Membangun Jaringan Sederhana (Virtual) dengan Multiple OS di VMWare

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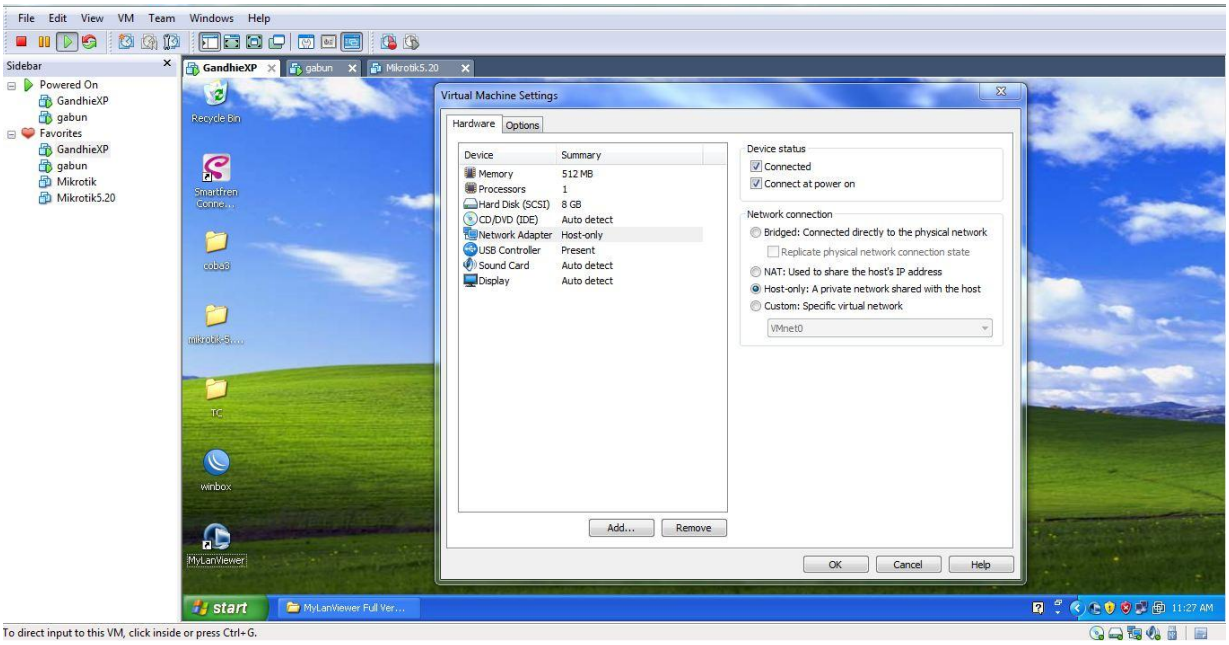
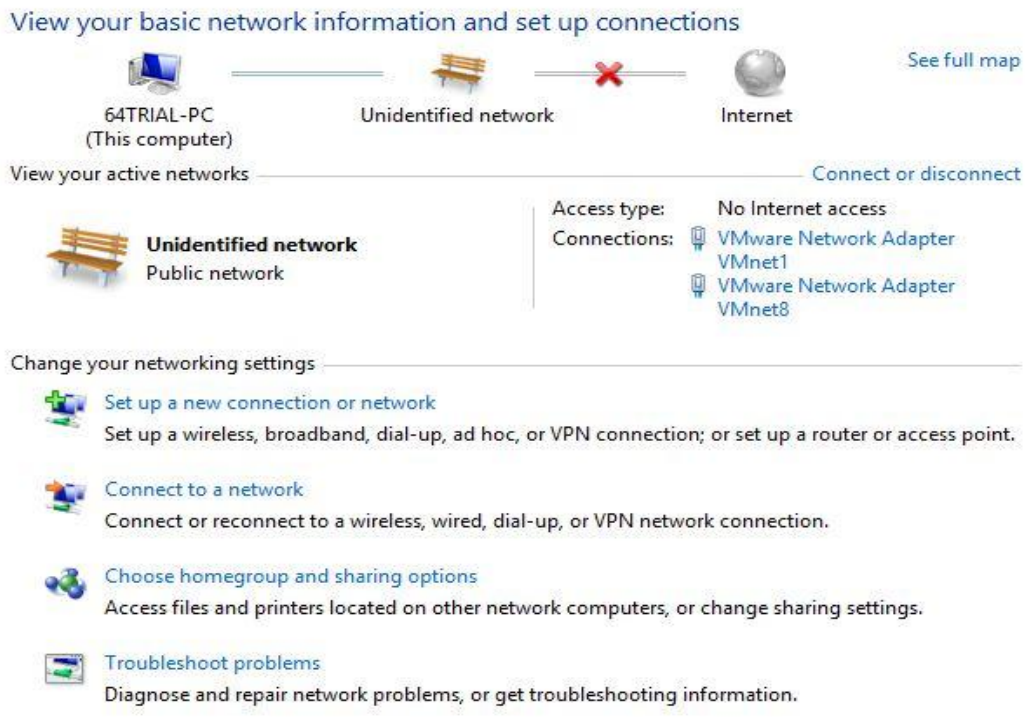
VMWare adalah software yang digunakan sebagai Virtual Komputer didalam Komputer Asli, yang memungkinkan anda untuk menginstall OS lain di dalam Komputer Asli tanpa mengganggu sistem pada komputer tersebut. Maka dengan lebih dari 1 OS yang terinstall di VMWare dapat memungkinkan Kita untuk membuat virtualisasi jaringan sederhana .

