digest) dan
- NTLM.

Dalam latihan ini, pengaturan proxy yang digunakan adalah otentikasi dasar. Latihan dimulai dengan membuat topologi dan pemetaan alamat. Selanjutnya, instal paket perangkat lunak untuk otentikasi dasar, Squid3. Setelah menginstal paket, konfigurasi otentikasi dasar akan diterapkan, dan hasilnya ditunjukkan di bawah ini. Pengaturan proxy ini memberikan keamanan yang lebih baik karena tidak semua pengguna dapat mengakses Web atau layanan yang disediakan oleh server. Wajibkan pengguna untuk membuktikan keaslian data mereka dengan memasukkan nama pengguna dan sandi yang cocok dengan akun mereka.

Ketika proses otentikasi dilakukan dan datanya benar, pengguna akan diarahkan ke halaman yang diharapkan, tetapi jika proses otentikasi gagal maka proses otentikasi akan terus berjalan dan pengguna tidak dapat diarahkan ke halaman yang diharapkan. Dengan kata lain, otentikasi ini memastikan bahwa pengunjung layanan adalah pengguna server yang sah, sehingga pengguna / pengunjung yang berwenang dapat mengakses layanan server yang disediakan. Oleh karena itu, dapat dipastikan bahwa pengguna yang tidak sah yang membuat permintaan di server target tidak dapat mengakses layanan di server itu.