Mengkoneksikan Sistem-sistem Operasi di Vmware dengan PC Host

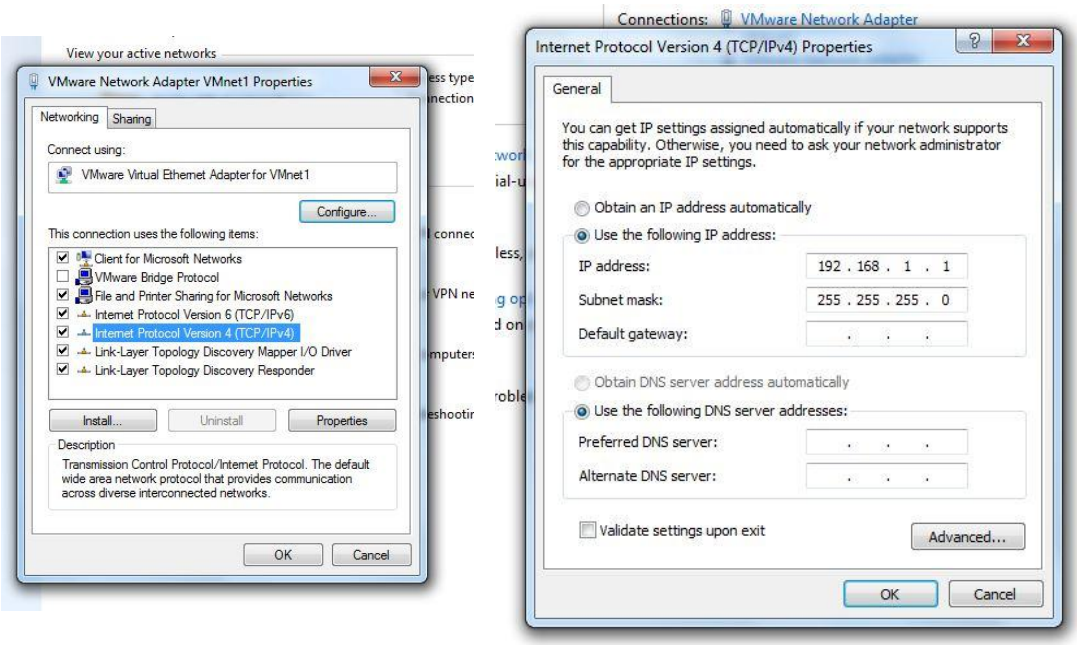
Langkah awalnya tentu saja kita jalankan VMWare kita. Pada tutorial kali ini saya menggunakan 3 Operating System (OS), yaitu Ubuntu 9.10, Widows XP, dan Mikrotik. Selanjutnya kita setting pada bagian Network adapter di Virtual Machine dan kita buat koneksinya menjadi Host Only. Hal ini dilakukan agar semua OS di VM ware dapat terhubung dengan PC Host (Komputer Asli). Lakukan langkah ini untuk semua OS.



Langkah berikutnya kita setting IP pada Komputer Asli atau PC Host. Langkahnya sama ketika kita mengatur IP seperti biasanya tapi ingat, yang kita set disini adalah network adapter untuk VMWare yaitu VMWare network adapter 1.

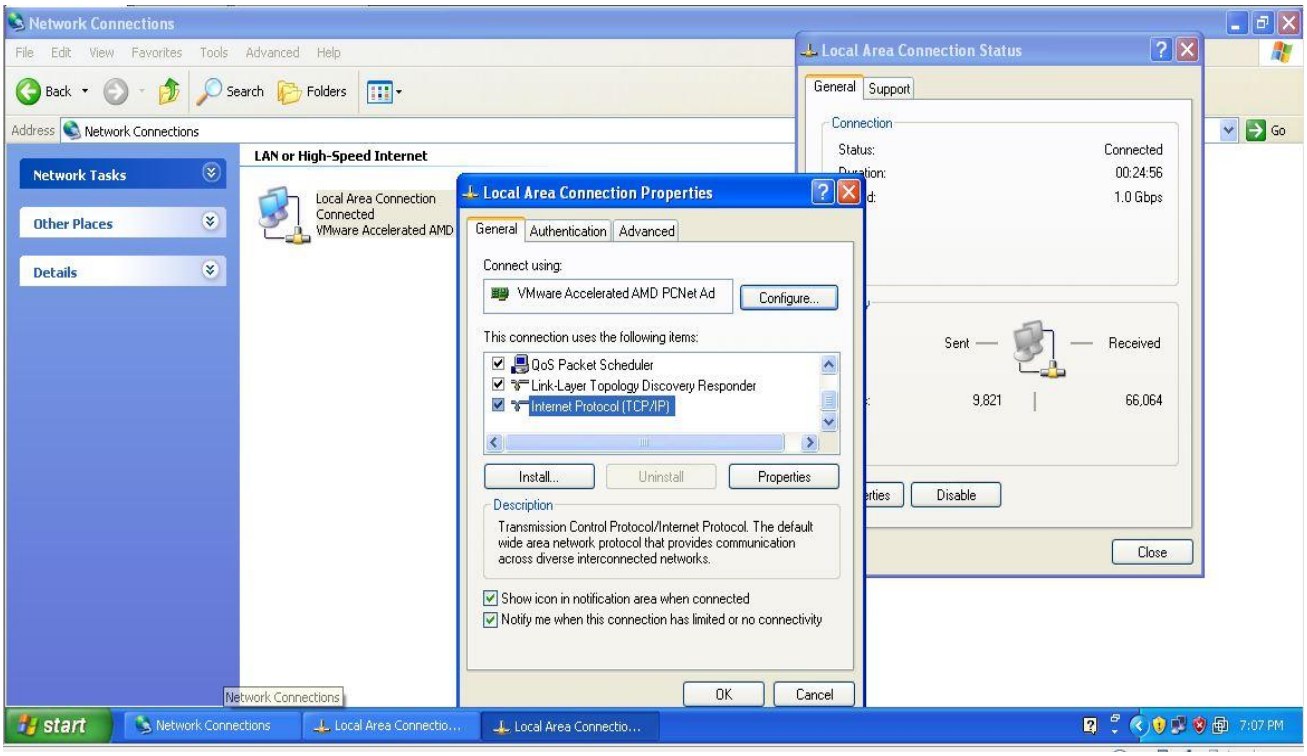


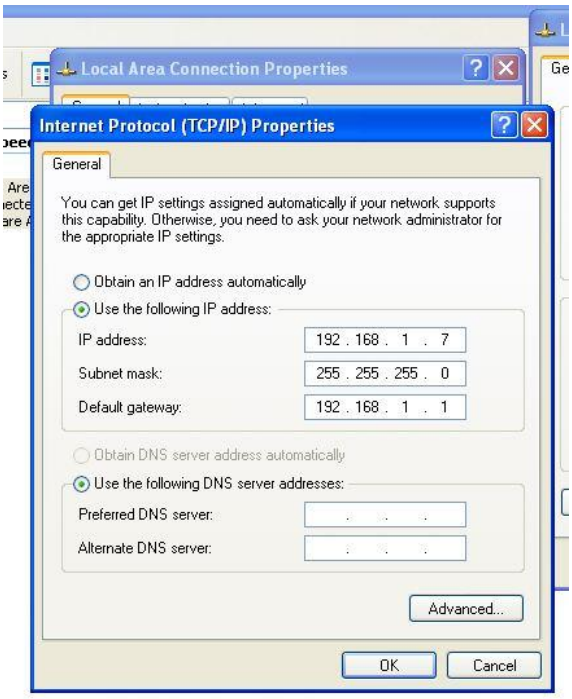
Double klik pada VMWare network adapter 1, dan kita masukkan IP dengan langkah seperti biasa



Isikan IP 192.168.1.1 dan subnet masknya 255.255.255.0 , klik OK.

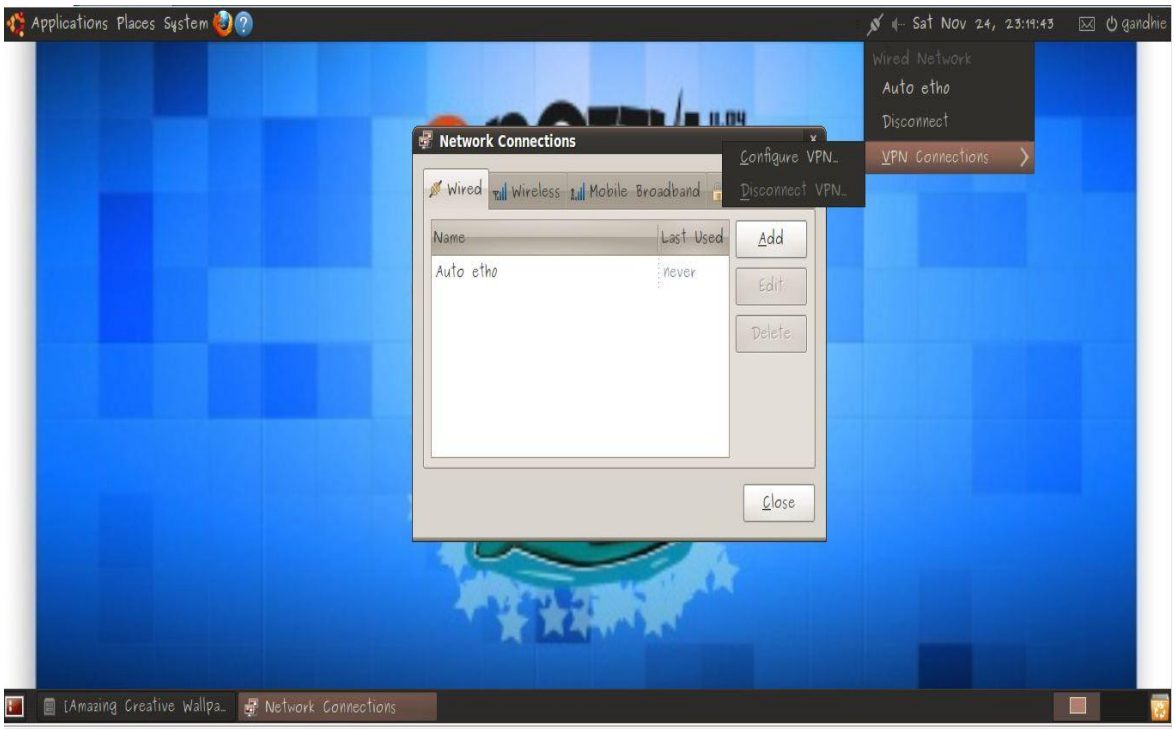
Sekarang kita set IP pada OS virtual di VMWare untuk yang pertama kita set IP pada Windows XP. Masuk ke Control Panel kemudian pilih network connection, double klik pada Local Area Connection dan masukkan IP.



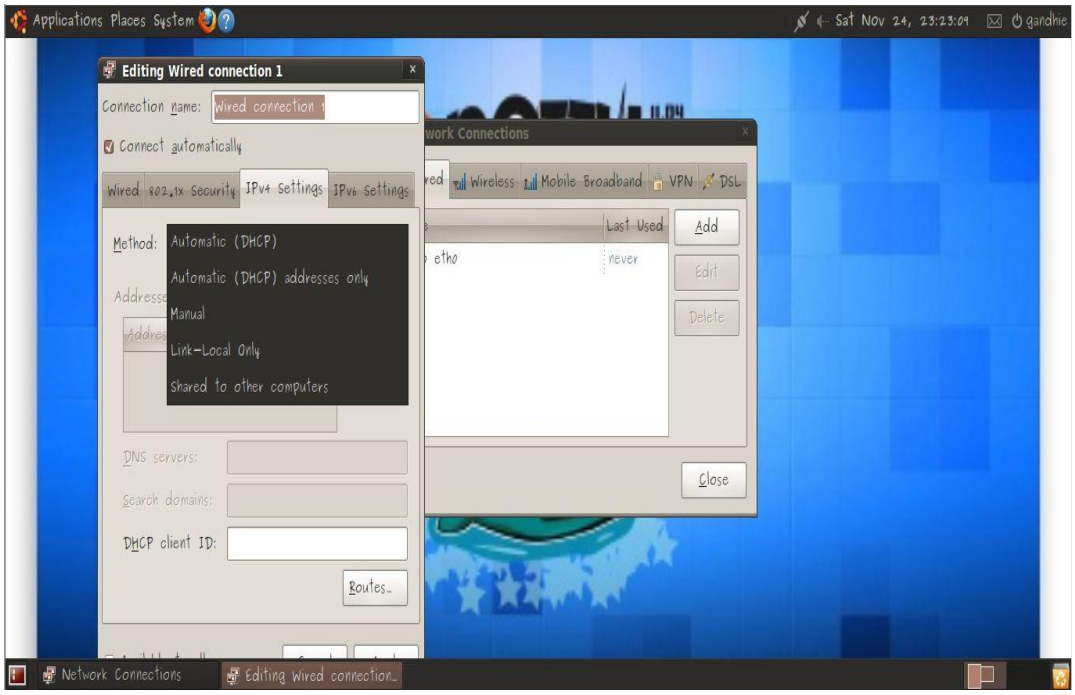


Masukkan IP 192.168.1.7
Netmask 255.255.255.0 dan
Gatewaynya 192.168.1.1

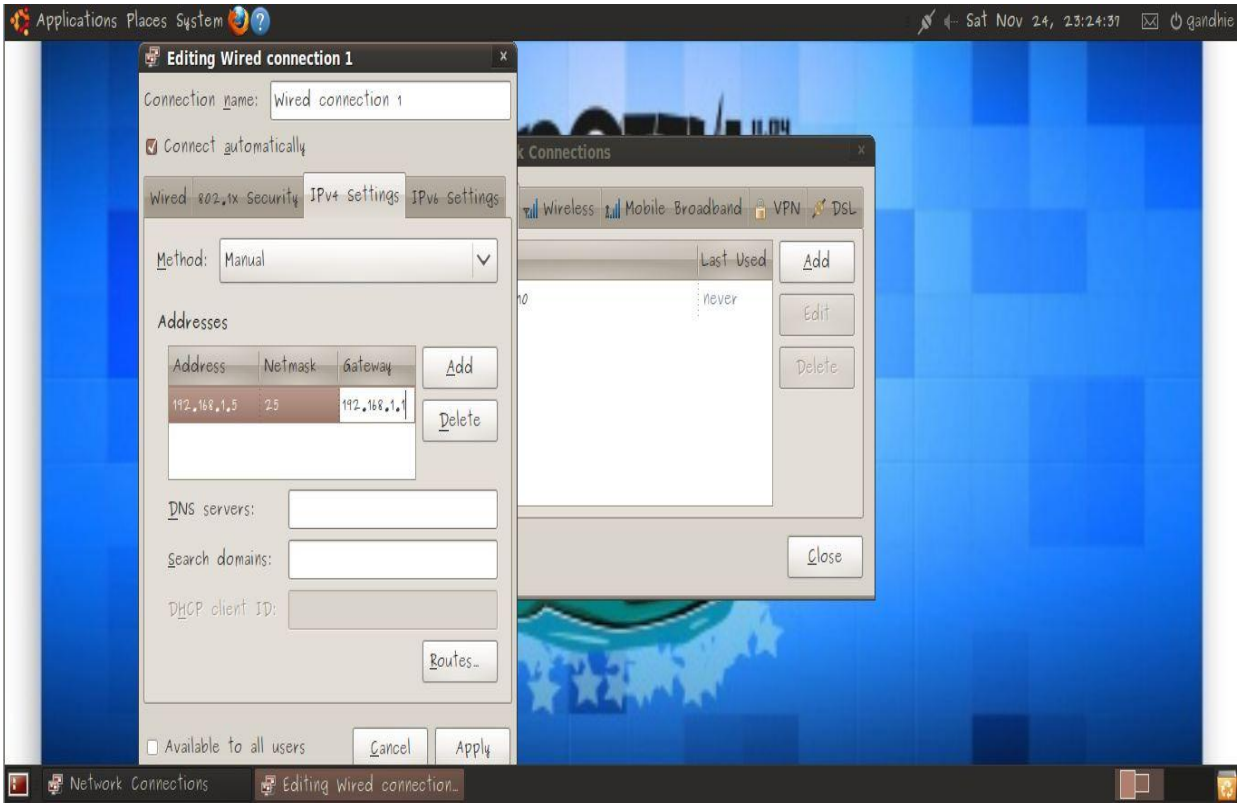
Lakukan langkah yang sama (Set IP) untuk OS selanjutnya, yaitu Ubuntu. Masuk ke network connection,



Pada IPV4 setting pilih Manual.



Kita isikan IP 192.168.1.5 Netmask 255.255.255.0 atau 25 dan Gatewaynya 192.168.1.1



Lakukan juga untuk OS Mikrotik dengan cara , ketik perintah ip address add address= Nomor IP netmask= (sama dengan langkah sebelumnya) interface=Local. Seperti tampak pada gambar

```
[admin@gandhie] >
[admin@gandhie] >
[admin@gandhie] > interface print
Flags: D - dynamic, X - disabled, R - running, S - slave
 #     NAME                                TYPE                MTU L2MTU  MAX-L2MTU
 0  R  Public                              ether              1500
 1  R  Local                               ether              1500
[admin@gandhie] > ip address add address=192.168.1.9 netmask=255.255.255.0 inter
face=Local
[admin@gandhie] > _
```

Kita cek IP yang telah kita set dengan perintah IP address Print

```
[admin@gandhie] >
[admin@gandhie] >
[admin@gandhie] > ip address print
Flags: X - disabled, I - invalid, D - dynamic
 #   ADDRESS            NETWORK         INTERFACE
 0   192.168.1.6/24     192.168.1.0     Local
[admin@gandhie] > _
```

Langkah selanjutnya adalah kita test koneksi, apakah satu komputer dengan komputer lain sudah dapat terhubung atau belum. Kita lakukan ping, dari PC host ke semua OS yang ada di VMWare

```
C:\Windows\system32\cmd.exe

C:\Users\64trial>ping 192.168.1.6

Pinging 192.168.1.6 with 32 bytes of data:
Reply from 192.168.1.6: bytes=32 time=2ms TTL=64
Reply from 192.168.1.6: bytes=32 time<1ms TTL=64
Reply from 192.168.1.6: bytes=32 time<1ms TTL=64
Reply from 192.168.1.6: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms

C:\Users\64trial>
```

Seluruh OS virtual telah terkoneksi ke PC Host

```
C:\Windows\system32\cmd.exe

C:\Users\64trial>ping 192.168.1.7

Pinging 192.168.1.7 with 32 bytes of data:
Reply from 192.168.1.7: bytes=32 time=1ms TTL=128
Reply from 192.168.1.7: bytes=32 time=359ms TTL=128
Reply from 192.168.1.7: bytes=32 time=157ms TTL=128
Reply from 192.168.1.7: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 359ms, Average = 129ms

C:\Users\64trial>
```

```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\64trial>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:
Reply from 192.168.1.5: bytes=32 time<1ms TTL=64
Reply from 192.168.1.5: bytes=32 time<1ms TTL=64
Reply from 192.168.1.5: bytes=32 time<1ms TTL=64
Reply from 192.168.1.5: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\64trial>
```

Kita lakukan ping dari semua OS ke semua OS Virtual maupun ke PC Host Windows XP:

```
C:\WINDOWS\system32\cmd.exe

C:\Documents and Settings\Administrator>ping 192.168.1.6

Pinging 192.168.1.6 with 32 bytes of data:

Reply from 192.168.1.6: bytes=32 time=2ms TTL=64
Reply from 192.168.1.6: bytes=32 time=1ms TTL=64
Reply from 192.168.1.6: bytes=32 time<1ms TTL=64
Reply from 192.168.1.6: bytes=32 time=1ms TTL=64

Ping statistics for 192.168.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\Documents and Settings\Administrator>_
```

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.1.5: bytes=32 time=35ms TTL=64
Reply from 192.168.1.5: bytes=32 time=1ms TTL=64
Reply from 192.168.1.5: bytes=32 time<1ms TTL=64
Reply from 192.168.1.5: bytes=32 time=1ms TTL=64

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 35ms, Average = 9ms

C:\Documents and Settings\Administrator>_
```

```
C:\WINDOWS\system32\cmd.exe

C:\Documents and Settings\Administrator>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=22ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 22ms, Average = 5ms

C:\Documents and Settings\Administrator>_
```

Ubuntu :

```
root@ubuntu: /home/gandhie
File Edit View Terminal Help
gandhie@ubuntu:~$ sudo su
root@ubuntu:/home/gandhie# ping 192.168.1.1
PING 192.168.1.1 (192.168.1.1) 56(84) bytes of data.
64 bytes from 192.168.1.1: icmp_seq=1 ttl=128 time=3.04 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=128 time=0.710 ms
^C
--- 192.168.1.1 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1002ms
rtt min/avg/max/mdev = 0.710/1.878/3.046/1.168 ms
root@ubuntu:/home/gandhie# ping 192.168.1.6
PING 192.168.1.6 (192.168.1.6) 56(84) bytes of data.
64 bytes from 192.168.1.6: icmp_seq=1 ttl=64 time=1.16 ms
64 bytes from 192.168.1.6: icmp_seq=2 ttl=64 time=0.777 ms
^C
--- 192.168.1.6 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1003ms
rtt min/avg/max/mdev = 0.777/0.972/1.167/0.195 ms
root@ubuntu:/home/gandhie# ping 192.168.1.7
PING 192.168.1.7 (192.168.1.7) 56(84) bytes of data.
64 bytes from 192.168.1.7: icmp_seq=1 ttl=128 time=2.07 ms
64 bytes from 192.168.1.7: icmp_seq=2 ttl=128 time=0.821 ms
^V64 bytes from 192.168.1.7: icmp_seq=3 ttl=128 time=0.708 ms
^C
--- 192.168.1.7 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2004ms
rtt min/avg/max/mdev = 0.708/1.202/2.078/0.621 ms
root@ubuntu:/home/gandhie#
```

Mikrotik :

```
[admin@gandhie] > ping 192.168.1.1
HOST                                     SIZE TTL TIME  STATUS
192.168.1.1                                56 128 8ms
192.168.1.1                                56 128 1ms
192.168.1.1                                56 128 1ms
192.168.1.1                                56 128 1ms
    sent=4 received=4 packet-loss=0% min-rtt=1ms avg-rtt=2ms max-rtt=8ms
```

```
[admin@gandhie] > ping 192.168.1.7
HOST                                     SIZE TTL TIME  STATUS
192.168.1.7                                56 128 63ms
192.168.1.7                                56 128 0ms
192.168.1.7                                56 128 0ms
192.168.1.7                                56 128 0ms
    sent=4 received=4 packet-loss=0% min-rtt=0ms avg-rtt=15ms max-rtt=63ms
```

```
[admin@gandhie] > ping 192.168.1.5
HOST                                     SIZE TTL TIME  STATUS
192.168.1.5                                56  64 73ms
192.168.1.5                                56  64 0ms
192.168.1.5                                56  64 0ms
192.168.1.5                                56  64 0ms
    sent=4 received=4 packet-loss=0% min-rtt=0ms avg-rtt=18ms max-rtt=73ms
```

Banyak sekali manfaat dari VMWare salah satunya seperti tutorial diatas ketika kita ingin membuat suatu jaringan pembelajaran ringan tetapi terkendala dengan keterbatasan alat. Sekian tutorial kali ini semoga bermanfaat

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